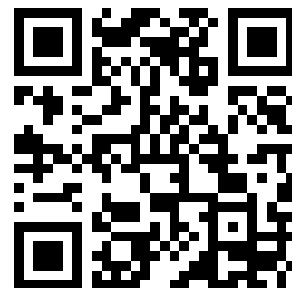


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United States  
Department of  
Agriculture

Forest Service

Pacific  
Northwest  
Region



# Final Environmental Impact Statement

## White Pass Ski Area Proposed Expansion

Wenatchee and Gifford Pinchot  
National Forests

Yakima and Lewis Counties, Washington

July 1990

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Wenatchee  
National  
Forest

301 Yakima Street  
P.O. Box 811  
Wenatchee, WA 98807-0811

Reply To: 2720/1950

Date: July 30th 1990

## White Pass Ski Area Mailing List

Dear Forest Users:

Enclosed you will find the Record of Decision and Final Environmental Impact Statement for the proposed expansion of the White Pass Ski Area. I believe this decision will provide a wide range of winter and summer recreation opportunities in the White Pass area for years to come.

We very much appreciate the depth of concern that you have shown for the future management of this area of land. There has been a high level of public involvement in the analysis process for this proposal, and the ideas and suggestions shared by those with an intimate knowledge of Hogback Basin, the White Pass Ski Area, and adjacent Wildernesses were invaluable to the development of this environmental impact statement. The final decision is based on the use of National Environmental Policy Act (NEPA) guidelines and the public involvement.

I extend my special thanks to those of you who shared your thoughts and concerns on the proposal. We look forward to your continuing involvement with the Wenatchee National Forest.

Sincerely,

  
SONNY J. O'NEAL  
Forest Supervisor

Enclosures



# Final Environmental Impact Statement

## For The Proposed Expansion of White Pass Ski Area

Wenatchee National Forest and Gifford Pinchot National Forest  
Yakima and Lewis Counties In Washington

**Type of Statement: Administrative Environmental Impact Statement**

**Proposed Action and Location: White Pass Ski Area**

Naches Ranger District  
Wenatchee National Forest  
Yakima County, Washington

and

Packwood Ranger District  
Gifford Pinchot National Forest  
Lewis County, Washington

**Lead Agency:**

USDA Forest Service  
Wenatchee National Forest  
P.O. Box 811  
Wenatchee, Washington 98807

**Responsible Official:**

Sonny J. O'Neal, Forest Supervisor  
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P.O. Box 811  
Wenatchee, Washington 98807  
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### Abstract

This Final Environmental Impact Statement (FEIS) is prepared in response to an expansion request by White Pass Company. Seven alternatives, including the "No Action," are considered in this FEIS. The seven alternatives consider different arrangements of winter development, from the present capacity of 2,500 skiers to a level of 4,500 skiers. The alternatives include summer recreation strategies.

This document presents the results of the environmental analysis of alternative ways of managing the White Pass area. Implementation of the development schedule hinges on the demand for skiing. Projected growth in winter sports activities indicates this should be a viable proposal.

Alternative 7, full development, is the Forest service Preferred Alternative. Alternative 2, Improvements and Modifications of the Existing Permit Area, is the Environmentally Preferable Alternative.

Because of the high cost of producing this document, a minimum number have been printed. When you have no further need for it, please pass it on to a friend or return it to the Wenatchee National Forest, P.O. Box 811, Wenatchee WA 98807.

Thank you

July 1990

**This Document**

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**CARTER COMMUNICATIONS**

**Wenatchee, Washington**

Editors' Note

Certain terms have been consistently treated as proper nouns in the interests of clarity, though English usage might dictate otherwise. They are Ski Area and Permit Area when referring to the White Pass Ski Area and Special Use Permit; Basin when meaning Hogback Basin (*the* particular basin this document concerns); and Chair or Chair Lift when referring to a particular one in the proposal. Special Use Permit is dealt with as a proper name of a kind of Forest Service legal agreement, and Wilderness is a legal designation not to be confused with the generic wild area called wilderness.

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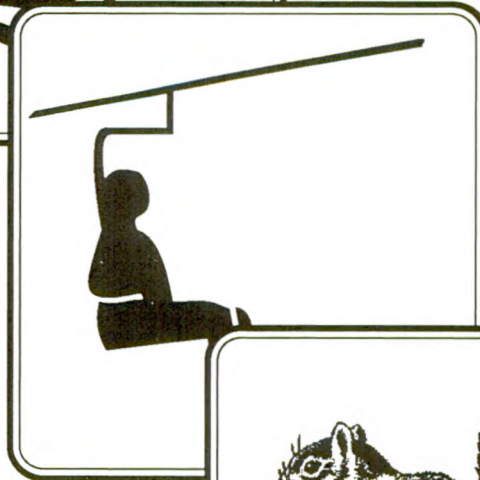
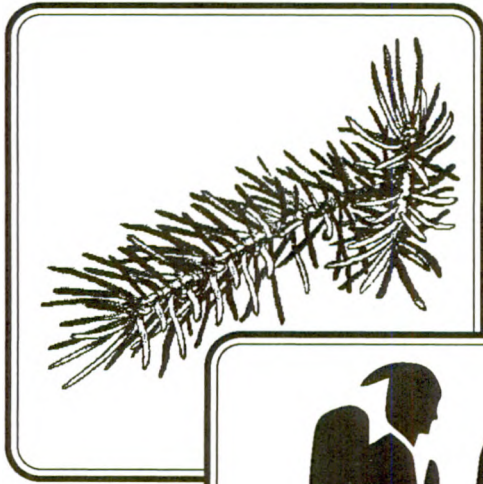
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# SUMMARY

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## SUMMARY

### PURPOSE AND NEED FOR ACTION – CHAPTER I

#### INTRODUCTION

This Final Environmental Impact Statement (FEIS) is prepared to analyze skiing expansion at the White Pass Ski Area. White Pass Company, Inc., has made an application to add four chair lifts, to increase the present area by about 1,100 acres, to add a warming hut part way up Hogback Mountain, and to increase the comfortable capacity of the ski slopes from 2,500 skiers per day to 4,500. Two of the proposed chair lifts would be in Hogback Basin, an area that was withdrawn from the Goat Rocks Wilderness in 1984 because of its potential for ski development.

Both alpine and nordic skiing are considered in this FEIS. Growth in skiers at Washington State areas has not kept pace with other sections of North America. The White Pass share of its skiing market area (populations within two hours travel of White Pass) has remained constant. Population within the market area, south Puget Sound area and the Yakima Valley, is projected to continue to increase. White Pass Company desires to become more competitive within this market area while continuing to provide a family-oriented ski area; to regain a greater share of skiers in its market area; to serve anticipated skier increases; and, to lure back a share of the Washington State skiers who are going out of state to ski.

Nordic skiing in the market area is on an upward trend, with the greatest increases in groomed-track skiing. White Pass proposes to increase the amount of groomed track from 15 km to 25 km. Backcountry nordic skiers now use the Hogback Basin and are concerned about being displaced by the proposed development. Local communities, especially Packwood and Randle, are increasingly dependent on tourism and are very interested in the White Pass development.

#### THE PROPOSAL

White Pass Company, Inc., proposes to add four chair lifts, two in the upper Hogback Basin, one at lower elevation starting 1/4 mile from Knuppenburg Lake on Highway 12, and Chair Lift 8 in the existing area. This would add those 1,100 acres to the present development.

The proposal also includes building a mid-mountain warming hut to provide on-slope restroom and day lodge services. Base Area facilities and services would also be added to keep all services in balance. No additional on-site overnight accommodations are proposed.

Many alpine skiers are seeking high quality, short skiing vacations lasting two to four days. Today, many Washington State skiers go out of state for these mini vacations. They also want dependable snow conditions, runs with a vertical drop of more than 2,000 feet, uncrowded surroundings and modern facilities.

White Pass Company's primary reasons for expansion are: (a) to continue to provide quality skiing for present skiers; (b) to be able to meet the demands of additional skiers; and, (c) to become more competitive and to capture a greater share of the Washington State skier market. These goals would be accomplished by adding lifts and facilities, providing more and a better variety of skiing terrain, providing high-quality, uncrowded skiing opportunities, and providing nordic skiing opportunities.

The Wilderness Act of 1964 (PL 88-577) incorporated the Goat Rocks Wild Area into the Wilderness Preservation System as the Goat Rocks Wilderness. This precluded White Pass Company's expansion to the south because the Wilderness boundary was within 1,000 feet of Pigtail Peak.

In an unprecedented action in the 1984 Washington State Wilderness Act [PL 98-339], Congress withdrew 800 acres in the Hogback Basin area from Wilderness designation. The Congressional Record for this act includes the following statement:

The 800 acres deleted from the existing Goat Rocks Wilderness have significant potential for ski development and should be managed by the Secretary of Agriculture to utilize this potential in accordance with applicable laws, rules, and regulations.

Some nordic skiers, especially those who enjoy the present unique setting of Hogback Basin, oppose expansion and added lifts. These skiers want to retain the current opportunities for experiencing isolation, independence, closeness to nature and self-reliance in a high-elevation, alpine setting — with easy access from Chair Lifts 1 and 2.

## **THE EIS PROCESS**

White Pass Company's application was received and an Environmental Assessment (EA) was initiated in 1985. The draft EA was completed in 1988. During the review of this draft EA the Forest Service decided that, due to the significance of the issues, an Environmental Impact Statement would be required.

Formal Scoping for the Draft Environmental Impact Statement (DEIS) generated 197 responses. These were evaluated and a list of issues, concerns and opportunities was developed. The public was also asked to respond to the DEIS, which was released in June, 1989. 497 responses were received. These prompted refinement of data in the DEIS and acquisition of additional data needed to complete the analysis of the alternatives. This Final Environmental Impact Statement (FEIS) includes these changes.

The FEIS will lead to a Record of Decision (ROD) where the Deciding Officer will select an alternative which will provide the most desirable combination of physical, biological, social and economic benefits to the public. The purpose of the FEIS is to present the information

required to evaluate the potential effects of the proposed expansion of skiing and other recreation opportunities at White Pass; to assist in making a decision on whether to amend the White Pass Company, Inc.'s Special Use Permit to include additional area; to specify the conditions of any Special Use Permit amendment; and, to provide a framework to carry out the decision.

Preparation of an EIS is one step in the planning process. Decisions to be made by the Forest Service as a result of the analysis in this EIS and other information involve whether National Forest System lands should be used for the requested activity and, if so, with what constraints. If a decision is made to issue an amended Special Use Permit, other steps will be required before any development can occur.

After approval of permits and acceptance of detailed plans, the requirements established by the Forest Service would be monitored through the annual operating plans that White Pass Company submits to the Forest Service for approval.

### **MAJOR ISSUES**

The ID Team used the analysis of the public responses to develop criteria for measuring impacts, to develop mitigation measures, and to formulate alternatives so each of the issues raised in the responses would be satisfactorily resolved in at least one of the alternatives analyzed.

The ID Team further synthesized this list of Issues, Concerns and Opportunities into five areas to be used as Comparison Criteria for rating the alternatives. These are:

1. **Additional Recreation Opportunities**  
Display the possibility of providing the appropriate mix of recreation activities (including alpine and nordic skiing) in the immediate areas as well as in surrounding areas. Consider supply/demand, and summer and winter activities. The goal is to provide for a variety of activities in desired settings to the point that user-group conflicts can be resolved and other management objectives can be achieved.
2. **Unique Setting**  
Identify the unique elements of the Hogback Basin setting. Measure the effects of each alternative on these elements.
3. **Physical and Biological Effects**  
Identify the potential effects on the physical and biological environment. Assume mitigation measures are in place and display the expected consequences for each alternative.
4. **Wilderness Impacts**  
Identify potential impacts of each alternative on Wilderness, especially on the Shoe Lake and Miriam Basin areas. Wilderness parameters will be used to display these effects, i.e., visitor days/visits, numbers of encounters, levels of acceptable change, etc. Summer and winter impacts will be considered.
5. **Displaced Backcountry Skiers**  
Identify the amount of displacement that would occur with each alternative. Assess the effects of this displacement.

## **CHANGES MADE BETWEEN DRAFT AND FINAL EIS**

Public response has prompted the refinement of DEIS information and acquisition of additional data needed to complete the analysis. Appendix D contains a summary of the substantive comment and Forest Service response to it.

Additional information concerning economic feasibility and demand projections based on population growth were added. The market area was defined and data from a ski industry study and marketing strategy was included.

Summer direction alternatives 8(S) and 10(S) in the DEIS were incorporated into the winter development alternatives. Also, the modifications within the permit area (Alternative 2) were included in the other development alternatives, Alternatives 3–7. This allows display and selection of one complete alternative rather than a combination of partial ones. Alternative 9(S), the summer constrained alternative to meet Wilderness objectives, was dropped because planned mitigation measures met its intent.

Alternative 3 was modified to include development of nordic skiing in Hogback Basin. New mitigation measures were developed and the effectiveness of the mitigation was discussed. All mitigation is now displayed in Chapter II of the FEIS. More detailed air quality analysis was prepared and northern spotted owl effects were revised to include new data. Several EIS sections were rewritten and maps were revised for clarity.

## **ALTERNATIVES – CHAPTER II**

### **ALTERNATIVES IN DETAIL**

Seven alternatives are analyzed in this EIS. These alternatives are designed to provide a variety of choices for further development at White Pass: for alpine skiing, for nordic skiing, and for summer recreation.

The alternatives are summarized as follows:

**Alternative 1** — No Action (No Change).

**Alternative 2** — Improvements and Modifications of Existing Permit Area.

**Alternative 3** — Add Chair Lift 7 and develop nordic skiing in Hogback Basin.

**Alternative 4** — Add Chair Lift 5 and Mid-Mountain Warming Hut.

**Alternative 5** — Add Chair Lifts 5 and 6 and Mid-Mountain Warming Hut.

**Alternative 6** — Add Chair Lifts 5 and 7 and Mid-Mountain Warming Hut.

**Alternative 7** — Add Chair Lifts 5, 6 and 7 and Mid-Mountain Warming Hut.

Alternatives are designed to balance support facilities with comfortable capacity. Mitigation measures designed to reduce or minimize adverse effects are incorporated into each alternative. The alternatives are depicted in Figures II-1 through II-7 and detailed data for each are listed in Tables II-1 through II-7, pages 228—255.

## PREFERRED ALTERNATIVE

Alternative 2 (Improvements and Modifications of Existing Area) is the Environmentally Preferable Alternative. This alternative corrects existing problems within the present Permit Area with little additional environmental impact. It also provides for enhanced summer opportunities in Hogback Basin and the potential for reducing Wilderness impacts in Shoe Lake Basin. However, this alternative does not provide additional ski area capacity.

Alternative 7 (Add Chair Lifts #5, #6 and #7 and Mid-Mountain Warming Hut) is the Forest Service Preferred Alternative. Additional physical and biological effects are considered to be within acceptable limits. Winter Wilderness effects would increase due to lifts in Hogback Basin. However, summer Wilderness effects, with the interpretive program, could be similar to Alternative 2. This alternative provides the highest projected winter use, considering both alpine and nordic opportunities. It is recognized that the unique setting of Hogback Basin will be diminished for nordic skiers, while becoming available for alpine skiers.

## AFFECTED ENVIRONMENT - CHAPTER III

### AIR QUALITY

Since no air quality monitoring has been conducted in the vicinity of the White Pass Ski Area, an air quality analysis assuming reasonably foreseeable conditions was performed using computer models developed by the EPA. The model estimated the existing air quality and the potential impact of Ski Area development on it.

The Clean Air Act provides for the prevention of significant deterioration (PSD) of air quality in areas where the air quality is much better than standards. The original portion of the Goat Rocks Wilderness is designated a Class I airshed, where only a small increment of air quality degradation is permissible. The remainder of the study area is Class II.

Modeling reasonably foreseeable conditions, none of the nearby Wilderness would have its air quality lowered to below current one-hour standards for carbon monoxide or for particulate matter. However, the one-hour standards for CO would be exceeded within the parking area and that area within 300 meters of the center of the parking lot. Maximum concentrations of particulate matter would result when all 25 fireplaces in the condominium complex were operating and would occur about 200 meters from the complex.

### SOILS

Three distinct geomorphic land types based on terrain and underlying geologic materials have been described

- A. Upper basins (including Hogback Basin)  
Gentle slopes; underlain by basalt; poorly drained.
- B. Cliff area (midslope, 4,500—4,800 ft.)  
Steep slopes; rock outcrops; underlain by basalt.



C. Lower slopes (below cliff line)

Gentle to moderate slopes; soils deeply weathered, sedimentary material; drainage well developed.

Slope failures occur mainly in the steep cliff formations and those associated with concentrated surface runoff and springs.

Generally the soils at the White Pass Ski Area and the areas proposed for expansion are stable but subject to moderate to severe surface erosion once the protective duff and vegetation layer is removed. They can be difficult to revegetate depending on site-specific climatic and fertility conditions.

## **WATER**

The study area is situated on the crest of the Cascade Mountains. The western portion lies in the Millridge Creek and, ultimately, the Cowlitz River drainage. The eastern part is in the Clear Creek and the Tieton River drainages. Several springs are found flowing out of the slopes above the ski area base facilities at the geologic contact between very old sedimentary rocks and young overlying volcanics.

Water quality data specifically for the streams at White Pass are not available. However, water quality for the streams emanating from the area is high. All surface waters issuing from National Forests are designated as Class AA (extraordinary) by the State of Washington Department of Ecology (WAC 173-201-070).

Two lakes in the study area could be impacted from activities at the White Pass Ski Area, Leech Lake and Knuppenburg Lake. Both lie downstream from and very near the ski area (Leech is within White Pass Company's northern permit area). Knuppenburg Lake is fed by Millridge Creek, whose source is in the existing and proposed expansion areas. Leech Lake is fed by intermittent streams with their sources on the slopes of the ski area.

## **WILDLIFE AND FISH**

Habitat in the study area ranges from thick coniferous forests to subalpine, with an array of riparian areas, natural openings such as meadows, and talus slopes. Wildlife communities are rich and diverse.

Individual wildlife species of concern are the threatened, endangered and sensitive species and the big game animals.

Two federally listed threatened species, the bald eagle and the northern spotted owl, and one federally listed endangered species, the peregrine falcon, have been sighted in nearby areas. Forest species being considered for federal listing are the Larch Mountain salamander, the Townsend's big-eared bat, the California wolverine, and the North American lynx. Species listed by Washington State as threatened or sensitive include the northern spotted owl, the Larch Mountain salamander and Townsend's big-eared bat.

The northern spotted owl was listed by the US Fish and Wildlife Service (FWS) as being in threatened status as of June 22, 1990. The Forest Service had prepared a Supplement to the Environmental Impact Statement for an amendment to the Pacific Northwest Regional Guide, which establishes specific direction for the management of northern spotted owl habitat areas

(SOHA) to provide viability for the owls. The Forest Service has coordinated designation of SOHA's on both sides of White Pass to allow movement of the birds through potential habitat there.

This project maintains spotted owl habitat to meet the Supplement. It will reduce approximately 100 acres of habitat within 2.5 miles of three pairs of spotted owls. The reduction will be lineal clearing for ski runs. This will fragment their habitat but the reduction in potential dispersion will likely not affect dispersion of owls between the Gifford Pinchot and the Wenatchee National Forests.

The Forest Service is in the process of completing additional surveys to verify occupancy of spotted owls. When the surveys are completed, there will be further consultation with the FWS. Project implementation will comply with the Endangered Species Act (PL 93-205).

Resident fisheries occur in Knuppenburg Lake and Leech Lake. Both are stocked fisheries maintained by the Department of Wildlife. Threats to these fisheries would be from pollution from sewage disposal and from sedimentation caused by accelerated surface erosion.

## VEGETATION

Three basic ecological settings exist in the proposed ski expansion area. The first is the steep, dense, timbered slope that parallels the highway west of the White Pass facilities. The second ecological setting is subalpine, with atolls of stunted subalpine fir, mountain hemlock, and openings of sedge, red mountain heath and huckleberry. This unique area has been characterized as open glades among clumps of stunted trees. The third ecological setting, along the upper Hogback Ridge, consists of a low shrub/forb layer of sedge, red mountain heath, grouse whortleberry and scattered clumps of Krumholz (stunted) subalpine fir and mountain hemlock and white-bark pine.

A plant survey by Dr. William W. Barker, Professor of Botany at Central Washington University, resulted in the following conclusion:

A thorough survey of the area proposed for the expansion of the White Pass Ski Area was conducted during June and July of 1987. No plants listed as endangered, threatened or sensitive in the June 1987 listing of such plants, published by the Washington Natural Heritage Program, were located in the course of the survey.

The only merchantable timber stands potentially involved in the study area are in the first ecological setting. These are the old, mature stands of Pacific silver fir and western hemlock. Stand data is limited but are estimated to be typically 18-22 inches in diameter at breast height, 100-240 years old (majority about 120) and an average net volume of 35 thousand board feet per acre.

## **SOCIAL AND ECONOMIC**

Many of the local population are descendants of original settlers in the area, people working in the timber industry, or people who have retired to the area. Another segment of the population are those who have recently acquired recreational property for second homes or cabins. Many people are attracted to the rural, low-key lifestyle and the year-round recreational opportunities.

In the past the economic base of the community was tied primarily to the timber industry and local mills. In recent years the service industry has become a more dominant economic influence. The importance of this industry should continue to increase in the future, making the local economy less dependent on the timber industry.

The service industry is geared toward the recreational needs of the part-time residents, as well as people travelling through the area. It typically involves restaurants, motels, gas stations, grocery stores, and specialty stores. The industry is relatively strong year-round, though a distinct low cycle does occur in the winter. April and May are the lowest time for recreational activities. The peak for the service industry is in the summer, traditionally in July and August.

Attitudes toward the growth of the service industry vary. Generally, the business people are in favor of the trend, and so are others who benefit from the increased services. However, many members of the traditional population are opposed to the shift.

## **VISUAL RESOURCES**

The current condition of visual resources has been modified by the existing development. This is especially evident on the existing, heavily-groomed lower slopes that are completely denuded of trees. The portions of the area that contain dense, unmodified timber stands have a low capability to absorb visual changes (Low Visual Absorption Capability). Any clearing or activity would be visible and an obvious change in the natural environment.

The main visual objective for design consideration is to protect and enhance the natural landscape while accommodating skiing and related activities. This can be done by blending constructed alterations into the natural, established landscape in a way that achieves harmony during all seasons of the year. Another objective is to emphasize the natural setting in order to introduce the public to the more rustic resource-based recreation opportunities.

## **WILDERNESS**

Two wildernesses are involved in the study area, The William O. Douglas Wilderness to the north of the highway and the Goat Rocks Wilderness south of the Ski Area. The majority of Wilderness impacts would be within the Miriam and Shoe Lake basins of the Goat Rocks Wilderness.

Shoe Lake presents the most intensely used and managed Wilderness lake on the Naches Ranger District. It is within the 1964 legislated Goat Rocks Wilderness but was managed before as a designated Wild Area. Interviews indicate that by the late 1940's Shoe Lake Basin was heavily impacted by recreationists. This condition persisted into the 1970's, contributed

to, no doubt, by increases in national popularity of backpacking, increased public interest in the Pacific Crest Trail, and increased access to the area from the White Pass highway.

Contributions to Goat Rocks use by riders of the chair lift is not specifically known. No doubt user patterns at Shoe Lake would be different without the easy access provided by the lift. The chair ride is a special experience in itself and contributes to a very desirable day hike with open views, easy grade and an attractive destination. To date, effects on Wilderness associated with operation of the chair lift have been manageable and within acceptable limits.

## **CULTURAL RESOURCES**

Two archaeological reconnaissance surveys by Jacqueline M. Cook and Guy F. Moura located no historic or archaeological sites in the area proposed for expansion. Their conclusions included:

No archaeological sites were located in the project area. This does not negate the possibility of their existence. It does indicate that if sites do occur they are indeed not in abundance.

It is reasonable to assume the project area was utilized in the normal course of the seasonal round cycle in both pre-historic and historic times. The area abounds with flora such as huckleberries and mosses, and fauna such as mountain goats, elk and deer. Also, McClure is asserting there is an obsidian source for tool production. At this point in time, there is no physical evidence in the project area to confirm usage.

The Yakima Indian Nation has expressed concern about the expansion of White Pass Ski Area into Hogback Basin. Tribal members have said that there are burial sites in the Hogback Basin and that the basin was a retreat area for Chief Kamiakin during the Yakima Indian War. They have also indicated in general terms that all of the mountains surrounding White Pass were used for burial grounds and there are bones and other evidence of historical occupation throughout the area. Further conversations indicated the Kamiakin Band probably used the general area from the Goat Rocks north, and may have used Hogback Basin.

## **RECREATION**

White Pass is a popular year-round recreation area. Recreation opportunities there vary due to setting, activity and experience opportunity, all of which differ from winter to summer.

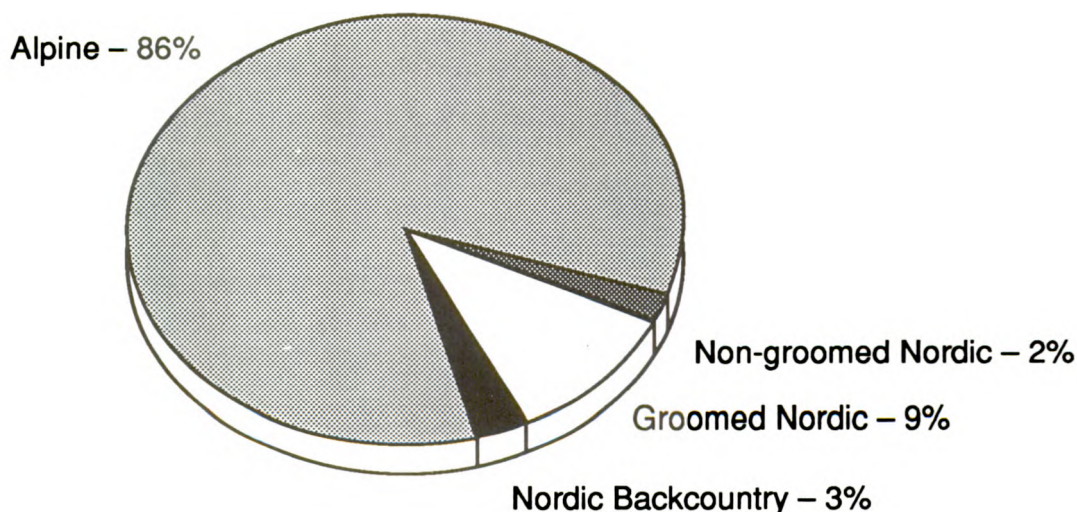
### **WINTER RECREATION**

A wide variety of skiers presently enjoy the White Pass area. This includes both alpine and nordic skiers and a full range of experience levels. Further, some are seeking special or unique settings.

Alpine skier attendance has increased very little at White Pass during the last 20 years, averaging about 100,000 per year. Approximately 80% of the total attendance occurs on weekends and holidays, with an average weekend day use of 1,524 skiers.

The White Pass Company administers approximately 15 Kilometers (9.3 miles) of groomed, double-tracked, nordic ski trails on the north side of the highway.

Skiing activities are summarized in the following figure.

**FIGURE S-1, SKI AREA USE BY SKIER TYPE**

### SUMMER RECREATION

The study area offers hiking, horseback riding, camping, boating, fishing, mountain biking, chairlift rides and general sight-seeing, photography and enjoyment of the outdoors in a mountainous setting.

Summer operation of the chair lift at White pass began in 1957 and has continued. The 45-minute ride offers users outstanding views of Mt. Rainier and adjacent Wilderness. Use averages about 4,000 people each summer.

### **UNIQUE SETTING OF HOGBACK BASIN**

Many people perceive Hogback Basin as important and unique. Its setting is examined for both winter and summer in three parts: physical, social and managerial.

The winter physical setting is a predominantly unmodified natural landscape of moderate size and unique visual diversity. The full 360-degree scene holds dramatic views of Mount Rainier, Mount Adams and Hogback Ridge and the Goat Rocks Wilderness. Hogback Ridge and Basin are a high alpine setting with rich diversity in open, natural meadows, glades, angular openings, and snow-covered trees. The area possesses a special combination of topography and accessibility. With its open and gentle terrain Hogback Basin contrasts distinctly with the surrounding forested areas.

From the social setting standpoint, the area offers an opportunity to get away from crowds of skiers, both alpine and nordic, and other users. Interaction with other skiers may be low, and though there may be evidence of other skiers (e.g., tracks), the opportunity to experience untracked snow in an alpine environment is there. Relatively easy access to the basin using the

present ski lifts make it socially more usable than if the White Pass Ski Area were not present. Spring skiing is characterized by deep, long-lasting snow with plenty of sunshine.

From the managerial standpoint, in this setting users have relatively little feeling of controls and restrictions.

Hogback Basin's winter setting offers a high probability of experiencing isolation from the sights and sounds of others, independence, closeness to nature, tranquility, and self-reliance on one's own winter survival and nordic skiing skills. Though this semi-primitive experience, in a high-elevation setting with a panoramic view of mountain peaks and Wilderness, is somewhat moderated by its accessibility from chairlifts, this ease of access is part of the area's uniqueness. This situation is found in very few other places.

The opportunity to get away from the sights and sounds of humans may be even greater during the summer. The setting is similar to winter, and the meadows are full of a lush variety of low-growing vegetation contrasted against groupings of sub-alpine fir. Distant clear cuts are not as dominant as when filled with snow during the winter. However, while magnificent and beautiful, the summer setting is not considered "unique," as it is matched in other nearby alpine locations.

## **ENVIRONMENTAL CONSEQUENCES – CHAPTER IV**

Implementation of any of the alternatives results in some physical and biological effects. This section focuses on areas or resources where impacts are actually expected. For a complete discussion of environmental effects see Chapter IV of the FEIS. These anticipated effects will still occur after mitigation measures have been applied. It is felt the impacts are within acceptable limits.

### **SOILS**

Acceleration of the natural rate of soil erosion would occur as a result of all alternatives except 1 and 2. Cut and fill slopes from the construction of roads is the biggest contributor to increased erosion.

Soil displacement and delivered sediment (soil that reaches local streams) estimates by alternative are displayed in figure IV-1.

### **WATER**

The alternatives would not adversely impact the long-term water quality of the Study Area. Some short-term impacts could occur during construction of the roads, lift lines, towers and ski runs. There is also the potential with all development alternatives for fuel spills during construction.

Consumptive water use at White Pass would increase as use of the area increases (about 6.3 gallons/day/person). Downstream water use would not be affected as a result of any alternative.

Cumulative effects to the watersheds would be very minor. There might be a small minor incremental effect on the Cowlitz drainage, but one insignificant compared to the logging,

agricultural and development impacts downstream. The same would be true for the Tieton River drainage.

There would be no adverse effects on flood plains or wetlands. No activities are proposed in these areas or in areas that would impact them.

## **WILDLIFE AND FISH**

The project proposal has no direct impact on winter habitat needs for the wildlife species discussed. Deer and elk winter range would be affected indirectly by development pressure in eastern Lewis County, though it is not considered significant. Minor impacts could occur on summer habitat for all species because of the introduction of a hiking trail and additional people. However, these impacts are thought to be not significant.

There is little relative change in impacts by alternatives, except those involving the construction and development of Chair Lift 7, which results in minor impacts to species dependent on mature forest settings. Development of Chair 7 would have beneficial impacts to deer and elk populations exploiting the grass/forbs vegetative stage.

Potential and occasional use of the area by threatened and endangered species is most likely to occur in the late summer or early fall and would primarily involve foraging or travelling activities. The presence of additional people in the summer might make this utilization less frequent. However, these threatened and endangered species would not be adversely impacted by the proposed development.

The phased-in nature of the proposal would tend to lessen disruption from construction activities, giving species time to acclimate themselves, rather than face major changes all at one time.

## **VEGETATION**

Implementing the various alternatives would impact the three identified plant communities:  
Heavily Timbered Slopes of Old-Growth Trees

Alternatives 3, 6 and 7, which include construction of Chair Lift 7, would have the greatest impact. After cutting the ski runs the potential of windthrow to the timber edges would be real. The runs would need to be kept at right angles to the saddle in the pass, and the openings kept as narrow as possible. Opening these runs would spill a great quantity of cold air from the upper basin down the treeless slopes. The result would be an increase in the plants that compete better in a cold environment, such as beargrass and Cascade huckleberry. The dwarf bramble, rusty menziesia and Alaska huckleberry would most likely be eliminated from these openings.

Subalpine Setting (Hogback Basin)

The consequences of implementing an alternative for development in Hogback Basin (3,4, 5, 6 or 7) have mainly to do with the acreage of snow groomed and the significance of ground disturbance. Snow grooming would hold snow longer in the spring, thus shortening the growing season for the low-lying vegetation. Cascade huckleberry, red mountain-heath, smooth woodrush, and sedge would begin to successfully dominate the open glades. Big huckleberry would slowly lose its competitive edge. Ground disturbance would create an

environment where revegetation would be slow due to the fragility of this area's ecosystem. Sedge would be the first to respond in revegetated disturbed places.

#### Alpine Setting (Hogback Ridge)

This is a setting of low shrubs and forbs where impacts would be similar to those in the subalpine setting but would be even more long-term. Revegetation would be extremely slow and difficult.

### **SOCIAL AND ECONOMIC**

Change toward a service-industry-oriented community is already occurring in local communities. This has resulted in rising land values and changes in overall lifestyle.

Implementation of an expansion alternative would contribute to these changes. Some residents would view this as positive, some as negative. Overall, the community seems to favor (or is indifferent to) such change as no formal opposition has arisen.

Increasing winter service activities would contribute to economic stability by eliminating the relatively cyclic economic situation and creating a balanced business climate.

The level of impact would vary by alternative. This along with all the other variables makes the magnitude of impact difficult at best to measure. Phasing in ski area expansion would spread most impacts out over time. Tools are available for local governments to foresee these changes, and to avoid or mitigate negative impacts such as the costs of additional public services.

Expansion of the Ski Area would make the area more marketable during all seasons. This would even out summer and winter demands on services. If summer demand continues its current growth alone, the service industry might grow anyway to meet this need, and incidentally be able to meet an increased winter need. In either case, the cumulative effect could be a full-season community, with a changed lifestyle, dependent on the service industry.

### **VISUAL RESOURCES**

About 315 acres of forest cover have been cleared for the existing development. an additional 100 acres of old-growth forest could be cleared with this proposal.

Alternatives that include construction of Chair Lift 7 (3, 6 and 7) would have the greatest impact on visual resources. This area is primarily within the foreground of U.S. 12 and has a Visual Quality Objective of Retention. It also has a Low Visual Absorption Capability.

Clearing for the lift line, ski runs and access road for Chair Lift 7 would add lines and alter colors in the characteristic landscape of uniform, dense, mature timber. These changes cannot be fully mitigated. To the extent possible, however, impacts would be reduced by feathering the edges of the clearings and by painting structures and hardware colors that blend with the landscape. Landscape architect's skills would be utilized when designing clearings.

The visual impact of activities taking place in Hogback Basin are only significant as viewed from sections of the PCT. There would be very little clearing needed for ski runs in the Basin due to the natural openness that presently exists. The most significant vegetation disturbance would take place with the construction of the catchline road and the service road to the mid-mountain warming hut. These clearings would be viewed downhill by trail users and, due to



the oblique angle of the view and the distance, would be mostly screened by existing foreground vegetation. The lift towers, cables and the presence of skiers would be the most significant visual impacts within Hogback Basin. These impacts cannot be fully mitigated.

Due to the distance and the angle as viewed from the William O. Douglas Wilderness, activities in the Hogback Basin would be unobtrusive to the Wilderness visitor.

## **WILDERNESS**

Alternatives would affect Wilderness to varying degrees depending on several factors. Actions which affect adjacent Wilderness are those which increase use beyond normal levels, physically impact facilities, result in changes to the natural environment, or decrease the public's opportunity for pristine types of recreation, unique scenery or scientific, historic or educational experiences.

The summary, by alternatives of Wilderness impacts to the Miriam and Shoe Lake basins of the Goat Rocks Wilderness, is included in Chapter IV, pages 425–427.

## **CULTURAL RESOURCES**

The environmental consequences of any of the alternatives on the cultural and spiritual aspects involved in the proposed development area, become a philosophical issue. The cultural surveys conducted by a professional archaeologist under contract to the White Pass Company failed to discover any site-specific evidence of Native American use of the area. These surveys and record searches were reviewed by professional Forest Service Archaeologists and were found to be accurate and thorough.

Members of the Cultural Committee of the Yakima Indian Nation indicated their main concern was that any development from Rimrock Reservoir to White Pass would adversely effect the area's cultural and spiritual meaning and its naturalness, and would tend to bring more use to the area. This use will continue to grow with or without additional development and will tend to cause additional impact on the boundaries of the Yakima Indian Reservation. They have said that there are burial sites in the Hogback Basin and that the Basin was a retreat area for Chief Kamiakin during the Yakima Indian War. They also indicated in general terms that all of the mountains surrounding White Pass were used for burial grounds and there are bones and other evidence of historical occupation throughout the area.

Analysis indicates that Alternative 7 would potentially have the most effect on the cultural and spiritual aspects of the area while the other alternatives would have less. Specific archaeological evidence was not found between the writing of the DEIS and the FEIS.

## **RECREATION**

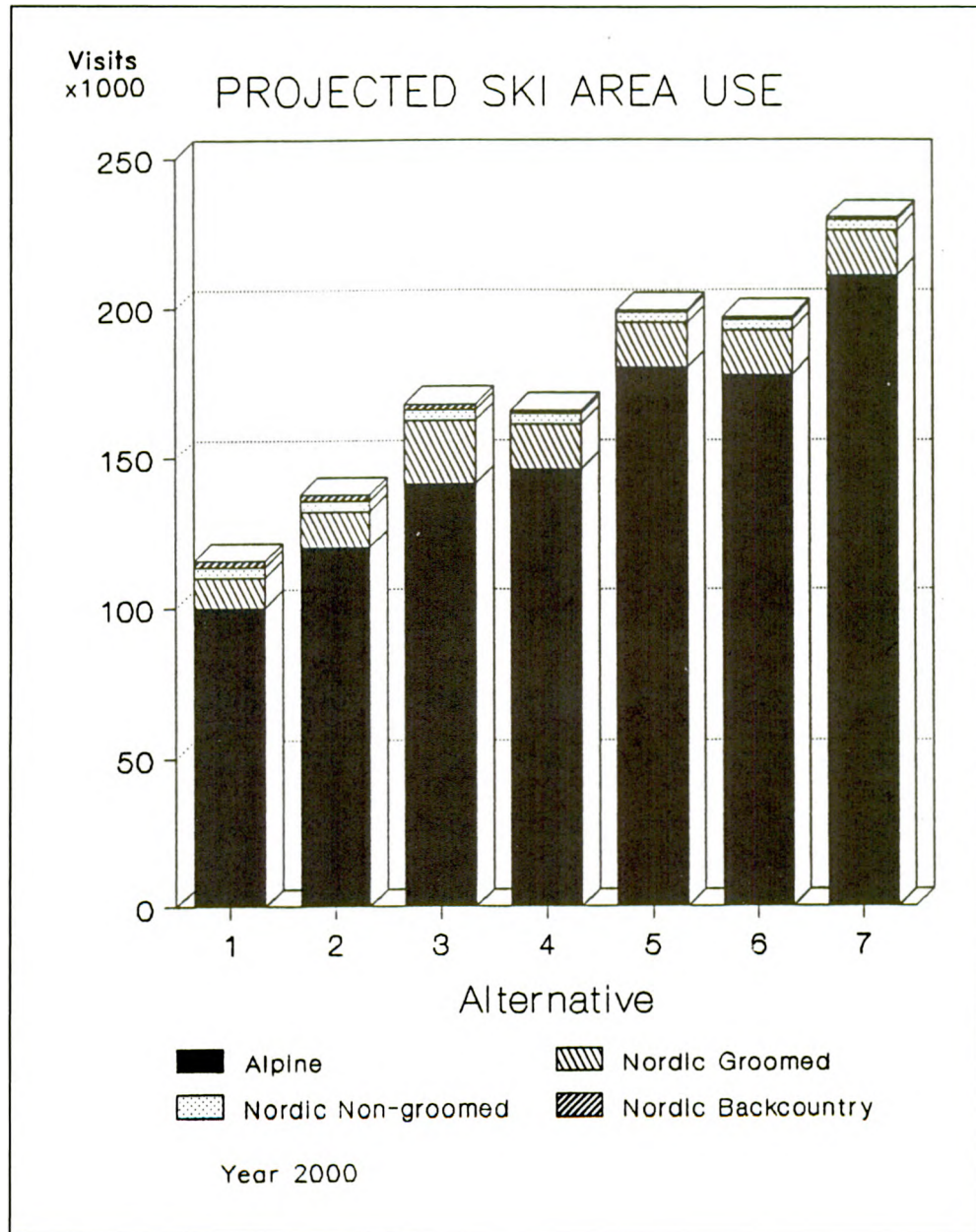
Projected winter recreation used by type of skier for each alternative is summarized in Figure S-2, next page.

Alternative 1 would continue the current situation for summer recreation. Alternatives 2 through 7 would enhance summer recreation opportunities outside Wilderness. A loop trail system would be constructed in Hogback Basin and the interpretive program would be

expanded. Only Chair Lifts 1 and 2 would operate in the summer. This would offer a day-use hiker destination outside Wilderness which would relieve some pressure on Shoe Lake.

No additions to Forest Service facilities at Leech or Knuppenburg lakes are proposed with any alternative. The White Pass Company summer program at the base area and on the nordic trails would continue with all alternatives.

FIGURE S-2



## **TRANSPORTATION - HIGHWAY**

With full development the design capacity of Highway 12 would be exceeded during peak use periods. This would result in traffic congestion and delays. However, the WDOT indicated that, since this is primarily a recreation highway, these delays are acceptable.

## **BASE AREA AND SUPPORT FACILITIES**

Base and support facilities would be updated as required and expanded as needed to remain in balance with increased use. These changes are reflected in the characteristics of each alternative, Tables II-1 through II-7.

## **PUBLIC SAFETY**

As areas are added and developed and as skier use increases, the ski patrol would also expand to meet the increased need. These activities include treatment of accidents, avalanche control, search and rescue, and public information on skier courtesy. This is included in the operating plans and costs for White Pass Company.

Management of the ski area boundary becomes more important should expansion occur in Hogback Basin. Specifically, the boundary between the top of proposed lifts 5 and 6 and the Miriam Creek Basin would require being roped, signed and having entry points. The "White Pass Ski Area Boundary Management Guidelines" (Appendix F) would be implemented with approval of any of the expansion alternatives. These guidelines would reduce exposure of skiers to avalanche hazard adjacent to the ski area, reduce the possibility of skiers inadvertently leaving the area and becoming lost, and yet allow a reasonable degree of opportunity for a backcountry skiing experience.

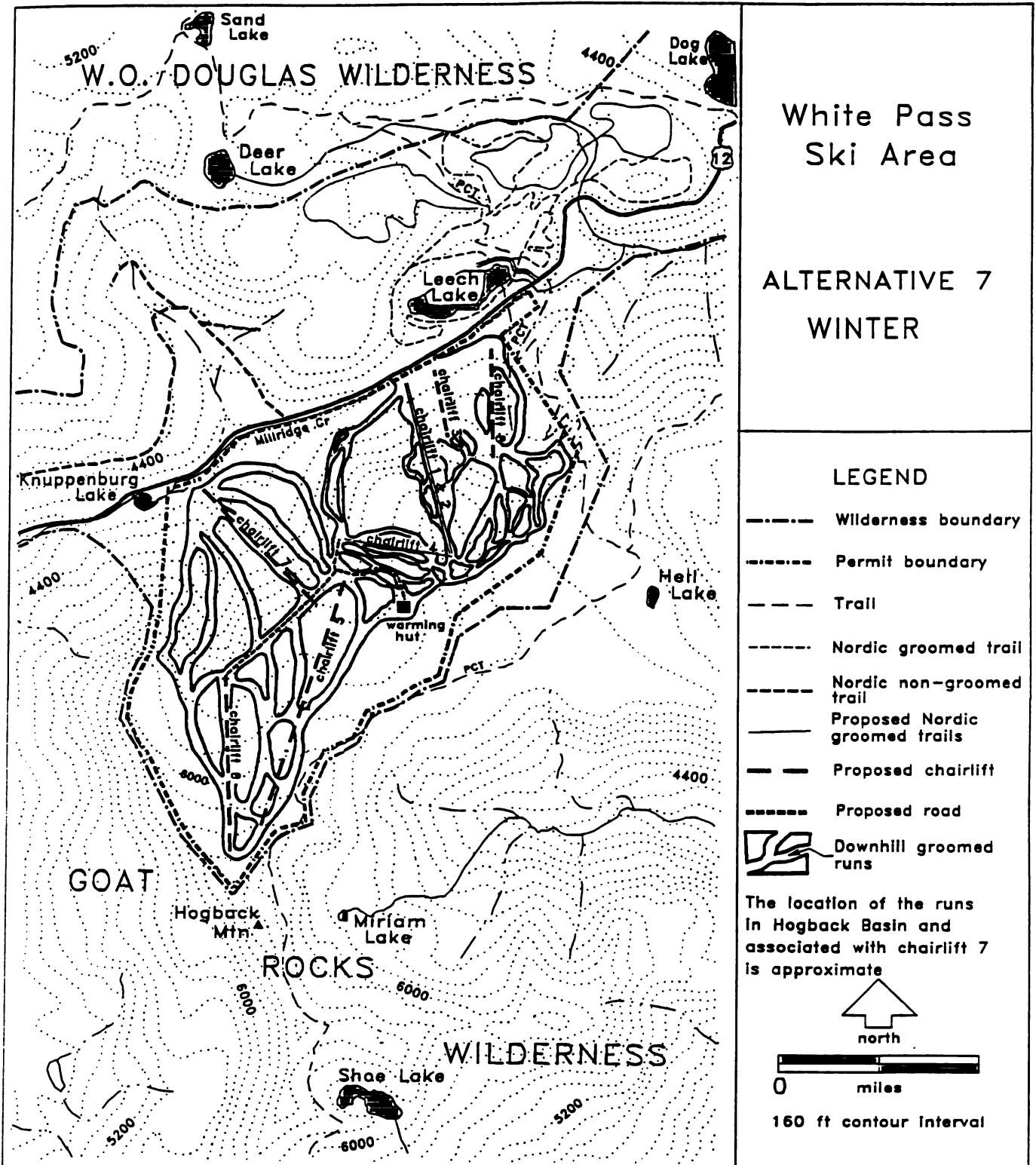
## **COMPARISON OF EFFECTS OF ALTERNATIVES**

Comparison Criteria were developed to evaluate the effects of each alternative on the major issues concerns and opportunities identified during the scoping process. The environmental consequences of these Criteria are presented in Chapter IV and summarized in Table S-1, Summary of Comparison Criteria.

TABLE S-1, COMPARISON CRITERIA SUMMARY

Criterion	ALTERNATIVES						
	1	2	3	4	5	6	7
<b>1. Recreation Opportunities</b>							
Alpine Skier Capacity (skiers/day).....	2500..	2500..	3100..	3250..	3900..	3850..	4500
Nordic Groomed Trails (km.) .....	15.....	20.....	30.....	25.....	25.....	20.....	25
Trail system - Hogback Basin .....	No....	Yes....	Yes....	Yes....	Yes....	Yes....	Yes
<b>2. Unique Setting - Hogback Basin</b>							
Acres – Nordic.....	660....	660....	660....	300....	235....	300....	235
Acres – Alpine .....	0.....	0.....	0.....	360....	425....	360....	425
<b>3. Physical and Biological Effects</b>							
Soil Displacement (tons/year).....	226.5..	226.5..	240.7..	256.5..	275.3..	266.2..	285.0
Delivered Sediment (tons/year) .....	11.3...11.3...	11.3...11.3...	12.0...12.0...	12.8...12.8...	13.8...13.8...	13.3...13.3...	14.3
<b>Vegetative Clearing (acres)</b>							
Heavy Stands.....	315....	323....	383....	333....	333....	420....	420
Open stands.....	0.....	0.....	5.....	75....	160....	95....	160
<b>4. Wilderness Effects</b>							
<b>Social/Physical Impacts and User Solitude</b>							
Winter	Base	Slight Increase	Slight Increase	Increase	Increase	Increase	Increase
Summer	Base	Decrease	Decrease	Decrease	Decrease	Decrease	Decrease
Impacts on Views	None	None	Min.	Some	Some	Some	Some
<b>5. Displacement of Backcountry Skiers (acres available)</b>							
Hogback Basin .....	660....	660....	300....	300....	235....	300....	235
In Study Area .....	2500..	2500..	2140..	2140..	2075..	2140..	2075


FIGURE S-3



White Pass  
Ski Area

ALTERNATIVE 7  
WINTER

LEGEND

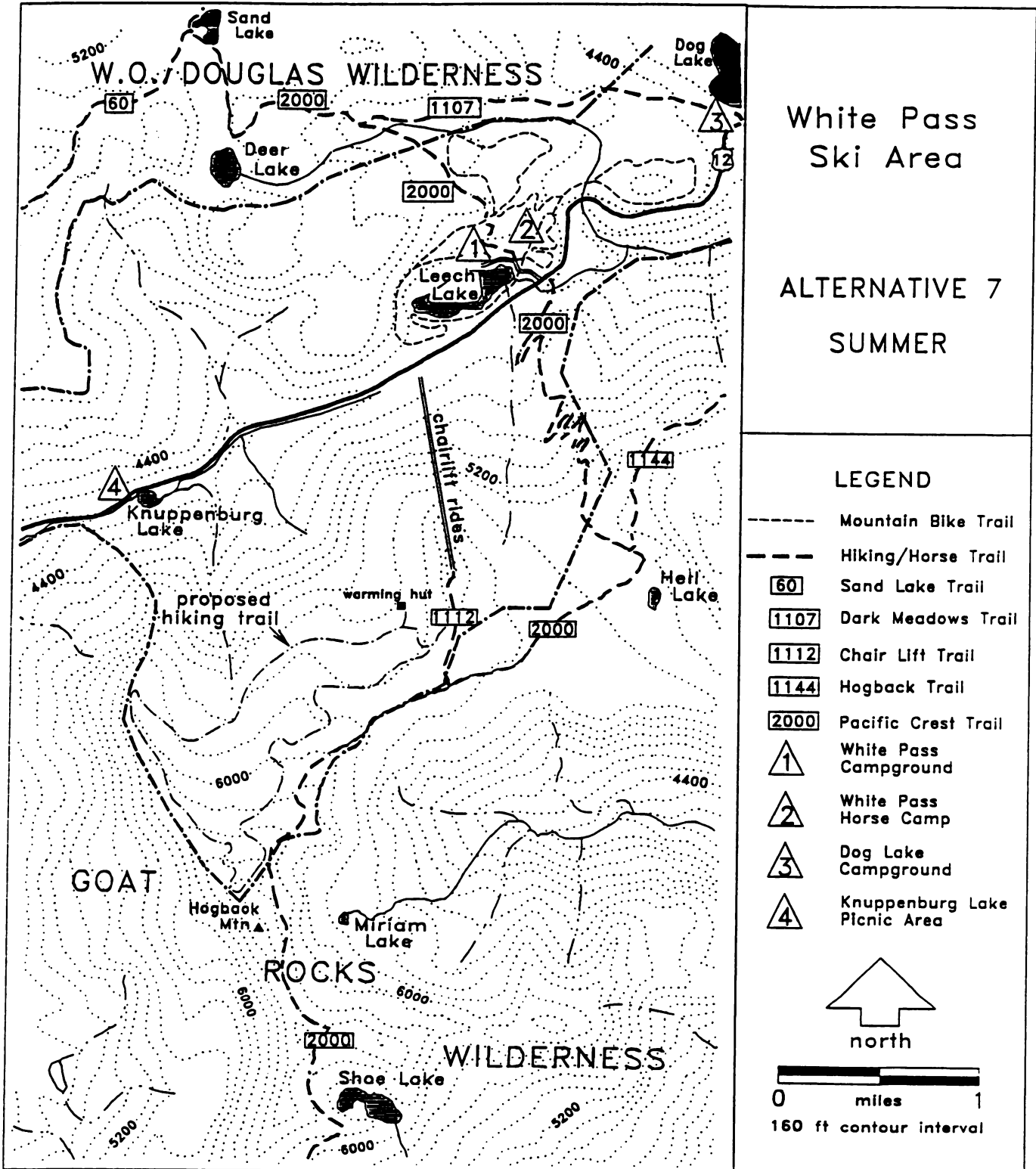
- Wilderness boundary
- - - - - Permit boundary
- - - - - Trail
- - - - - Nordic groomed trail
- - - - - Nordic non-groomed trail
- Proposed Nordic groomed trails
- - - - Proposed chairlift
- Proposed road
-  Downhill groomed runs

The location of the runs in Hogback Basin and associated with chairlift 7 is approximate



160 ft contour interval

FIGURE S-4

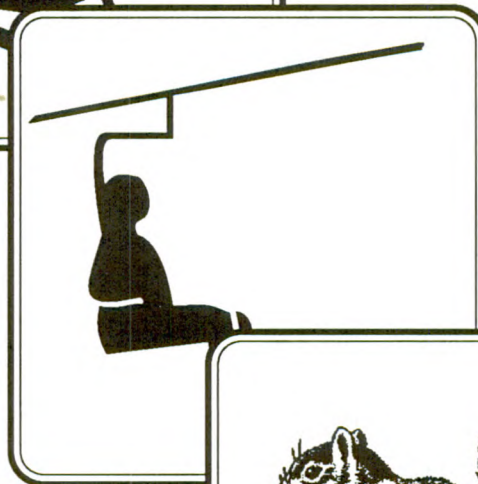
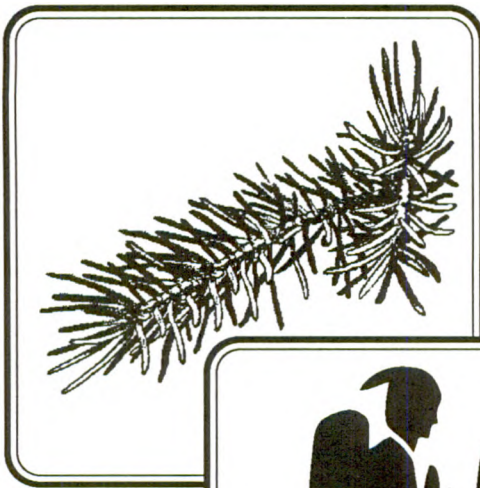




# CHAPTER I

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## PURPOSE AND NEED



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## CHAPTER I

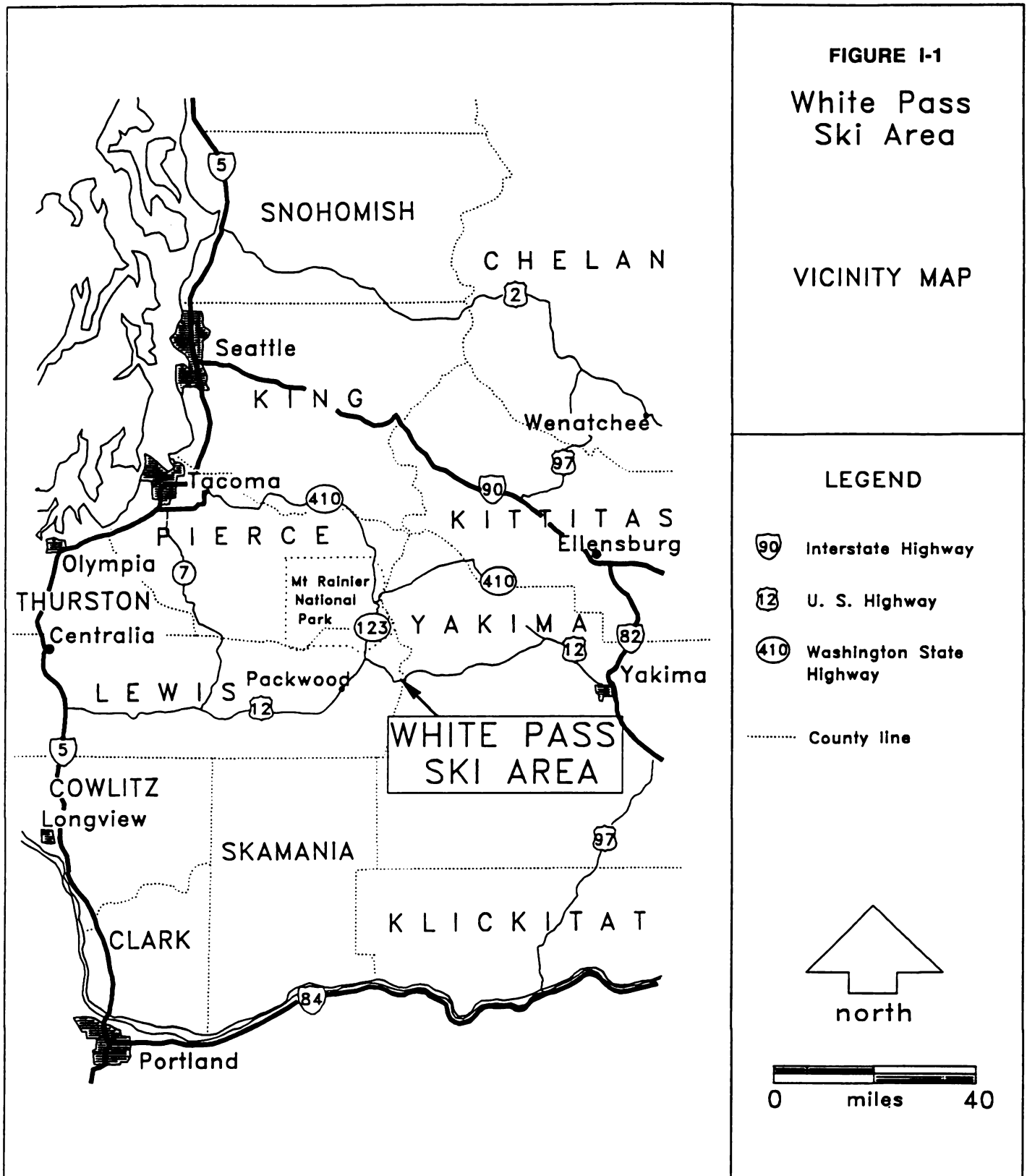
### PURPOSE AND NEED FOR ACTION

This Final Environmental Impact Statement (FEIS) is prepared to analyze skiing expansion at the White Pass Ski Area. White Pass Company, Inc., has made an application to add four chair lifts, to increase the present area by about 1,100 acres, to add a warming hut part way up Hogback Mountain, and to increase the comfortable capacity of the ski slopes from 2,500 skiers per day to 4,500. Two of the proposed chair lifts would be in Hogback Basin, an area that was withdrawn from the Goat Rocks Wilderness in 1984 because of its potential for ski development.

Both alpine and nordic skiing are considered in this FEIS. Growth in skiers at Washington State areas has not kept pace with other sections of North America. The White Pass share of its skiing market area (populations within two hours travel of White Pass) has remained constant. Population within the market area, south Puget Sound area and the Yakima Valley, is projected to continue to increase, and with it, increase in skier participation is anticipated. White Pass Company desires to become more competitive within this market area while continuing to provide a family-oriented ski area; to regain a greater share of skiers in its market area; to serve anticipated skier increases; and, to lure back a share of the Washington State skiers who are going out of state to ski.

Nordic skiing in the market area is on an upward trend, with the greatest increases in groomed-track skiing. White Pass proposes to increase the amount of groomed track from 15 km to 25 km. Backcountry nordic skiers now use the Hogback Basin and are concerned about being displaced by the proposed development. Local communities, especially Packwood and Randle, are increasingly dependent on tourism and are very interested in the White Pass development.

The FEIS will lead to a Record of Decision (ROD) where the Deciding Officer will select an alternative which will provide the most desirable combination of physical, biological, social and economic benefits to the public. The alternatives range from no action to the company's proposed alternative. The purpose of the FEIS is to present the information required to evaluate the potential effects of the proposed expansion of skiing and other recreation opportunities at White Pass; to assist in making a decision on whether to amend the White Pass Company, Inc.'s Special Use Permit to include additional area; to establish the conditions of such an amendment; and, to provide a framework to carry out the decision.



The FEIS meets the disclosure requirements of the National Environmental Policy Act (NEPA) and does not violate any state or local laws imposed for the protection of the environment. It is tiered to the FEIS for the Wenatchee National Forest Land and Resource Management Plan (implemented April 8, 1990) and the DEIS for the Gifford Pinchot National Forest Land and Resource Management Plan. The preferred alternative is consistent with these management plans.

## **BACKGROUND**

### **LOCATION**

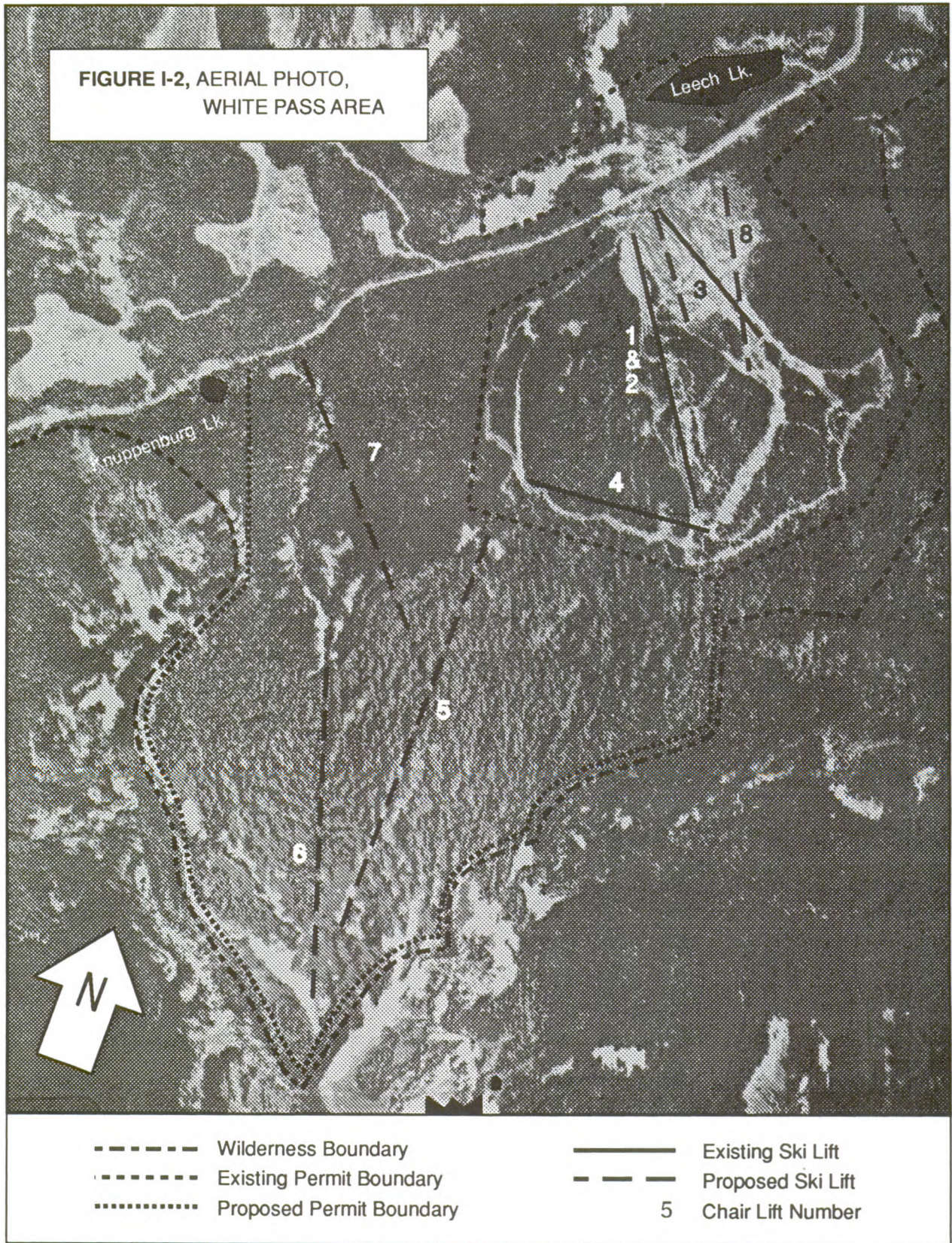
White Pass is a year-round sports area at the crest of the Cascade Mountains in south-central Washington State [See Figures I-1 and I-6] within the boundaries of the Wenatchee and Gifford Pinchot National Forests. Winter activities include alpine, or downhill, skiing at the White Pass Ski Area and nordic, or cross-country, skiing, on both groomed trails and in backcountry settings. Summer activities include hiking, horse-back riding, camping, fishing and enjoying the scenery. Two Wildernesses, the Goat Rocks and the William O. Douglas, are accessible from White Pass and the Pacific Crest National Scenic Trail passes through the area. Recreation facilities managed by the U.S. Forest Service near the pass include White Pass Campground, Knuppenburg Lake Picnic Area, a Pacific Crest Trail trailhead and the White Pass Horse Camp.

U.S. Highway 12 conveniently connects the area to population centers east and west. Yakima is 54 miles eastward; Seattle and Tacoma are 90–100 miles to the west. Packwood and Randle are about 20 and 35 miles, respectively, to the west; the southern Puget Sound region is within a two-hour drive.

The White Pass Ski Area is on both sides of Highway 12 at the summit of White Pass (elevation 4,500 feet) at the crest of the Cascade Mountains in Yakima and Lewis Counties. The developed Ski Area is south of the highway. White Pass Village Inn with 55 condominium units, restaurant, grocery store, post office and service station, lies on the north side. Also on the north side is a loop system of groomed nordic ski trails. White Pass Company, Inc. operates these facilities under a Special Use Permit administered by the Wenatchee National Forest. [See Figure I-2, Aerial Photo, and Figure I-3, Special Use Permit Area.]

The proposed expansion area lies to the south and west of the developed alpine Ski Area. It is an unmodified natural alpine area presently used by hikers and backpackers in the summer and by nordic skiers, snowshoers, winter campers and, occasionally, alpine skiers in the winter. The Pacific Crest Trail is on the southeastern edge of the expansion area.

White Pass primarily serves family groups and day skiers. About 1/3 of the day skiers come from east of the Cascades and 2/3 from west of the mountains, mainly from the southern Puget Sound area.



According to a survey conducted by the White Pass Company during the 1988–89 ski season, 25 to 35 percent of the skiers stay one or more nights at the condominiums, in private cabins in the vicinity of Packwood, Rimrock Reservoir and Trout Lodge, or in motels in Yakima and in the Randle/Packwood areas.

## **DEVELOPMENT HISTORY**

Development of the White Pass area for winter sports was first discussed in the Snoqualmie National Forest Report, "Recreation Plan, Randle-Yakima Highway Unit, Tieton-Clear Lake Section," in 1948. The highway was completed in 1950 and in 1953 the White Pass Winter Sports Area was under development by the Yakima Valley Ski Club. White Pass Company began operation in 1955. Their objective was to provide a family-oriented ski area that would serve Yakima Valley families, as well as a segment of the west side skiing community. The Ski Area continues to emphasize service to family-oriented skiers and therefore attempts to provide a large amount of novice and intermediate terrain.

Initial facilities involved rope tows, a platter lift, and a day lodge. Chair Lift 1 to the top of Pigtail Peak, elevation 6,000 feet, was added in 1956. Successful summer operations started in 1957. Since then White Pass Company has mainly concentrated on slope grooming and improved facilities to enhance user satisfaction. Chair Lift 2 was added parallel to the first chair lift in 1958, Chair Lift 3 added in the lower base area in 1964, and Chair Lift 4 built in 1984. The day lodge burned in November, 1959, and had to be rebuilt. It was expanded and remodeled in 1988 and extensive work has been done on the sewer system. [See Figure I-4, Base Area Facilities, and Figure I-5, Existing Runs.]

Interest in cross-country skiing at White Pass began in the late 1970's. This use has continued to the present time. In 1979 groomed trails were developed on the north side of Highway 12, and are operated by White Pass Company. Backcountry nordic skiing is becoming increasingly popular in Hogback Basin and the other basins to the south. Chair Lifts 1 and 2 have made access to these areas easier for the skiers.

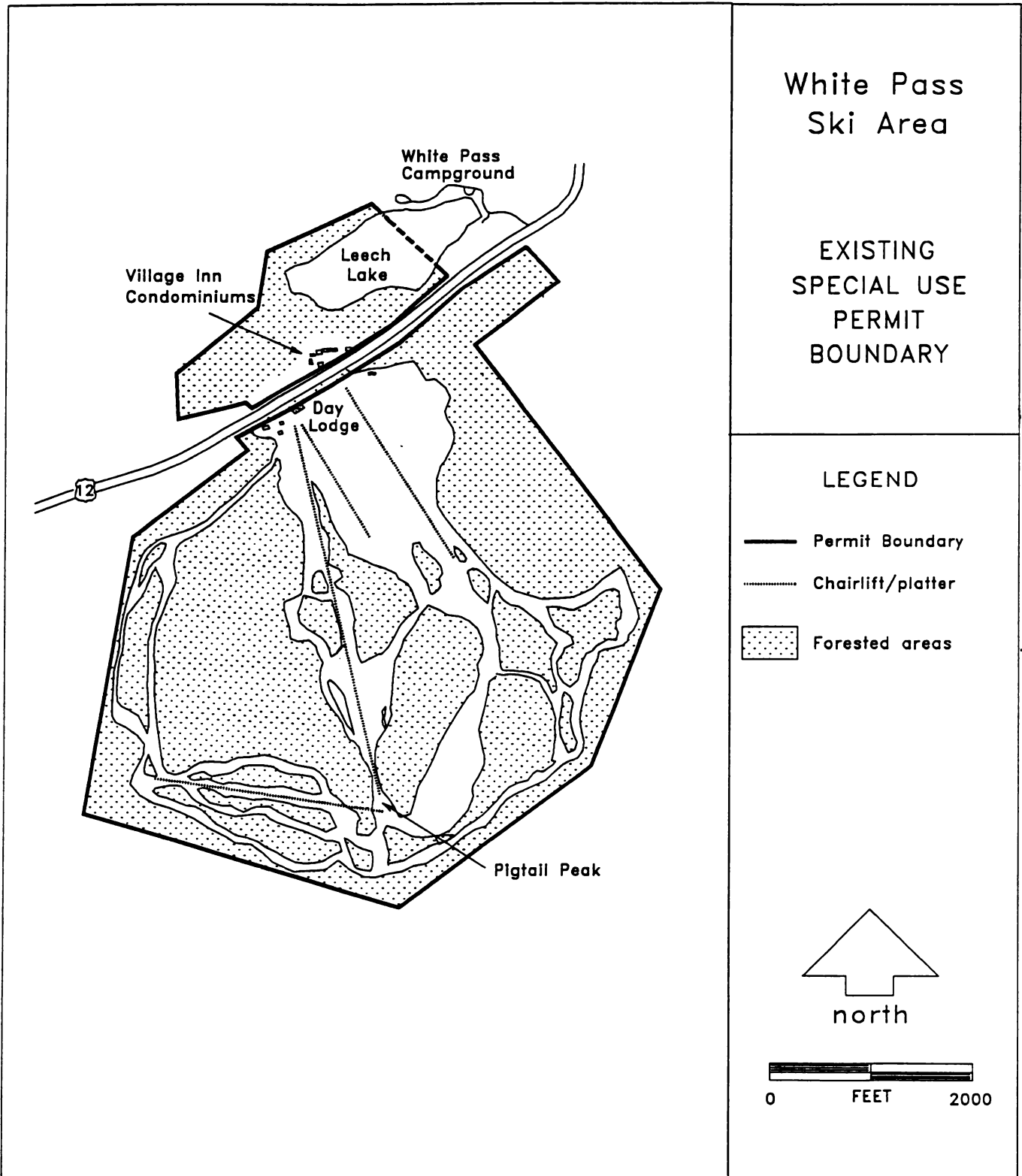
## **PLANNING FOR EXPANSION**

The White Pass Company began planning for expansion in 1961, before passage of the Wilderness Act of 1964, and in 1966 made a request to expand into Hogback Basin. The company recognized that the majority of the terrain in Hogback Basin was novice to intermediate. This type of terrain was desirable because it was what was needed to serve the family-oriented alpine skiers who have historically skied at White Pass. A major planning effort was initiated in 1978, with the Master Plan being completed in May, 1979. The company also recognized the need for additional expert terrain and included the Knuppenburg Lake slopes and Miriam Basin in the Plan. [See Figure I-6, Study Area.]

The Forest Service approves the Site Development Plan that follows the Master Plan. The Forest Service conceptually agreed to part of the White Pass Master Plan, but areas that were within Wilderness were not agreed to because of the 1964 Act, which precluded development.

Following the Master Plan, White Pass Company and others began to work for modification of the Wilderness boundary, requested removal of 2,400 acres from Wilderness, including both Hogback and Miriam Basins. In 1984 with the Washington Wilderness Act Congress did modify the Goat Rocks Wilderness boundaries, including removing the 800 acres of Hogback Basin from Wilderness. That portion of the White Pass Company's Master Plan then became available for study. In 1985, White Pass Company received a permit from the Forest Service to study 1,300 acres for possible expansion, the 800-acre Hogback Basin area and 500 acres already outside the Wilderness, down to Knuppenburg Lake. (Study permits are not issued for Wilderness. Wilderness classification or boundary adjustments can be made only by an Act of Congress.)

FIGURE I-3





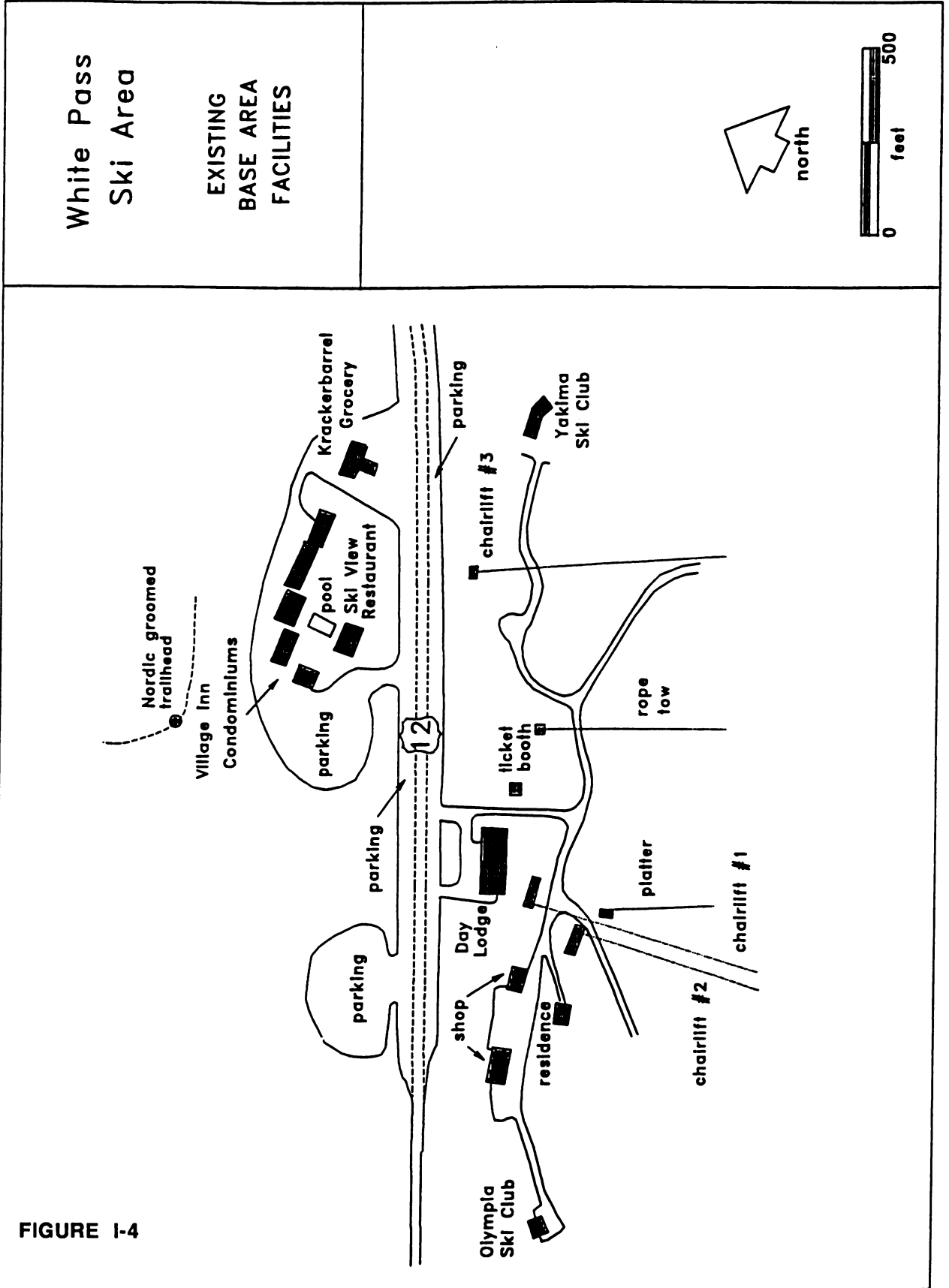


FIGURE I-4

FIGURE I-5

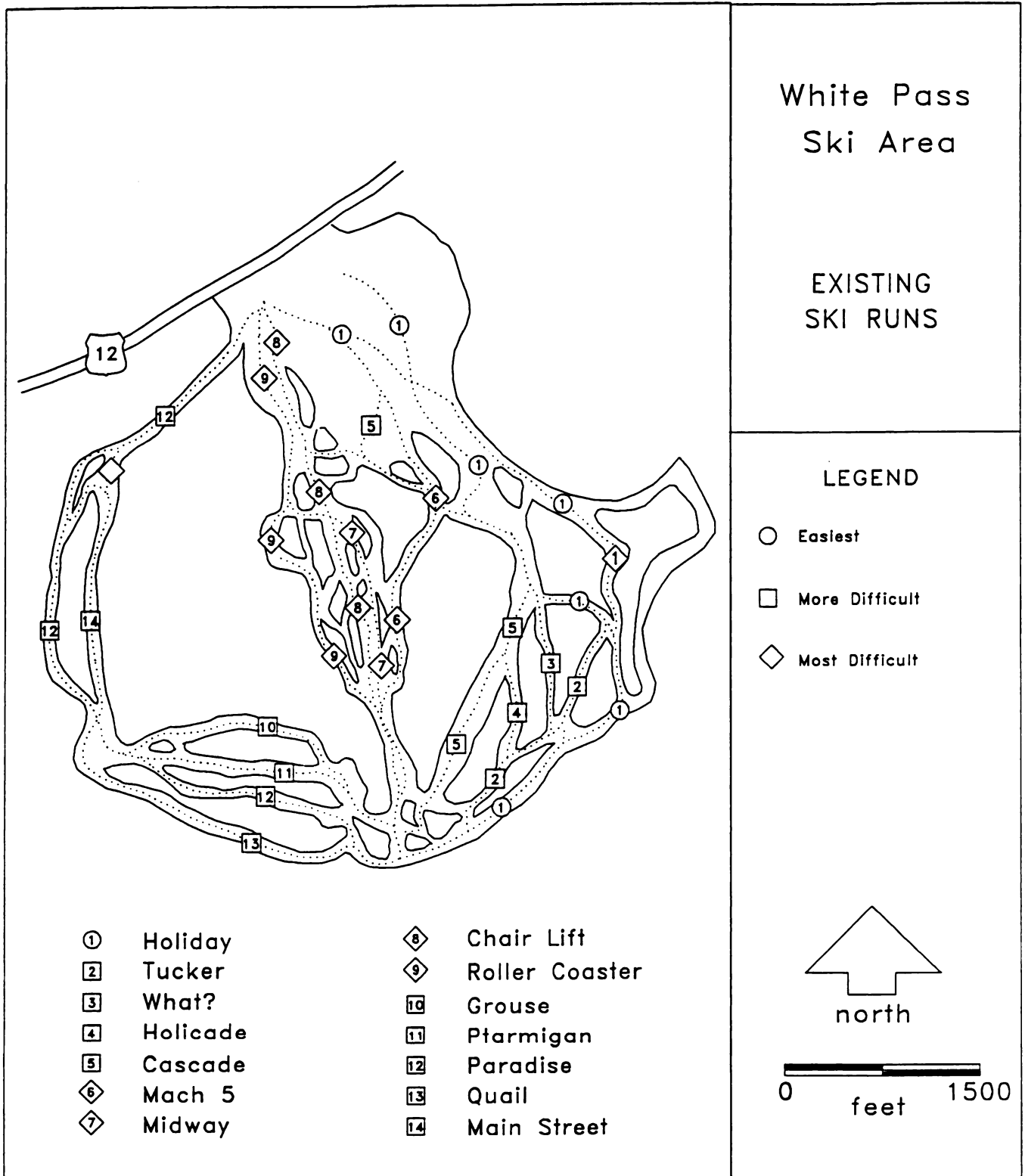


FIGURE I-6

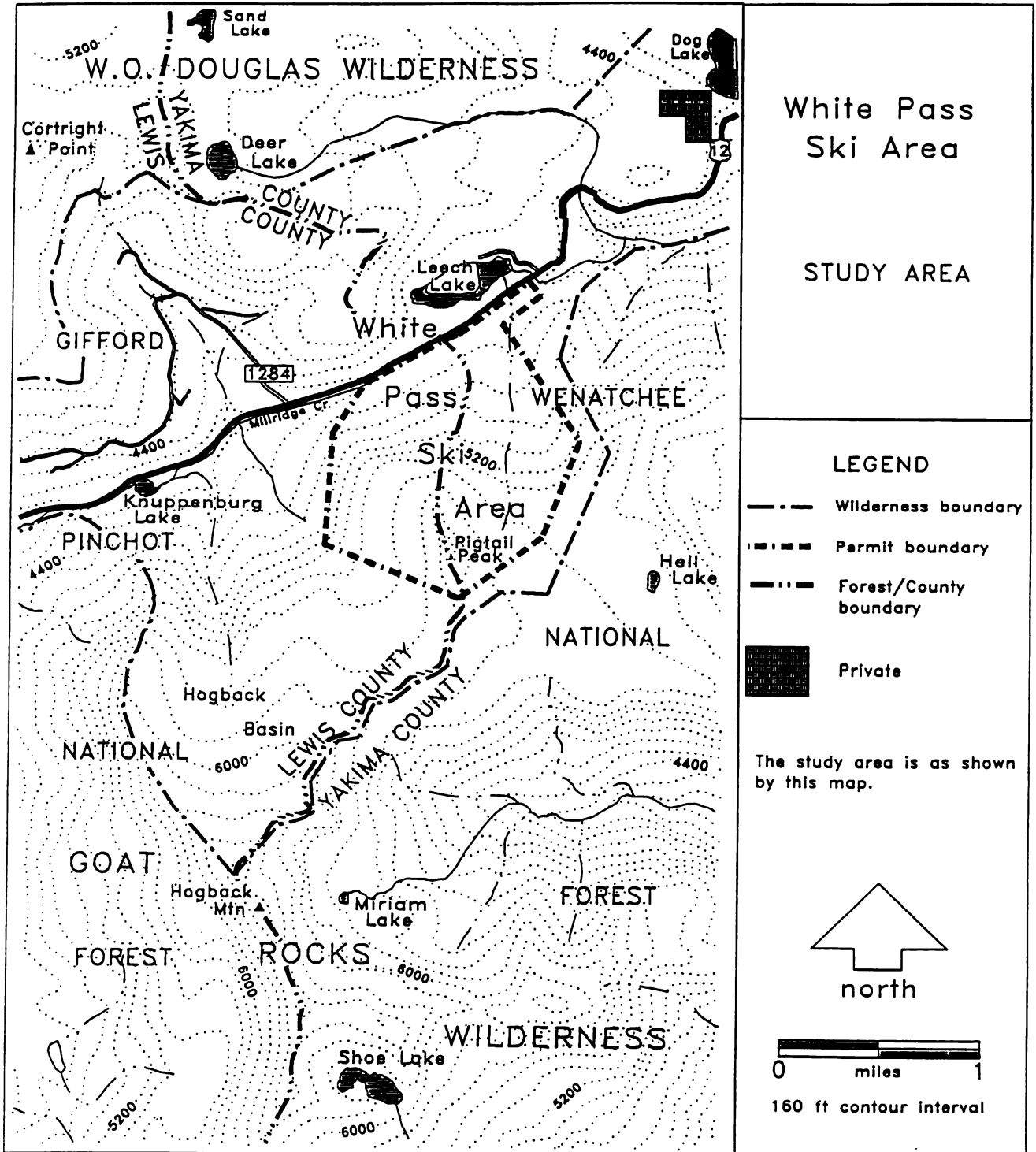
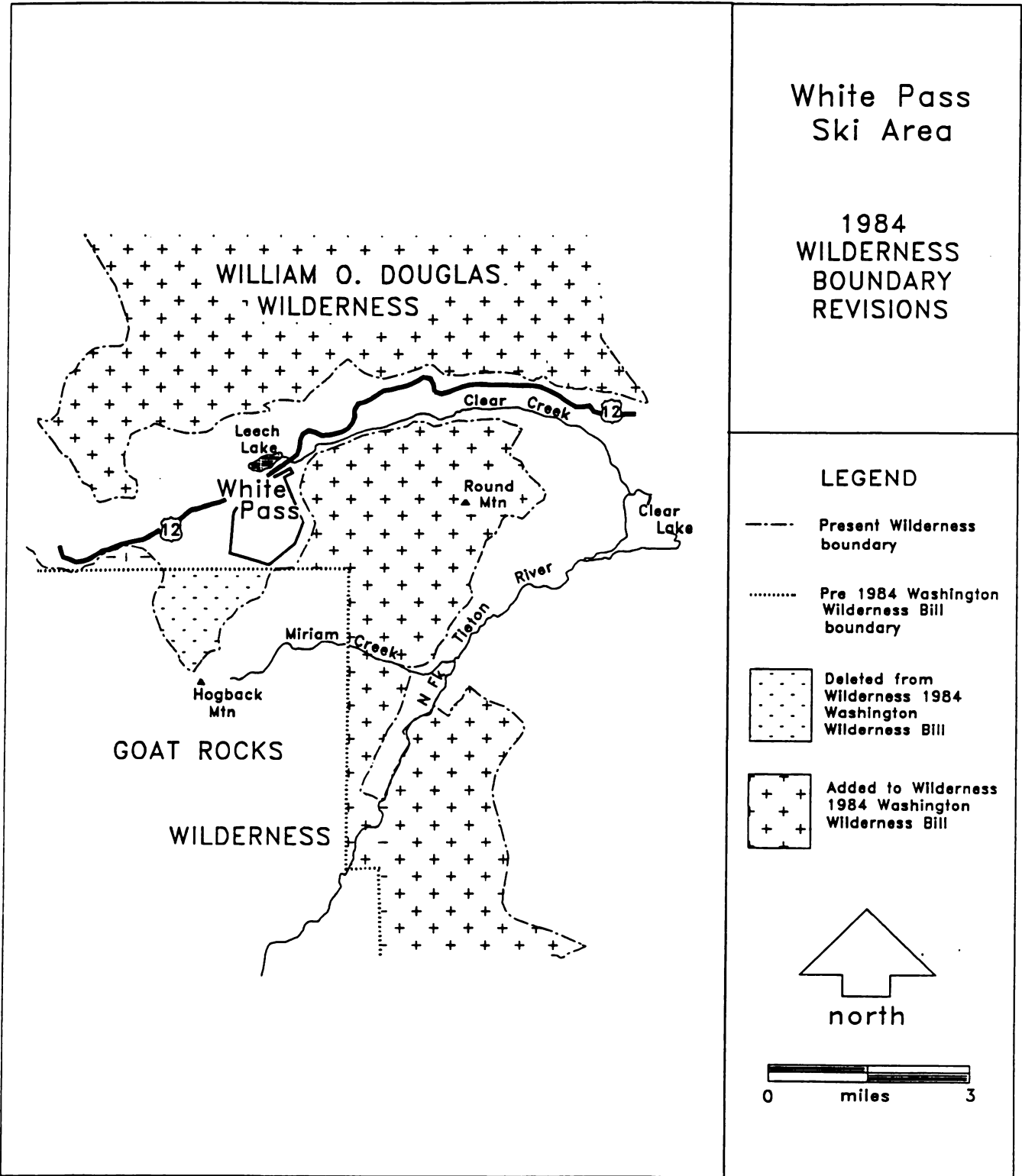


FIGURE I-7



## **GOAT ROCKS WILDERNESS**

The Wilderness Act of 1964 (PL 88-577) had incorporated the Goat Rocks Wild Area into the Wilderness Preservation System as the Goat Rocks Wilderness. This prevented White Pass Company expansion to the south because the Wilderness boundary was within 1,000 feet of Pigtail Peak in the southern tip of their Permit Area. Development is prohibited in Wilderness.

Many people, including those involved with the White Pass Ski Area, began working to get a portion of that Wilderness declassified. Negotiations between Congress and interested parties resulted in the 1984 Washington Wilderness Act [PL 98-339].

### PORTION OF THE WILDERNESS DELETED

In this Act, on the one hand, Congress substantially increased Wilderness in the state by adding 23,000 acres to the Goat Rocks Wilderness and by creating the William O. Douglas Wilderness north of White Pass. But it also, in an unprecedented action, withdrew 800 acres in the Hogback Basin area from Wilderness designation. [See Fig I-7 Wilderness Boundary Revisions.] The Congressional Record for the Act includes the following statement:

The 800 acres deleted from the existing Goat Rocks Wilderness have significant potential for ski development and should be managed by the Secretary of Agriculture to utilize this potential in accordance with applicable laws, rules, and regulations.

In an April 17, 1989 letter to Wenatchee Forest Supervisor Sonny O'Neal, Congressman Sid Morrison conveyed his understanding of Congressional intent:

Early in the 1980's, I was approached by numerous constituents through several meetings on the desirability of expanding the skiing potential at White Pass. Everyone involved was associated with the White Pass Ski Company as employees, officers, or customers. In other words, we were talking about downhill skiing and the potential for expanding the lifts, runs, and facilities to accommodate the crowds that were increasingly using this recreational opportunity.

At the time, as you may recall, White Pass was on the map because of the Mahre twins and their stellar Olympic performances. As a non-skier, I was proud to show them off when they visited the nation's capital, and they were eager to share with me and congressional staff members the downhill potential for an expanded White Pass ski area. Other members of Congress gradually shifted from resistance to modifying existing Wilderness boundaries to realization (1) that an expanded White Pass area was truly the highest and best public use for that portion of the Goat Rocks, and (2) that I was more than willing to expand the Goat Rocks significantly to offset the modest loss of acreage in the summit area.

I am also an enthusiastic supporter of cross-country skiing opportunities on public lands, however my history of the development of the Goat Rocks proposal would have to be written without significant mention of cross-

country. In fact, I found it ironic that the discussion on cross-country was by the folks who use the White Pass chair lift to get access to the magnificent protected areas of the Goat Rocks. It has been my presumption that expanded lifts would not remove this option.

My initial support in the Congress for the Goat Rocks modifications came from former Congressman Don Bonker. His district also included part of the White Pass summit area, and is heavily used by constituents coming from western Washington. I have every confidence that he would agree with the observations made in this letter on intent. Other members of the delegation played a lesser role in the Goat Rocks proposal, but former Congressman Mike Lowry played a watchdog role on behalf of environmental interests. They were concerned about the precedent established by boundary modifications but agreed with the expansion of downhill skiing opportunities in exchange for significant expansion of Goat Rocks, acknowledging that any future use would be subject to an EIS.

These comments reflect the series of meetings leading to, and the agreement reached on the Goat Rocks. None of us working on the proposal ever presented it in any other way, and I hope this letter clarifies our intent.

During negotiations for the establishment of the southern boundary of the William O. Douglas Wilderness, specific attention was given to that area north of State Highway 12 in the vicinity of White Pass. The Congressional staff who worked with the Forest Service personnel recognized the potential for nordic skiing and its relationship to the existing groomed nordic ski trails leading from the nordic center, provided by the White Pass Company near Leech Lake. This boundary was established well away from the highway corridor to allow adequate room to develop the nordic skiing opportunities afforded by the terrain.

## **THE PROPOSAL**

### **EXPANSION DESIRED**

Many skiers are seeking high quality, short skiing vacations lasting two to four days. Attributes these skiers desire are dependable snow conditions, runs with a vertical drop of more than 2,000 feet, uncrowded conditions and modern facilities. This is evident from the popularity of those resorts that have these features. Currently, many Washington State skiers go out of the state for these mini-vacations. The Pacific Northwest Ski Areas Association, the Washington State Winter Recreation Commission, the Department of Tourism, and the Department of Commerce and Economic Development are all concerned about losing Washington skiers to other states. The White Pass Company desires to market skiing to this group.

White Pass Company's main reasons for wanting to expand are:

(a) To continue to provide quality skiing for existing and potential alpine and nordic skiers at all skill levels;

(b) To be able to meet the public demand for additional ski terrain; and,

(c) To become more competitive in the local and regional market and to capture a share of the Washington State skiers who are now leaving the state.

These objectives would be accomplished by adding lifts and runs that will serve all levels of skiers and by providing groomed and ungroomed marked trails for the nordic skiers. New territory would be accessible to provide more skiing opportunities such as better skiing terrain, different scenery and vegetation, and better available snow conditions. This combination would provide diverse, high-quality, uncrowded alpine and nordic skiing opportunities and generally improve the setting of the Ski Area. White Pass Company has indicated that it intends to maintain their ticket prices at a competitive level in order to continue to provide opportunities for the family-oriented skier.

### **EXPANSION OPPOSED**

Some nordic skiers, especially those who enjoy the present unique setting of Hogback Basin, oppose expansion and added lifts. These skiers want to retain the current opportunities for experiencing isolation, independence, closeness to nature and self-reliance in a high-elevation, alpine setting with easy one-day access. Access from Chair Lifts 1 and 2 make this opportunity readily available to a wide range of nordic skiers.

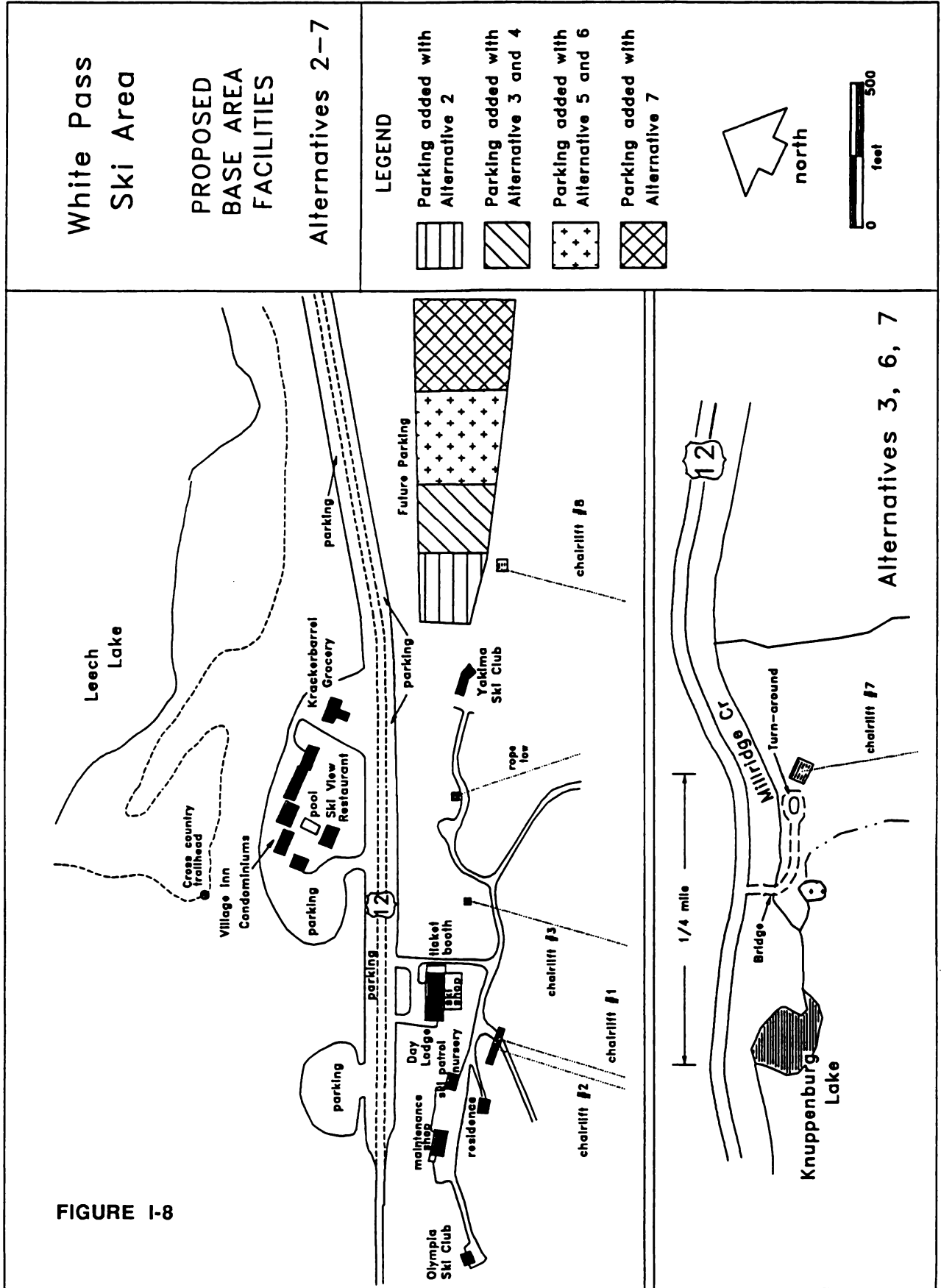
### **PROPOSAL**

White Pass Company, Inc., proposes to add four chair lifts, two in the upper Hogback Basin, one at lower elevation starting 1/4 mile from Knuppenburg Lake on Highway 12, and Chair Lift 8 in the existing area. This would add approximately 1,100 acres to the present development. [See, aerial view, Figure I-2 and alternative maps in chapter II, e.g., Figure II-7.]

The proposal also includes building a mid-mountain warming hut to provide on-slope restroom and day lodge services. Base Area facilities and services would be added to keep all services in balance. [See Figure I-8, Proposed Base Area Facilities.] No additional on-site overnight accommodations are proposed.

With total expansion, the vertical drop of developed runs would increase from the present 1,500 feet available to 2,600 feet. Acres under permit would increase from the present 712 to 1,820 acres. Existing comfortable capacity of the Ski Area is about 2,500 skiers per day; with the additional area the company projects this to increase by another 2,000. Existing lift capacity is about 3,700 skiers per day; the company projects this to increase by another 3,660 skiers. The Area now averages about 100,000 alpine skier visits per year; that is projected to double to 210,800. These estimates are based on population growth projections for the market area served by White Pass. [See Figure I-9 showing terrain skill level.]





## **TYPES OF SKIERS**

A wide variety of skiers presently enjoy the White Pass area, some seeking special or unique settings available in the vicinity. The present terrain offers a variety of slopes for beginner, intermediate and expert alpine skiers as well as for the several types of nordic skiers. In an effort to display the effects on the different types of skiers, and for consistency throughout this document, the following definitions are established.

### **ALPINE SKIER**

The White Pass Ski Area was designed to accommodate alpine, or downhill, skiers. They use the lifts, the developed runs, and the various developed support facilities. The telemark skier who uses the lifts and skis the developed ski runs is included in this group.

This type of skier desires a setting that is modified to accommodate large numbers of alpine skiers. Many want to meet and see new people. In this specialized setting, testing of skills is important, as well as opportunities for a high degree of challenge and risk-taking. Being with family and close friends and experiencing nature also tend to be meaningful. To most, safety, comfort and convenience of lodge facilities, easy access, groomed runs, and Ski Patrol service, are significant amenities.

Based on ability, experience and desire, alpine skiers are grouped into three classes in the White Pass Master Plan: beginner, intermediate and advanced. Each has a different preference for slope steepness and a different perception of crowding as measured by skier density.

**TABLE I-1, ALPINE (DOWNHILL) SKIER SLOPE PREFERENCE**

Class	Desired Slope %	Run Capacity skiers per acre
Beginner	15-25	25
Intermediate	25-40	15
Advanced (expert)	40 +	10

(Source: Forest Service Ski Area Design Brochure)

### **NORDIC SKIER**

Nordic skiers have one thing in common: they all use some form of cross-country ski equipment. However, they are looking for a wide variety of experiences and different settings. Classification of nordic skiers is not standardized, nor have defined capacity levels been established. Still, three groups are identified at White Pass based on the setting each desires.

### **GROOMED TRACK SKIER**

This skier skis in a track formed especially for the sport. Parallel grooves are packed in the snow by snow machine and the skier glides in them. Tracks usually have several

configurations, including closed loops. The setting is generally flat to rolling terrain and close to developed facilities.

All experience levels use these tracks, beginner, intermediate and expert. The beginner may be a family with a young child just starting to ski; the expert may be a nordic racer looking for aerobic exercise. Social interaction between skiers is enjoyable for beginners but a detriment to the expert trying to maintain a racing pace.

Advanced skiers use a "skating" action that is detrimental to groomed tracks. At White Pass this is accommodated by packing the tracks to the side of the trails with space left in the middle for the skaters.

At White Pass, track skiers use a system of trails on the north side of Highway 12 and around Leech Lake. The trails were developed by cutting paths through the woods. These skiers also use the support facilities provided for the alpine skier.

#### **NON-GROOMED TRAIL TOURER**

This type wants a more remote setting. Small group interactions and isolation from sights and sounds are important. The skiers also want unprepared trails, interaction with nature, and prefer to be away from motorized equipment (such as snowmobiles). They want few controls or regulations, though trail markings are desirable. They also use the base area facilities if provided.

In the White Pass area, non-groomed touring occurs in the William O. Douglas Wilderness towards Sand Lake to the north, on the Yellowjacket road system (#1284) towards Cortright Point to the west, and around Dog Lake to the east. None of these areas have marked trails, however. [See Figure I-6, Study Area.]

#### **BACKCOUNTRY SKIER**

Many backcountry skiers are looking for a semi-primitive setting with untracked snow. Though evidence of others is acceptable, a natural setting with low interaction between users and closeness to unmodified nature is important. Challenge and risk, difficulty of access, uncertain weather, and rugged terrain are also desired conditions because these elements contribute to feelings of self-reliance and independence. Many of these skiers use support facilities when they are provided. [Backcountry areas are indicated in Figure I-18.]

Three sub-types of backcountry skier are identified at White Pass. They are separated because of the terrain and settings they prefer.

##### **Extended Tourer**

This is the winter, wilderness camper. The areas used are primitive settings in Wilderness both north and south of White Pass. This group generally desires the most isolation, particularly when camped.

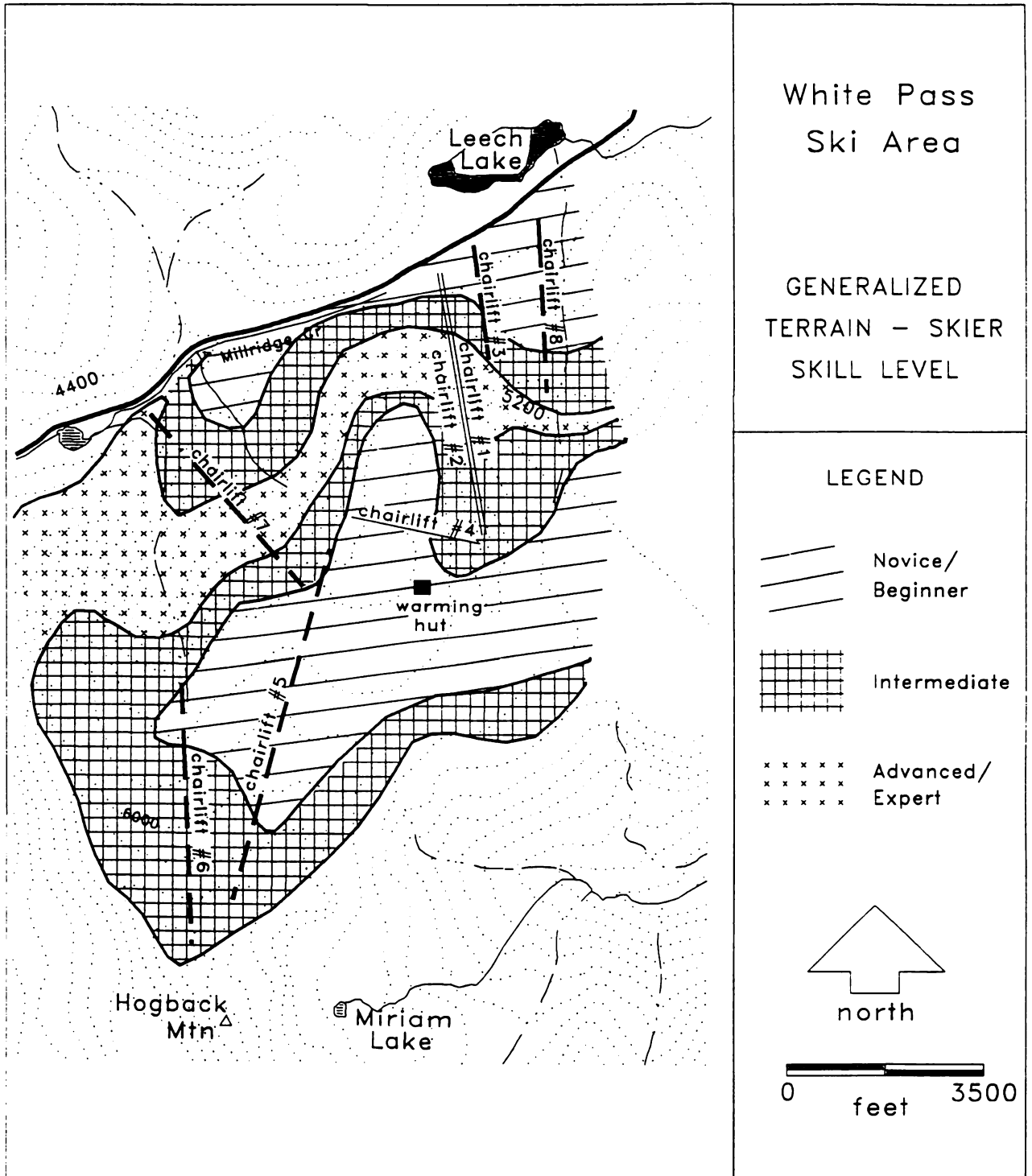
##### **Telemarker**

This is a specialized group that uses the steeper headwalls to make telemark runs in an undisturbed setting. They use Hogback Ridge and go into Shoe Lake and Miriam Creek Basins. They use the chair lift as an aid to get to their chosen area.

**Day Tourer**

This group likes remote settings but prefers more gentle terrain. They also use the chair lift to reach their area. Feelings of isolation, challenge and risk are not as important . They also like the ease of access and gentle terrain of Hogback Basin and similar areas.

FIGURE I-9



## **SKIER DEMAND**

### **ECONOMIC DESCRIPTION OF THE DOWNHILL SKI INDUSTRY**

#### **SKI INDUSTRY ECONOMICS**

Economists use the term demand to describe what quantities of commodities, services and so forth consumers are likely to want. In a similar way, supply describes those that producers are likely to place on the market. Much of the research related to supply and demand is concerned with prices and the interaction among them (including supply production costs). These studies have focused primarily on commodities that are relatively homogeneous, like wheat or beef. But beef is no longer just meat. It's meat, fast food hamburgers, frozen dinners, and restaurant meals.

As time has passed and the economy grown more complex, the problems of measuring supply and demand as portrayed in theory have increased. When the economy was less complex, competition for a share of the market was through prices. Producers increased the variety of products and now often seek to increase their market share by means other than price competition. Likewise, consumers have sought more convenience and variety in what they consumed. Automobile makers no longer just sell cars, but carefully target their products to specific consumer demands for cars with a wide variety of features. This same trend applies to ski areas. They no longer market a homogeneous commodity. They market complex bundles of goods and services to increasingly discriminating consumers.

#### **ECONOMIC FACTORS**

Though there are many ski areas nationwide, they generally do not compete with each other nationally. They tend to be geographically grouped, especially in the west, around the availability of the physical resource, that is, where the good slopes and good snow are. But they're also oriented to where their customers live, and all the ski areas in that market area compete.

There are several factors that affect the economic behavior of ski area firms. Usually ski areas are some distance from the population centers where most customers live. Their natural endowments are different from their competitors' and they're different distances from the markets they compete for. Entry into the industry is restricted because there are a limited number of suitable, undeveloped locations, particularly in the west. Ski areas require a significant capital investment, have significant fixed costs, and operations are designed to accommodate peak demand, with significant excess capacity at non-peak periods.

In addition, skiing is a seasonal business and, despite heavy investment in total productive capacity, actual production in any given year and from day to day is determined by the weather. A timely start to the season is important to maintain participation levels. The length of the season is important for long term profitability. Few other industries are as dependent upon the weather for their profitability. Furthermore, each ski area is likely to have different weather.

### NON-PRICE COMPETITION.

Given these factors, including costs of production, individual ski areas typically compete for market share through non-price means, primarily marketing and product differentiation. Ski areas will likely maximize their competitive advantage by using their resources to produce a unique product. (Indeed, the climatic, locational and physical differences between ski areas limit their ability to produce a *totally* uniform product.) A ski area will plan for and assemble a bundle of features that make it enough different from other areas' to better serve consumers' demand, even create new demand (by interesting new skiers or increasing participation of existing ones), and entice skiers away from its competitors. These features can include run quality such as variety, length, vertical rise and skill level mix; amenities such as restaurants, restrooms and lodging; comfort such as lack of crowds and short waits for lifts or restrooms; nearness to other amenities and activities; and, services such as ski rental or repair and ski schools. In this regard, upgrading and expanding existing facilities and developing new resources not only improve a ski area's competitive position by its response to market opportunities, but, if competitors have upgraded their products, improvements must be made to stay competitive.

### NON-LOCAL COMPETITION

Besides competition among ski areas in a regional demographic/geographic market area, some competition nationally and internationally exists. Two factors influence it. One is that transportation to virtually anywhere in the the world is available and convenient. The other is that skiing is no longer just a demanding sport, it is a fun-time leisure activity and the ski industry providing it is part of the larger leisure industry. Ski areas who include on-site or nearby lodging and related amenities in their product can take advantage of this portion of the demand. Those that don't will lose customers to ski areas that do, whether the competition is in the primary market area, in another state or in another country.

### NATIONAL AND REGIONAL SITUATION

White Pass use is influenced not only by the local demand for skiing but also by the regional and national situation. Mel Borgersen Consultants, in "Supplement Two to the 1978 Master Plan Program for White Pass Ski Area" (September, 1986), summarized the national and regional markets:

#### THE NATIONAL ALPINE MARKET

Alpine skiing during the 1960's and 1970's expanded in the United States. This has been documented by the increase in the number of ski areas, the increase in the ski area capacity, as documented by the sale of uphill transportation systems, the increase in slope capacity, and the growth in skier attendance.

This growth in ski areas, skier capacities, and skier visits averaged nearly 10% per year. Growth was interrupted only by unfavorable weather

conditions which created inadequate snow, poor travel conditions, area closures, etc.

Since the 1978–79 winter season, the skier visits on a National basis have reached a plateau, with only slight changes each winter primarily due to weather. The 1980 season experienced a severe drought in the west, which greatly affected the National totals.

Various studies have placed the total number of alpine skier visits in the United States at approximately 50 million. Actual visits were reported by National Ski Areas Association's National Business Survey, as follows:

TABLE I-2, VOLUME OF BUSINESS FOR THE TOTAL U.S. SKI INDUSTRY

Year	Million Skier-Visits	Index (78–79 base)
1978–79	50.197	100
1979–80	48.200	96
1980–81	39.700	79
1981–82	50.718	101
1982–83	46.861	93
1983–84	50.630	101
1984–85	51.354	102
1985–86	51.921	103
1986–87*	53.700	107
1987–88*	55.000	110
1988–89*	53.300	106

[Borgersen: Table 2. \*Additional data supplied by Borgersen, 1989]

While the National market has plateaued for alpine visits, the individual performances of ski areas varied greatly. As previously stated, micro weather conditions are very important. Market share is also greatly influenced by the quality of services provided the skiing public at each ski area. The skiing public has come to expect expertly-groomed and compacted slopes and trails. They are less tolerant of overcrowding and long waits in lift lines.

An annual lift revenue and skier visit survey by Mel Borgersen Consultants reveals the well-managed ski areas which are catering to the wishes of the public continue to expand their facilities and services and capture a larger share than those ski areas providing a marginal-quality experience.



In 1989 McKinsey and Company completed a major study of the ski industry in the United States for the National Ski Area Association (NSAA) and the Ski Institute of America (SIA) ("Building Skier Demand," January 13, 1989). That study concluded that the ski industry could boost public participation significantly with proper marketing. The goals would be to attract new skiers and to encourage existing skiers to ski more often.

The NSAA/SIA launched such a marketing campaign, similar to the very successful golf and milk campaigns of the last few years. The goal for the 1989/90 season was to attract new skiers. The longer-term goal is to attract 3.5 million new skiers from the 35 million potential skiers in the nation. Also, the McKinsey study indicates that an industry marketing campaign can persuade 1.6 million of the 13 million current skiers to ski more often. It estimates that skier visits will increase 40% over the next five to ten years.

**THE REGIONAL ALPINE MARKET**

[Borgersen, "SUPPLEMENT TWO", 1986, Continued]

The growth in skier visits in the Pacific Northwest has not equaled the growth in some other sections of North America. [See Table I-3.] There are a number of reasons for this. Major ski resorts with complete vacation facilities are attracting a growing number of ski vacationers who spend 3-14 nights on a winter holiday. Colorado, Utah and California (and British Columbia) have participated in this growing market.

The regional market has been greatly impacted by the Whistler-Blackcomb development in British Columbia. Located only 70 miles north of Vancouver, B.C., this multi-million-dollar complex has attracted skiers from a large market by providing destination resort facilities. It has captured a sizeable portion of the Washington State market and has greatly reduced the number of British Columbia skier visits to Washington ski areas.

**TABLE I-3, SKIER VISITS: 9 WESTERN STATES, 1968-69 TO 1984-85, AND 68-69 TO 88-89 (MILLIONS OF SKIER VISITS)**

State	base season 1968-69	1984-85	% Increase	1988-89	% Increase
Washington	1.53	1.70	11	2.03	32
Oregon	.52	1.46	181	1.53	194
California	2.48	6.50	162	7.40	198
Idaho	.46	1.00	117	0.98	113
Nevada	.13	.34	161	0.35	169
Montana	.32	.80	150	0.88	175
Wyoming	.13	.36	177	0.46	253
Utah	.34	2.52	641	2.57	655
Colorado	2.34	9.04	286	9.89	326

[based on Borgersen: Exhibit 1]

(Source: Skier Visit Reports from the US Forest Service)

Mt. Bachelor, in Central Oregon, has had a phenomenal growth and enjoys approximately one-half million skier visits per year. Its chief market is the Pacific Northwest and California.

Sun Valley [Idaho] continues to enjoy more skier visits from Washington State than from any other state in the Union.

The Whistler-Blackcomb, Mt. Bachelor, Sun Valley, and (possibly) Early Winters resorts will have a long-range beneficial effect for all ski areas in the Pacific Northwest. Somewhat remote from very large population centers, the Pacific Northwest will gradually cater to a larger market as the quality of skiing and the long season come to the attention of skiers in other Western States and the Orient.

## THE WASHINGTON STATE SITUATION

Borgersen, in "Supplement Two to the Master Plan," notes:

In the eleven Western States, only California and Colorado have more resident skiers. There is no evidence that the number of active skiers in Washington has not increased in some measure, similar to that in other states. Other states have been very successful in attracting Washington State skiers to their ski areas, which largely accounts for the no-growth figures in Washington.

The existing ski areas in Washington State have the potential for expansion, but to a limited amount. Some ski areas have already reached their comfortable theoretical capacity on the basis of the natural resources available.

The start-up costs for a new ski area have become very high and tend to eliminate any potential new area unless the natural resources and all supporting conditions are very superior. With the exception of Early Winters [in the Methow Valley in North Central Washington], there is practically no potential for the development of any other major ski resort in the State of Washington.

Kevin McCarthy, Manager, White Pass Company, makes the following observation:

If we combine facts, we may see a trend to understand the skiing habits of Washington State skiers. Washington has more resident skiers than all western states aside from California and Colorado. Yet during a span from 1968–1985 Washington State skier visits only increased from 1,530,000 skier visits to 1,700,000 skier visits annually, while the total for all western U.S. states grew from 8,250,000 visits in 1968 to 23,720,000 skier visits in 1985. It is also a well-accepted fact that the number of skiers living in the State of Washington has increased appreciably since 1968 due to at least two main facts: a much greater population base of the state, and the continued high interest in the sport of skiing throughout this time frame. So where do the people ski? Other western states! And why? Because of the

tremendous growth in available ski facilities. Therefore, it is the belief of White Pass Company that there are sufficient skiers in the State of Washington to support an expanded ski facility at White Pass, and that an expanded facility at White Pass will provide the skiing experience that Washington skiers are experiencing at resorts in other western states.

### **NORDIC SKI DEMAND**

Comprehensive figures for nordic skiers in the United States are not available. Chris Frado, President of the Cross-Country Ski Area Association of America, indicated that specific figures had not been developed. Still a trend can be noted, based on evidence from several sources in the cross-country skiing business.

Nordic ski centers that have applied aggressive marketing schemes and have consistently provided facilities desired by the skiers have generally reported an upward trend in the number of skiers. By far, this trend is in groomed-track skier use.

According to the February, 1989 issue of *Skiing Trade News*, most equipment and clothing sales showed healthy unit increases. Alpine sales showed increases for skis of 4.3 percent, boots 1.3 percent, and bindings 8.4 percent. The figures for nordic sales were 7.5 percent for skis, 11.4 percent for boots and 26.1 percent for bindings.

Pac West, near Snoqualmie Pass, reports groomed-track nordic ski visits for the 1986-87 and 1987-88 seasons were about the same and the ski equipment sales have been pretty stable with little trend indicated.

The Methow Valley Ski Association reported a 20 percent per year average increase in groomed-track ticket sales over the past five years. This increase may be attributed to an aggressive marketing plan and working in partnership with the Forest Service, as well as their providing the type of experience desired by groomed-track skiers. The association sold nearly 20,000 skier day passes last year and expects this up-trend to continue.

Asplund's, a Wenatchee-based outdoor recreation equipment store, indicated that nordic ski equipment and clothing sales had been on an up-trend the past five years, but now seem to have leveled off.

Seattle REI stores report that nordic equipment sales have increased 25 percent over the last three years. Nordic sales break down into 4% for ski skating, 40% for backcountry (telemarking) and 56% for general use.

Part of this apparent, if uneven, trend of increased nordic skiing can be attributed to what seems to be a connected trend away from alpine skiing in some parts of the country. Nordic skiing is attractive to a growing number of people for several reasons. (1) Equipment and tickets are relatively inexpensive compared to alpine skiing. (2) It is, or can be, simpler and easier to do. (3) It can easily be a family sport without costing too much. (4) Skiing is generally available wherever there is snow. (5) The trend toward physical fitness makes it an attractive winter activity.

Furthermore, as with most other competitive consumer-oriented businesses, the areas that develop aggressive marketing strategies and provide the facilities desired by the customers can expect an increase in use.

## **THE WHITE PASS MARKET AREA**

### OTHER SITES WITHIN THE MARKET AREA

There are a number of ski resorts in White Pass's market area serving some of the same skiers as the White Pass Ski Area: Snoqualmie Pass (Alpental, Ski Acres and Snoqualmie Summit, Hyak and Pac West), Crystal Mountain, Mission Ridge, Stevens Pass, and Ski Bluewood (see Figure I-10). They have their own particular market areas and special characteristics or combination of features. Skiers who desire certain characteristics frequent those resorts. Table I-4 displays some characteristics and features of each one.

The characteristics of a ski area and its location in relation to where skiers live are very important, but certainly not the only factors in attracting skiers. A variety of marketing techniques are also available to ski resorts to attract skiers.

Alpine ski areas affecting White Pass's immediate skier market area are Ski Bluewood and Crystal Mountain. Ski Bluewood serves skiers from the Tri-Cities and Walla Walla areas. Crystal Mountain skiers are generally west side residents from the South Puget Sound region. Extensive expansion at Crystal Mountain in recent years has been very successful in attracting more skiers.






Since Borgersen's 1986 Master Plan Supplement, each of these areas except White Pass and Mission Ridge have made major additions to or improved facilities at their base areas and have added or improved chair lifts. These actions have been in response to anticipated skier demand as well as to the need to upgrade and modernize in order to stay competitive. Market share figures indicate these expansions have been successful in satisfying skier demand and maintaining market share. (See Figures I-11, I-12, Market Shares, and Tables I-5, I-6 for data on ski area market share and skier visits.) White Pass And Mission Ridge are in the process of planning improvements. The economic descriptions of the ski industry above further explain reasons for proposing these types of improvements in order to stay competitive.

The population of Washington State is projected to increase from 4,480,000 in 1987 to 5,250,000 in the year 2000, a 17% increase. The majority of this growth is expected to be in the Puget Sound region (550,000 people). The median age will increase from 32.5 to 36.8 years. (See Figure I-13, below.)

White Pass  
Ski Area

MARKET AREA

LEGEND

-  Downhill Ski Area
-  Interstate highway
-  U.S. highway
-  State highway
-  0-2 hour approximate driving time

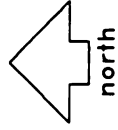


FIGURE I-10

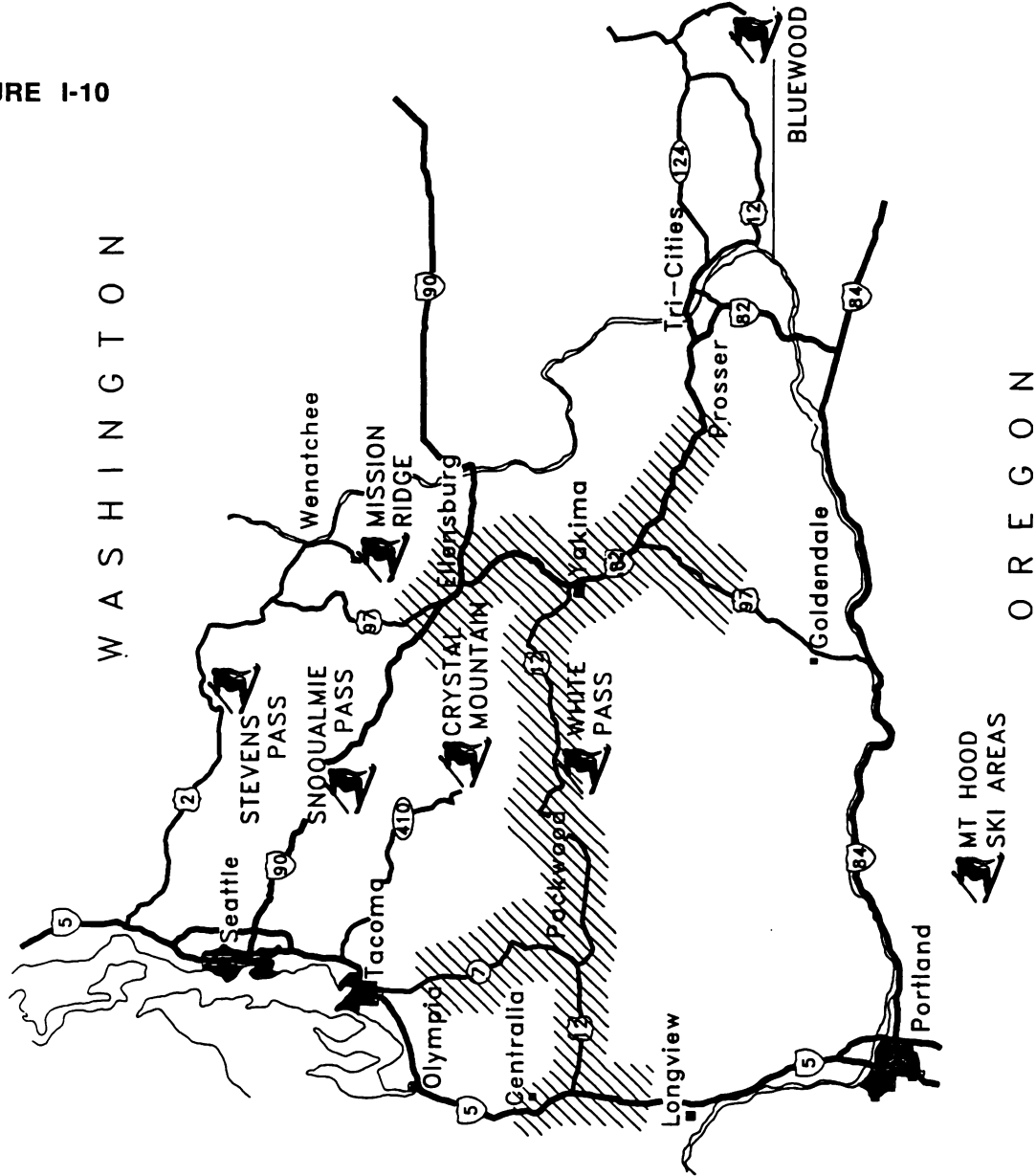


TABLE I-4, SKI AREA CHARACTERISTICS - WHITE PASS MARKET AREA

	Crystal Mountain	Alpental Ski Acres Summit	Mission Ridge	Stevens Pass	Ski Bluewood	White Pass Now	White Pass With Alts.2 & 7*
<b>Elevation:</b>							
top	7000'	5400'	6740'	5800'	5650'	6000'	6700'
base	3900	2900'	4600'	4000'	4450'	4500'	4100'
Vertical Drop	3100'	2200'	2140'	1800'	1200'	1500'	2600'
<b>Skiing Terrain</b>	2300 ac. 33 major trails B-C	open slopes; high bowls	33 runs	longest run=1.1 mi.	430 ac. 24 trails tree skiing	ac open longest run 2 mi.	1800 ac.; alp. basin trails
<b>Slope Difficulty, % of:</b>							
beginner	20	20	10	11	-	20	31
intermed.	37	42	60	54	NA	60	44
advanced	43	38	30	35	-	20	25
<b>lift cap./hr.</b>	15600	27940	4300	12140	4200	5525	7360
<b>Ave. Ann. Snowfall</b>	200"	450"	100"	105"	NA	250"	250"
<b>Snow making?</b>	none	none	20%	none	none	none	none
<b>Skiing Season</b>	mid-Nov mid-Apr	mid-Nov Apr	mid-Nov mid-Apr	mid-Nov mid-Apr	mid-Nov mid-Apr	Nov May	Nov May
<b>Add. Rec.</b>	X-C; NASTAR	75 km X-C; tubing	X-C & telemark classes	none	5 km X-C trails	15 km X-C trails	25 km X-C trails
<b>Lodging†</b>							
at area	3-H; 2-C	H	none	none	none	C	C
other	-	C-2 mi.	Wenatchee 15 mi	Skykomish Leavenworth	Dayton 21 mi	Packwood Yakima	Packwood Yakima
<b>Restaurants &amp; Apres-ski†</b>	rest. & day lodge bar - dance	rest. & cafeteria bar/lounge music	cafeteria beer/wine; Wenatchee 15 mi.	rest. & cafe 3 lounges	cafeteria pub	rest. & lounge	rest. & lounge; mid.-mtn. lodge
<b>Nursery &amp; child care</b>	yes	yes	no	yes	no	yes	yes

† H=hotel; C=condominium; F=full service (town or other); rest=restaurant.

\* projected or proposed data

(Source: The White Book of U.S. Ski Areas. 1989.)

FIGURE I-11

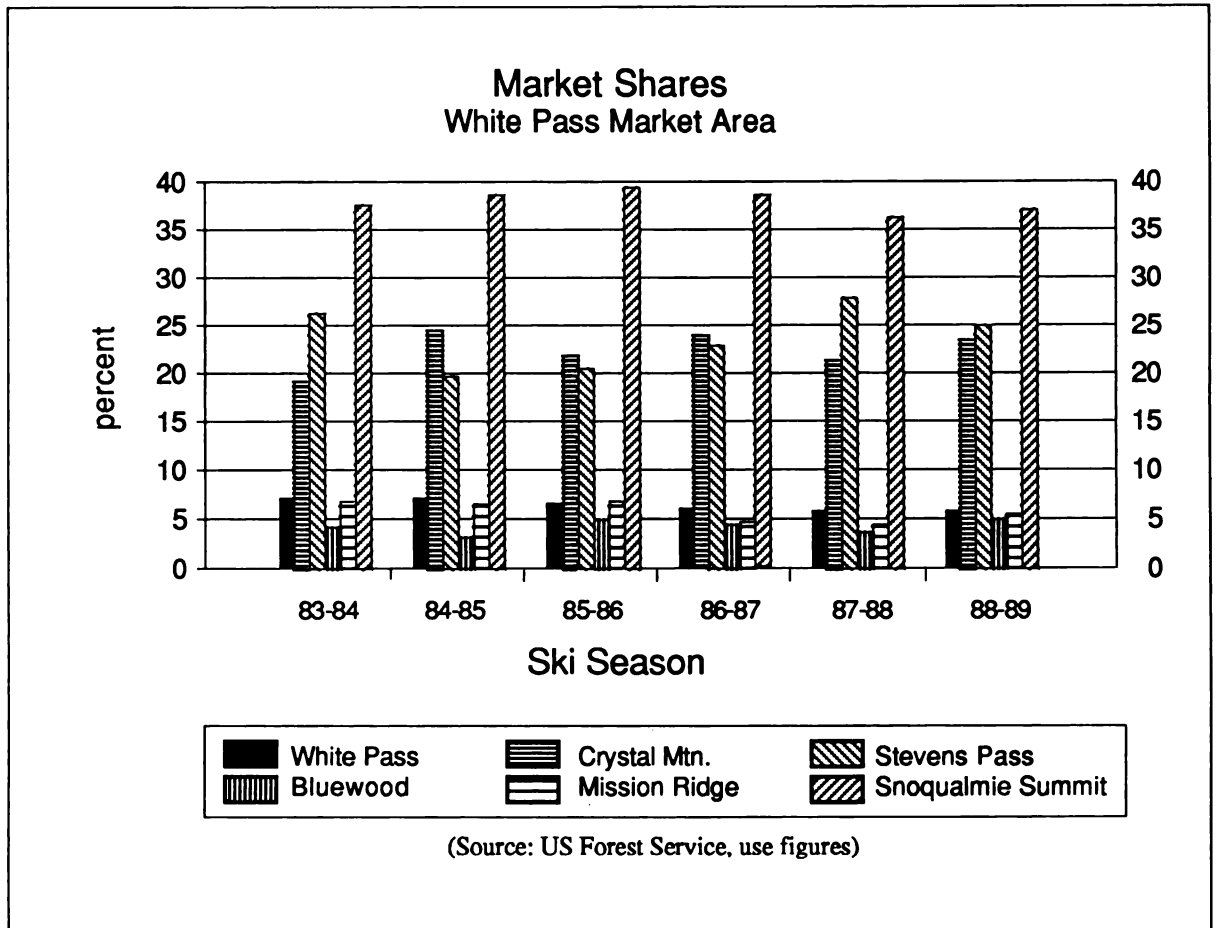
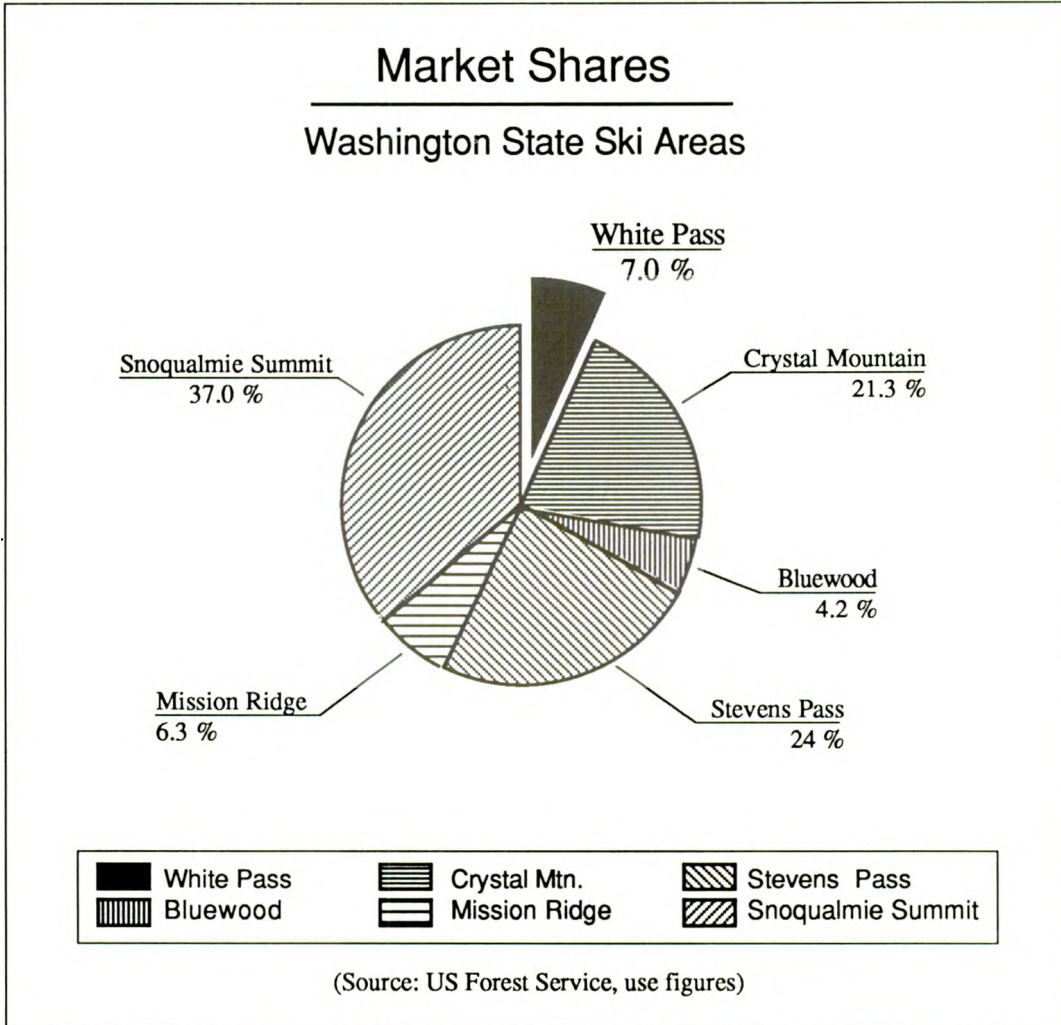


TABLE I-5, SKI AREA MARKET SHARES IN %, 1983-84 – 1988-89

year	White Pass	Crystal Mountain	Stevens Pass	Ski Bluewood	Mission Ridge	Snoqualmie Pass
83-84	7.59	18.38	26.41	3.64	6.40	37.57
84-85	7.25	24.30	20.06	3.14	6.70	38.54
85-86	6.62	21.58	20.31	4.26	7.20	40.03
86-87	6.48	23.84	22.70	4.03	4.25	38.70
87-88	5.99	21.22	27.39	3.86	5.11	36.42
88-89	6.03	23.55	24.70	4.28	5.33	36.11
average	6.7	22.1	23.6	3.9	5.8	37.9

(Source: US Forest Service, use figures)

FIGURE I-12



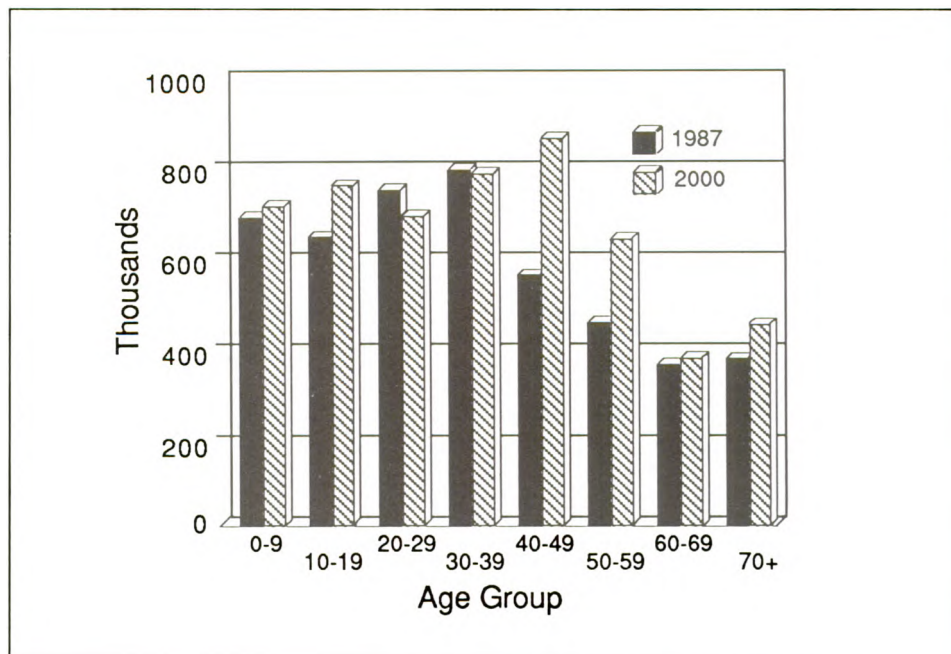


**TABLE I-6, SKIER VISITS, MARKET AREA , 1979-80 – 1988-89**

year	White Pass	Crystal Mountain	Stevens Pass	Ski Bluewood	Mission Ridge	Snoqualmie Pass
79-80	91,060	284,322	341,290	–	81,000	–
80-81	37,469	134,975	162,710	–	56,986	–
81-82	113,101	225,160	340,205	–	99,633	–
82-83	111,257	248,223	252,915	–	91,230	481,504
83-84	90,874	219,970	316,195	43,611	76,570	449,858
84-85	101,449	340,000	280,730	43,984	93,817	539,277
85-86	81,548	266,000	250,360	52,492	88,779	493,248
86-87	97,365	358,000	340,837	60,488	63,888	581,135
87-88	97,402	345,000	445,251	62,773	83,077	592,113
88-89	96,109	375,000	393,409	68,188	84,831	575,005
Total	917,634	2,796,651	3,123,902	331,536	819,811	3,712,140
Ann.Ave.	91,763.4	279,665.1	312,390.2	55,256.0	81,981.1	530,305.7

(Source: US Forest Service, use figures)

**FIGURE I-13, WASHINGTON STATE POPULATION AGE STRUCTURE, 1987–2000**



(Source: 1986 Washington State OFM Forecasts)

## PARTICIPATION TRENDS AND DEMAND

When demand cannot be associated with supply using specific prices, economists typically measure it in quantity terms. In the ski industry this means measuring participation. Skiing participation is pertinent to this EIS through projections of whether it will increase enough to warrant expansion at White Pass. Prognostication is necessarily speculative. But given present demographic and skiing participation conditions, reasonably secure and useful projections of population growth, and marketing programs now going on, and assuming certain cause and effect relationships between these and other factors, projections can be made (though they describe more what can be than what will be).

The number of people that will participate in downhill skiing in the future will depend on many factors. Demographics is one.

A recent NSAA study found that those who skied one or more times were between the ages of twelve and 24. Population studies indicate the United States population is getting older. But there is also somewhat of a baby boom affecting our schools. In addition, historic minorities such as Hispanics, Blacks and Asians will constitute a growing segment of our population.

Downhill skiers are today most likely to be from middle- and upper-income groups. Over half of the respondents to a 1988 study had incomes of \$35,000 or greater. People with lower incomes do participate in significant numbers, though, with over one-fifth of the respondents reporting incomes of less than \$25,000.

The tastes and preferences of consumers of downhill skiing is a second factor. Together they have been a powerful force in bringing changes to the industry and probably will continue to be. Ski Areas have found that people like well-groomed slopes, short lift lines, comfortable lifts that are easy to get on and off, and a good choice of uncrowded runs. Generally, ski areas have responded to these preferences and will continue to respond as tastes and preferences change. Any ski area that is not sensitive and responsive to changes may not survive in the business.

Third, marketing will affect the number of skiers in the future. It is dealt with below.

## GROWTH SCENARIOS

Four participation scenarios are presented. They are from the forthcoming report "Participation in Downhill Skiing," from the USDA Forest Service, Pacific Northwest Region.

Only a few studies exist to base a per capita analysis on. Data reflecting the relationship between demographic characteristics and per capita participation and consumption rates are scant. Consequently, this study uses only average participation and consumption rates for the total population within the broad geographical area.

### BASELINE SCENARIO

It is assumed that the percentage of the population that will participate in downhill skiing and the number of skiing visits will remain constant over time. The percentage participating and skiing visits per participant are based on recent participation rates and visits per skier in the recent past, according to National Ski Area Association (NSAA) data.

#### GROWTH SCENARIO 1

Building on the first scenario, this one also assumes that the percentage of the population that will participate in downhill skiing and the number of skiing visits per participant will remain constant. The percentage participating and the skiing visits per participant are based on recent participation rates and visits in the recent past. (NSAA) In addition, the ski industry is currently undertaking a promotional program designed to attract new participants and increase the skier visits of current participants. This scenario estimates the effect of the first goal, new skiers. It assumes this will occur at their projected rate. (Based upon McKinsey & Co. study, participation and skier visits increasing by 1.4% per capita. *Ski Area Magazine.*, November, 1988.)

#### GROWTH SCENARIO 2

This scenario extends the first growth scenario to include the goal of increasing skiing visits of existing skiers. No numerical goal was explicitly set by the industry. It is assumed that the average ski visits per year will increase by 1/4 day per participant. (Based upon McKinsey & Co. study: increasing participation rate by 1.4%, visits by 1/4 day.)

#### DECLINING GROWTH SCENARIO

Many factors can influence participation. This scenario is intended to reflect a rather severe reduction in participation. Changes in leisure time, tastes and preferences for us of that time, changes in income, etc. are forces that could contribute to this kind of trend. (Decline in demand of 10% participation and 1 visit per skier.)

Using these scenarios and considering the White Pass market area, the following participation projections in Table I-7 and in Figures I-14 and 15 can be made for alpine and nordic skier visits. (The White Pass market area includes Yakima, King, Thurston/Pierce, Clark/Lewis/Cowlitz, Benton/Franklin, and Pacific/Wahkiakum counties.)

Based on market projections made from the demographics for both alpine and nordic skiers, it becomes evident that, unless the Declining Growth Scenario were to become a reality, there are adequate numbers of skiers available to use the proposed expansion area.

Note: all projections are based on the market population over six years old.

TABLE I-7, PROJECTED MARKET AREA SKIER VISITS

	Decade		
	1990	2000	2010
Market Area Population	2,665,913	3,067,365	3,535,120
Baseline Scenario.....	2,338,700.....	2,690,800.....	3,101,200
Participation Rate =12.1%			
Visits/skier = 7.25			
Growth Scenario 1 .....	2,369,600.....	2,726,400.....	3,142,200
Participation Rate =12.26 %			
Visits/Skier =7.25			
Growth Scenario 2 .....	2,451,300.....	2,820,400.....	3,250,500
Participation Rate =12.26%			
Visits/Skier = 7.5			
Declining Growth Scenario .....	1,814,500.....	2,087,700.....	2,406,100
Participation Rate = 10.89%			
Visits/Skier =6.25			

FIGURE I-14

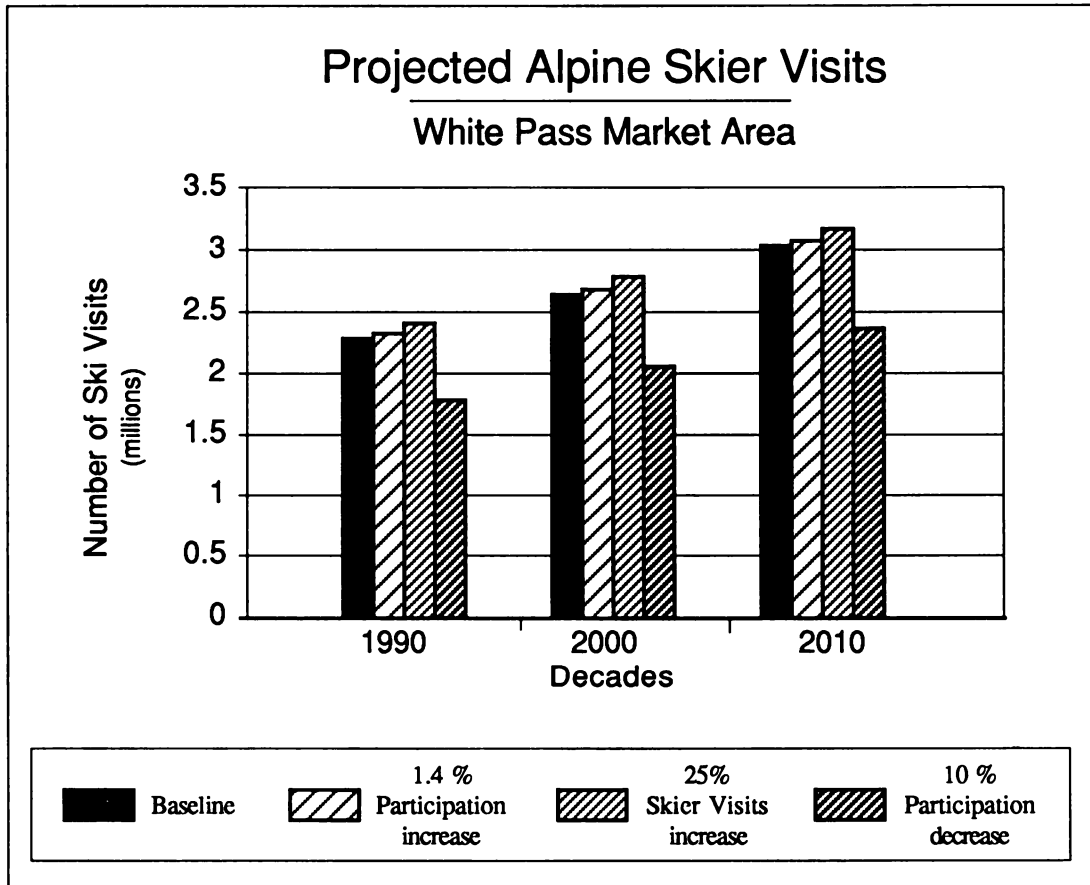
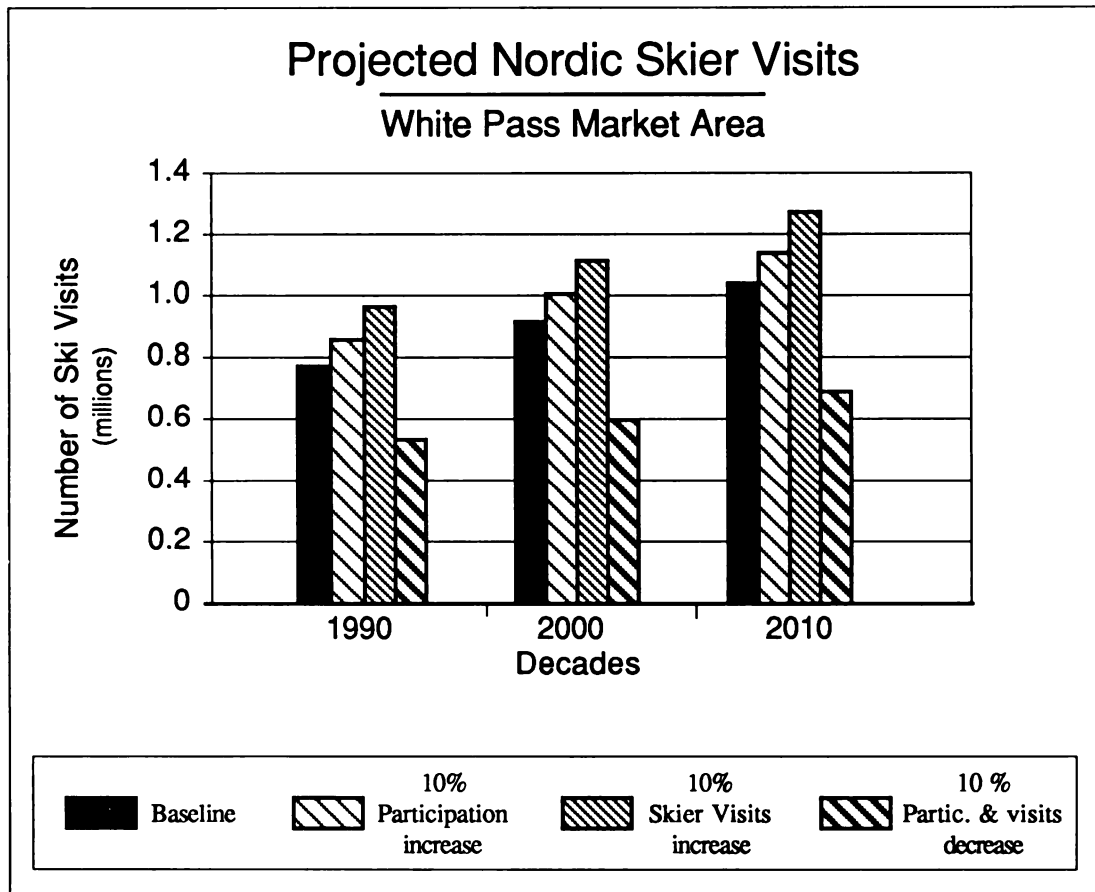


FIGURE I-15



**WHITE PASS SITUATION****SKI AREA USE**

Alpine skier attendance has increased very little at White Pass during the last 20 years. (See Table I-8 and Figure I-16, Alpine Skier Trend.) Walk-up sales are the number of daily lift tickets sold during the ski season. Total skier visits includes walk-up sales, groups, season lift ticket holders, passes, races and complimentary tickets. For the seasons up to 1983-84, total skier visits are estimated based on car counts. For the five seasons 1984-85 through 1989-90, total skier visits data are based on actual counts. For other years, 25% is added to the walk-up sales figures. (Total skier visits for those years when data were collected averages approximately 25% more than walk-up sales.)

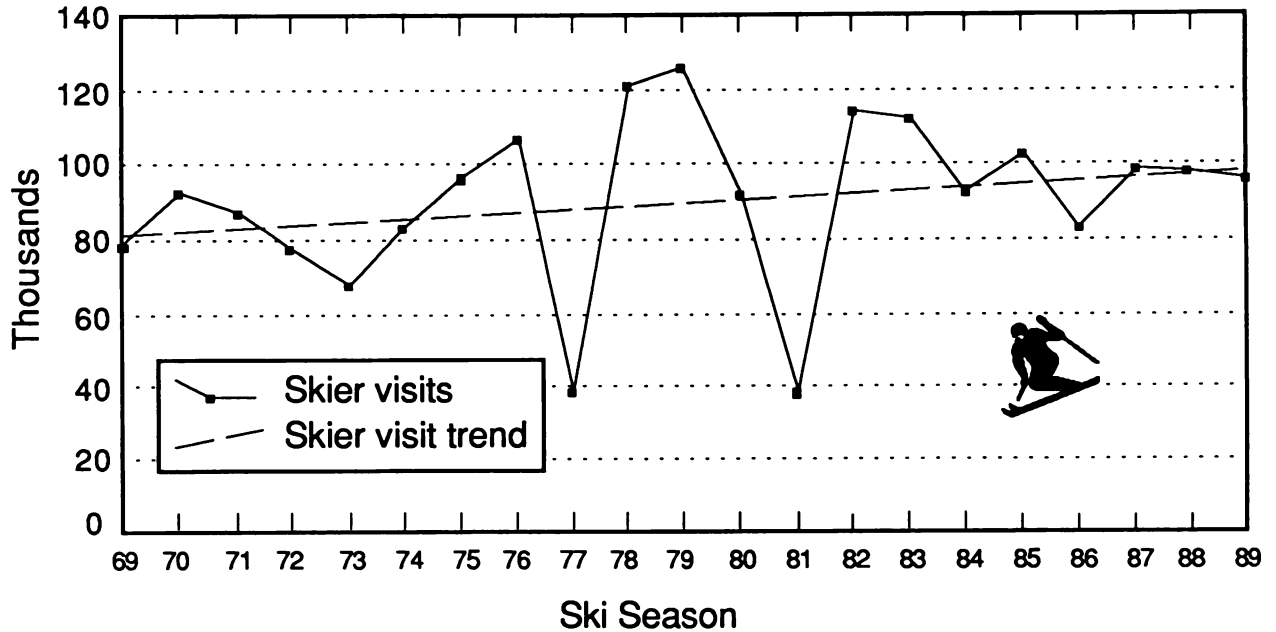
Table I-8 also shows cumulative snowfall for the ski season. Note that attendance dropped significantly during the snow drought years of 1976-77 and 1980-81, as it did at other western ski areas. The time of year snow comes is also critical to attendance. In the 1989-90 season, adequate snow did not fall until after the Christmas holidays.

**TABLE I-8, ALPINE SKIER VISITS, WHITE PASS SKI AREA, 1968-1988**

Year	Walk-up Sales	Total Skier Visits	Ave. Day W-E & Holiday	Snowfall
68-69	62,094	77,617	1,150	
69-70	73,722	92,152	1,410	
70-71	68,923	86,154	1,276	
71-72	61,513	76,891	1,139	
72-73	52,724	65,905	976	
73-74	66,019	82,524	1,223	
74-75	76,662	95,827	1,420	
75-76	84,932	106,165	1,573	
76-77	30,895	38,619	572	102"
77-78	96,269	120,336	1,783	
78-79	99,292	124,115	1,839	144"
79-80	75,848	91,060	1,349	159"
80-81	29,975	37,469	555	112"
81-82	90,481	113,101	1,675	234"
82-83	89,006	111,257	1,648	186"
83-84	72,699	90,874	1,346	182"
84-85	82,826	101,449	1,502	170"
85-86	65,104	81,548	1,208	180"
86-87	77,281	97,365	1,442	143"
87-88	77,358	97,402	1,443	284"
88-89	75,201	96,109	1,480	251"
89-90	53,320	70,570	1,726	313"

(Source: White Pass Company Records)

FIGURE I-16 ALPINE SKIER TREND, WHITE PASS SKI AREA, 1968-1988



An analysis of the 1977-78 season shows that approximately 80% of the total attendance occurred on weekends and holidays. "Average Day, Week-End and Holiday" figures in Table I-8 is 80% of the total attendance for the ski season divided by 54, the number of weekend and holiday days in the White Pass average season (160 days). The mean for average weekend day use since 1976-77 is 1,524 (not including low-snow years). This is about 30% of the Ski Area slope capacity and is consistent with ski area average use in the Pacific Northwest (31%), as noted in *Social and Economic Effects of the Proposed Ski development at Early Winters*, by Goeldner and Farwell, 1978.

During the 1988-89 ski season, average weekend, holiday and holiday weekend use was 61% of comfortable capacity while the overall use was 25% of comfortable capacity. Christmas use (12/26/88-1/1/89) averaged 82% of comfortable capacity and the peak day during that time period (1/1/89) was 99% of comfortable capacity.

**NORDIC USE**

**GROOMED TRAIL**

The White Pass Company's groomed-track facilities are well-known in nordic skiing circles and are considered by many to be premier. The company has been aggressive in providing support for nordic skiers and plans to expand these facilities.

The company currently administers approximately 15 kilometers (9.3 miles) of groomed, double-tracked, nordic ski trails on the north side of the highway. These trails provide both groomed, packed ski tracks plus a median area used by "skaters." Table I-9 summarizes measured use for the last four years, Figure I-17 displays the trend of this use.

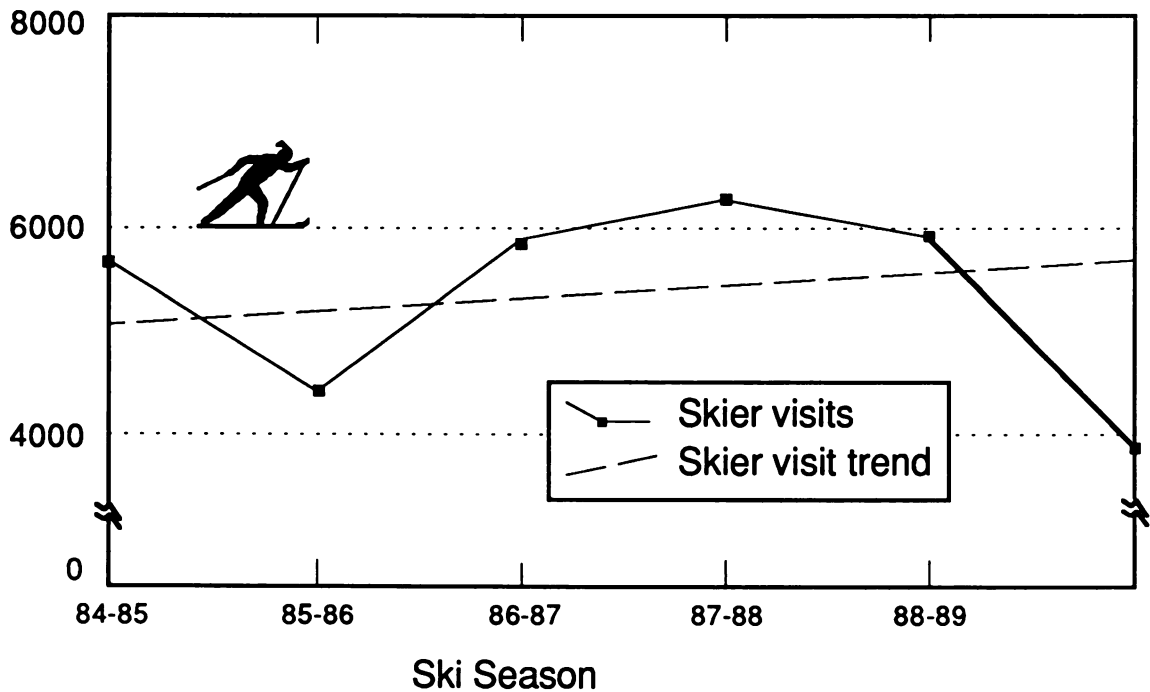
During the 1988 Christmas season, an estimated 2,500 skiers used this trail system. In 1989 it was closed during Christmas due to no snow. There are no industry standards for determining capacity of nordic trail systems, though variables such as terrain, trail length and parking affect it. The capacity of the White Pass system is unknown, but skiers have described the trails as being crowded. White Pass nordic skiers share the same parking area with the alpine skiers.

**TABLE I-9, GROOMED NORDIC TRAIL USE, White Pass**

Year	Weekend		Midweek	Season
	Average	Total	Total	Total
84-85	80	4,301	1,392	5,693
85-86	57	3,055	1,371	4,426
86-87	77	4,157	1,686	5,843
87-88	83	4,482	1,804	6,286
88-89	75	4,073	1,820	5,893
89-90	66	3,580	266	3,846

(Source: White Pass Company)

**FIGURE I-17, GROOMED TRAIL SKIER TREND, WHITE PASS SKI AREA, 1985-1989**





**NON-GROOMED TOURING**

Currently there are no marked, non-groomed nordic ski trails in the White Pass study area. However, skiers utilize the area north of the pass in the William O. Douglas Wilderness to Sand Lake, the area around Dog Lake, and the Yellowjacket road system (FS Rd. 1284). [See Figure I-6.]

**BACKCOUNTRY**

All three types of backcountry ski use occurs in the White Pass area. [See Figure I-18, Backcountry Areas.] Very few people in the Extended Tourer category leave from the Ski Area, though they pass through the study area on their way to destinations to the north in the William O. Douglas Wilderness and to the south in the Goat Rocks Wilderness. The other two types, Telemarker and Day Tourer, both use the ski lift system to reach the top of the Ski Area. From there they travel to their selected areas, telemarkers to the headwalls and day tourers to the upper basins.

Data relating to actual numbers of people participating in telemarking and day touring in Hogback Basin are not available. However, White Pass Company estimates that the vast majority of the backcountry skiers skiing Hogback Basin use the one-way lift ticket offered. It is also estimated that 50% of these tickets are purchased by backcountry nordic skiers (and 50% by alpine skiers making one trip down the groomed slopes). Using these assumptions, Table I-10 shows the estimated number of backcountry skiers, by month for 6 recent seasons.

During the 1987–88 ski season one-ride lift ticket prices were \$3.00 for one way and \$4.00 for round-trip. During the 89–90 season they were \$5.00 one-way and \$6.00 round-trip.

**TABLE I-10, BACKCOUNTRY SKIERS AT WHITE PASS**

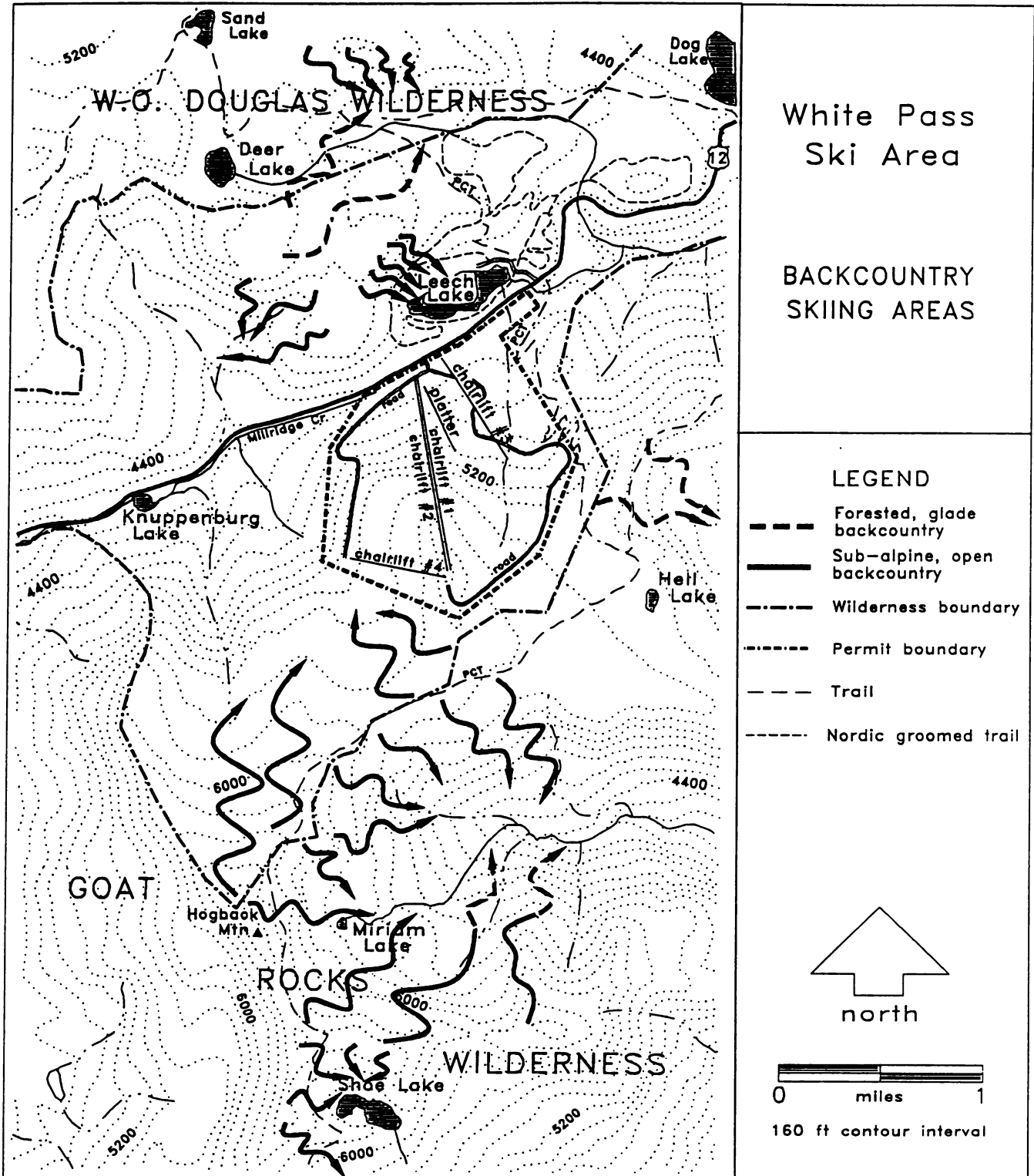
Month	Season					
	84–85	85–86	86–87	87–88	88–89	89–90
November	150	83	55	0	90	0
December	215	175	184	298	194	6
January	232	253	306	580	202	117
February	187	187	269	316	131	94
March	174	133	205	224	91	131
April	76	63	84	103	56	53
<b>TOTALS</b>	<b>1,034</b>	<b>894</b>	<b>1,103</b>	<b>1,521</b>	<b>764</b>	<b>401</b>

(Source: White pass Company Ticket Sales)

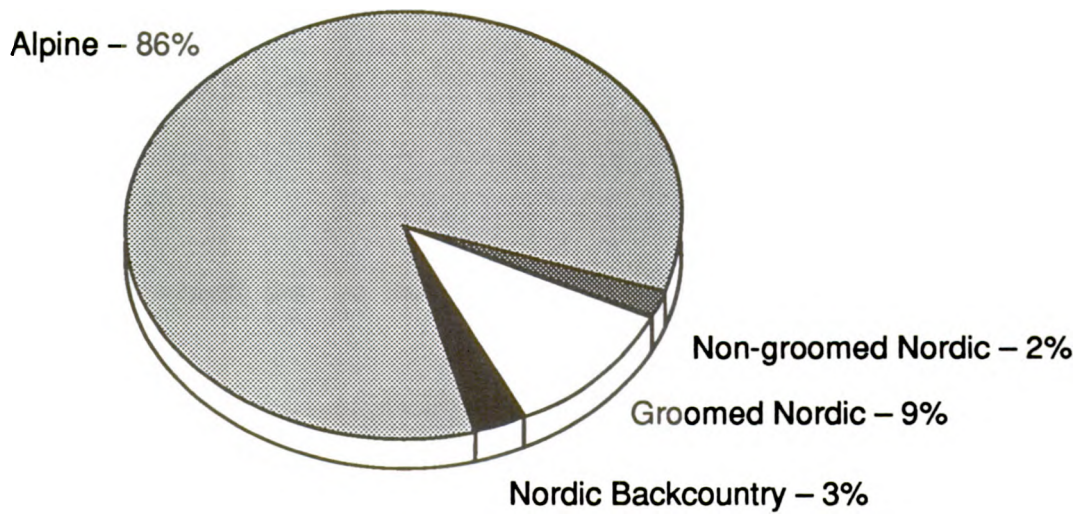
**SUMMARY**

White Pass Ski Area use is summarized in Figure I-19.

FIGURE I-18



**FIGURE I-19, AVERAGE ANNUAL SKIER USE, by type**



(Source: White Pass Company records. 1988-89 figures, last "normal" year.)

## **THE EIS PROCESS**

### **ENVIRONMENTAL ASSESSMENT**

White Pass Company's application for development was received and an Environmental Assessment (EA) was initiated in 1985. The draft EA was completed in 1988 and the Forest Service and interested parties raised several questions. During the review of this draft EA the Forest Service decided that, due to the controversy generated and because the application proposed development in what was previously Wilderness, the issue was significant enough to require an Environmental Impact Statement.

### **ID TEAM**

The USDA, Forest Service, Wenatchee National Forest is the lead agency for development of this EIS. The Wenatchee National Forest Supervisor, as administrator of the White Pass Special Use Permit, assembled an interdisciplinary team (ID Team) to prepare it. The team included specialists from three National Forests and the Pacific Northwest Regional Office. Various state and local agencies have cooperated and assisted in this assessment.

### **SCOPING**

Formal scoping for the Draft EIS was initiated in the Federal Register on August 18, 1988. On October 7, the Forest Service mailed scoping packets to the individuals and groups who had previously been involved. [See Appendix A.] The public was asked for input. Issues were addressed and the range of alternatives was analyzed. Two public meetings were held in November, one in Yakima and one in Randle, to explain the EIS process and to gather additional information on issues and alternatives.

This scoping period generated 197 responses. The Forest Service evaluated and analyzed these and the 200 responses from the previous Environmental Assessment action. A summary of this analysis is included as Appendix B. From the analysis the team developed the list of issues, concerns and opportunities addressed in this EIS. This list was then used to formulate "Comparison Criteria" for selecting a preferred alternative.

### **ISSUES**

The ID Team identified, through the scoping process, seventeen Issues, Concerns and Opportunities to be addressed in this EIS. Briefly, they are:

1. What will be the effects on the unique setting of the Hogback Basin Area?
2. Are there opportunities in the Hogback Basin area for dual-use skiing, i.e., for both alpine and nordic?
3. What are the potential impacts on the Goat Rocks Wilderness, in summer as well as in winter?

4. What are the physical and social impacts of development of trail and interpretive activities in the expansion area?
5. What are the physical and visual impacts on the Pacific Crest National Scenic Trail?
6. What is the economic viability of Ski Area expansion?
7. What are the opportunities to provide additional recreational activities? What are the needs, capabilities and opportunities available and what is their suitability? Including non-pay, non-groomed nordic skiing and summer and winter activities?
8. What are the physical and biological impacts?
9. Will there be additional hazards to skiers?
10. Will backcountry skiers be displaced? What will be the effects if they are displaced?
11. Are there additional backcountry skiing areas that can substitute for Hogback Basin?
12. What will be the visual impact from Highway 12? From the William O. Douglas Wilderness?
13. Will the present and proposed support facilities be adequate?
14. What will be the amount of local revenue generated?
15. What will be the social impacts of expansion on local communities?
16. What will be the impacts on wildlife habitat?
17. What will be the cultural and/or spiritual effects on the Indian Nations, including the Yakima Indian Nation, by expansion in Hogback Basin?

The ID Team then used this list to develop criteria for measuring impacts, to develop mitigation measures, and to formulate alternatives so each of these issues would be satisfactorily addressed.

## **COMPARISON CRITERIA**

The ID Team studied this Issues, Concerns and Opportunities list and selected the following five categories as being most important for comparing alternatives:

### **1. ADDITIONAL RECREATION OPPORTUNITIES**

Display the possibility of providing the appropriate mix of recreation activities (including alpine and nordic skiing) in the immediate areas as well as in surrounding areas. Consider summer and winter activities. The goal is to provide for a variety of activities in desired settings to the point that user-group conflicts can be resolved and other management objectives can be achieved.

### **2. UNIQUE SETTING**

Identify the unique elements of the Hogback Basin setting. Measure the effects of each alternative on these elements.

### **3. PHYSICAL AND BIOLOGICAL EFFECTS**

Identify the potential effects on the physical and biological environment. Assume mitigation measures are in place and display the expected consequences for each alternative.

### **4. WILDERNESS IMPACTS**

Identify potential impacts of each alternative on Wilderness, especially on the Shoe Lake and Miriam Basin areas. Wilderness parameters will be used to display these effects, i.e., visitor days/visits, numbers of encounters, levels of acceptable change, etc. Summer and winter impacts will be considered.

### **5. DISPLACED BACKCOUNTRY SKIERS**

Identify the amount of displacement that would occur with each alternative. Assess the effects of this displacement.

## **ASSUMPTIONS**

Several assumptions were made in the planning process. They apply to all the alternatives:

1. Sufficient alpine skier demand for novice and intermediate terrain exists to warrant expansion of alpine skiing facilities. Demand for nordic skiing also exists. Population growth will continue in the market area. Even with current participation levels more skiers visits can be projected. Providing additional facilities and opportunities will increase skier visits of both types.
2. Interest in developing and expanding skiing at White Pass will not diminish. Skiers desire expanded opportunities. White Pass Company wants to provide a quality skiing experience and to be more competitive in the skiing marketplace. Other ski areas in the market area have developed close to their capacities. Pressures for expansion will continue.
3. White Pass Company is financially able to proceed with additional ski development; and, as a long-time permittee, will be allowed to continue.
4. Opening either the Skate Creek Road or Cayuse Pass in the winter, is not essential for the viability of the White Pass operation. (This was originally considered as an issue. Opening these roads would improve access for Puget Sound skiers and help the competitive position of White Pass. But, since this decision would be made by other governmental bodies, it is independent of the development decision being made for White Pass.)

## **THE EIS**

### **CONTENT**

This Final Environmental Impact Statement describes the affected environment in the White Pass Company's proposed expansion, identifies seven feasible alternatives, including both the full development as proposed and the No Action (No Change) alternative; and, displays the environmental consequences of implementing each alternative.

The socio-economic conditions in the surrounding communities are displayed to the degree they were identified during the scoping and public involvement processes.

The ID Team, with input from specialists outside the team, conducted the environmental analyses comparing the impacts of the various alternatives. In addition, the professional input provided by the consultants hired by White Pass Company was thoroughly reviewed by Forest Service specialists. All physical, biological, economic and social factors pertinent to the decision have been considered in this systematic, interdisciplinary approach.

This Environmental Impact Statement fulfills the requirements of the National Environmental Policy Act (NEPA) processes in connection with the selection of an alternative for action on National Forests, and does not violate any state or local laws imposed for the protection of the environment.

### **CHANGES MADE BETWEEN THE DRAFT AND FINAL**

At the beginning of chapters II through IV, a brief discussion has been included listing the major changes, additions, or deletions made to that chapter of the DEIS.

Added to Chapter I are up-to-date use figures for the Ski Area, additional information concerning economic feasibility and demand projections based on the population growth for the market area served by the Ski Area, and several minor additions, deletions and corrections. A section describing other sites in White Pass's market area has been added, as well as a report of a ski industry-sponsored study of ski area use in the United States and the study's recommended national marketing strategy.

### **PUBLIC COMMENT**

The DEIS for the expansion of the White Pass Ski Area was released to the public in June, 1989. The public was given until August 31, 1989 to comment on it. Public comment was received both written, and in person at meetings held in Seattle, Yakima and Randle. This comment prompted the refinement of DEIS information and acquisition of additional data needed to complete the analysis.

A total of 497 written responses were received. Of these, 471 were from individuals, 2 were petitions and 24 represented views of user groups, agencies and organizations. Appendix D summarizes the substantive public comments, lists them and responds to each.

Comments about the DEIS have prompted the refinement of data in the DEIS and the acquisition of additional data needed to complete the analysis of the alternatives. The FEIS includes these changes, as noted above.

## **DECISION**

The material in this FEIS will lead to a decision. The decision to be made is, which of the seven alternatives presented (alternatives 1–7) will be approved for implementation.

The decision will authorize amendments to the White Pass Company, Inc., Special Use Permits, specify the conditions of the amendments, and provide a framework to carry out the decision.

Mitigation measures specified in this FEIS and in the Record of Decision (ROD) would be included as terms for an amended Special Use Permit. Special use permit provisions require protection of resource values. Administration of a special use permit is the responsibility of the District Ranger. Some of the mitigation measures described in this FEIS are specific design features that would be included as elements of the project design and would be subject to further Forest Service review and approval. Construction activities, post-construction operations, and use, would be monitored to insure that the mitigation measures specified are implemented. If these mitigation measures prove to be ineffective, replacement measures would be developed by Forest Service resource specialists and required to be implemented.

Mitigation measures specified in the FEIS and the ROD outside the jurisdiction of the Forest Service would require affected local, county, state and federal agencies to work together with White Pass Company, as appropriate, to insure that indirect impacts that could occur as a result of the expansion of the Ski Area are effectively mitigated. RCW 36.38.010 authorizes counties to enact an ordinance to impose an admission tax of not more than five percent of admission charges. Local governments could pass such an ordinance and the funds raised could be used to offset increased local costs incurred as an indirect result of Ski Area expansion (off-site development).

Alternative 2 (Improvements and Modifications of Existing Area) is the Environmentally Preferable Alternative. It corrects existing problems within the present Permit Area with little additional environmental impact. It also provides for enhanced summer opportunities in Hogback Basin and the potential for reducing Wilderness impacts in Shoe Lake Basin. However, this alternative does not provide additional ski area capacity.

Alternative 7 (Add Chair Lifts #5, #6 and #7 and Mid-Mountain Warming Hut) is the Forest Service Preferred Alternative. Additional physical and biological effects are considered to be within acceptable limits. Winter Wilderness effects would increase due to lifts in Hogback Basin. However, summer Wilderness effects, with the interpretive program, could be similar to Alternative 2. Alternative 7 provides the highest projected winter use, considering both alpine and nordic opportunities. The groomed trail nordic system north of the highway will be expanded. It is recognized that the unique setting of Hogback Basin will be diminished for some nordic skiers, while becoming available for alpine skiers.



## **AFTER THE EIS**

Preparation of an EIS is one step in the planning process. Decisions to be made by the Forest Service, as a result of the analysis in this EIS and other information, include whether National Forest System lands should be used for the requested activity and, if so, with what constraints. If a decision is made to issue an amended Special Use Permit, other steps will be required before any development can occur.

If an alternative is selected which permits skiing expansion, the Forest Service will issue an amendment to the current Special Use Permit to White Pass Company, Inc., but will require the company to agree to conduct the expansion in accordance with the Record of Decision and to have the financial capability to accomplish the expansion.

An amendment to the Permit would also require White Pass Company to prepare a detailed Site Development Plan, including a Development Schedule, to be approved by the Forest Supervisor, showing specific locations, construction details, and application of mitigation measures. Each construction activity would require an engineering technical report and/or a site-specific analysis for that project. If evidence is found of impacts that might be greater than estimated in the FEIS there would be ample opportunity to require further mitigation or, in an extreme case, to not allow the project.

## **OTHER PERMITS**

In addition to the Special Use Permit, various other permits and approvals would be needed to expand the White Pass Ski Area. They include:

### **For Yakima County:**

- sewage disposal permit

### **For Lewis County:**

- public water supply permits
- building permits
- sewage disposal permit ("alternate system" for mid-mountain warming hut)

### **For the State of Washington:**

#### **Department of Ecology:**

- water right permit
- waste discharge permit
- water quality certification

#### **Parks and Recreation Commission:**

- ski lift and equipment certification

#### **Department of Wildlife:**

- hydraulics project approval
- effects on T, E & S species of plants and animals

Department of Transportation

- access permit

Advisory Council on Historic Preservation

- cultural resource clearance

### **MONITORING**

After approval of the permits and acceptance of the detailed plans, the requirements established by the Forest Service would be monitored through annual operating plans that the White Pass Company would submit to the Forest Service for approval.

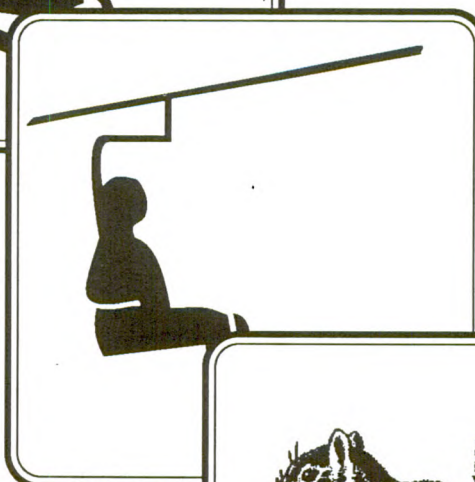
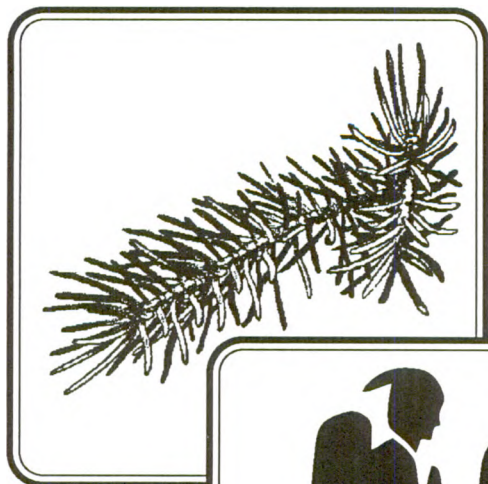
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# CHAPTER II

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## ALTERNATIVES



Development  
of Alternatives

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in Detail

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Comparison of Alternatives

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Preferred Alternative

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## CHAPTER II ALTERNATIVES

This chapter describes the process used to develop the alternatives; describes each alternative; lists management direction and mitigation to reduce adverse impacts; and, summarizes the impacts and effects of each alternative.

In accordance with Council of Environmental Quality (CEQ) regulations, this EIS identifies and analyzes a reasonable range of alternatives in order to provide the decision maker with a clear basis for choice. By CEQ definition, reasonable alternatives are those that eliminate or reduce the level of environmental impacts and are, at the same time, both technically and economically feasible and serve the overall purposes of the proposed action from a common-sense perspective.

### CHANGES MADE BETWEEN THE DRAFT AND FINAL

Summer direction alternatives 8(S) and 10(S) in the DEIS were incorporated into the winter development alternatives. Also, the modifications within the permit area (Alternative 2) were included in the other development alternatives, Alternatives 3–7. This allows display and selection of one complete alternative rather than a combination of partial ones. Alternative 9(S), the summer constrained alternative to meet Wilderness objectives, was dropped because planned mitigation measures met its intent.

Alternative 3 was modified to include nordic features. Proposed Chair Lift 7 would be used by cross country skiers to reach and leave Hogback Basin and the mid-mountain warming hut and a system of groomed and ungroomed nordic trails were added. Added to “Alternatives considered but not fully developed” is an explanation of why a pure cross-country ski development alternative for Hogback Basin was eliminated from detailed study.

The mitigation measures that were displayed in Chapter IV of the DEIS have been moved to Chapter II. In addition, further mitigation of the potential Wilderness impacts have been developed. Mitigation for the impact of trail use in Hogback Basin was added to reduce potential impacts on wildlife. A discussion of the probability of implementation and effectiveness of the mitigation measures was added at the request of the EPA. Some mitigation measures deemed not feasible were dropped, e.g., physical barriers between highway traffic and shoulder parking on Highway 12, and left-turn channelization are not feasible due to snow removal problems. Other mitigation was added, e.g., the WDOT recommendation to re-route Highway 12 around the Ski Area.

Added to each alternative is more detail on the action that would be initiated by the selection of that alternative. Alternative maps were modified to better display the spatial relationships among proposed runs, existing runs, and ungroomed terrain. Some maps were also modified to eliminate confusion. The relocation of a short section of the Pacific Crest Trail was dropped.

## **DEVELOPMENT OF ALTERNATIVES**

### **INITIAL STEPS – EA, SCOPING AND THE DEIS**

The process of developing alternatives began with the Environmental Assessment, and the scoping announcement for this EIS provided eight alternatives to be used as examples:

1. No Action
2. Build Chair Lift 7 and mid-mountain warming hut.
3. Build Chair Lift 5 and mid-mountain hut.
4. Build Chair Lifts 5 and 6, and mid-mountain hut.
5. Build Chair Lifts 5 and 7, and mid-mountain hut.
6. Build Chair Lifts 6 and 7, and mid-mountain hut.
7. Build Chair Lifts 5, 6 and 7, and mid-mountain hut.
8. Construct mid-mountain hut and develop cross-country ski trails in Hogback Basin area.

The public, interested groups, and government agencies were asked to comment on these alternatives, to suggest additional alternatives, and to identify significant issues to be addressed in the EIS.

As described in Chapter I, the 197 public responses received during the scoping period were analyzed and evaluated and the ID Team developed the list of significant issues, concerns and opportunities shown on pages I-43, 44. This list was the basis from which the ID Team formulated the seven winter development alternatives and three summer management alternatives presented in the DEIS. Those ten provided a range of options that responded to the issues identified. After the public comment on the Draft EIS and further Forest Service analysis, the ten alternatives were combined into seven and these seven will be compared in this Final EIS.

### **ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED STUDY**

NEPA (National Environmental Policy Act) regulations require that agencies rigorously explore and objectively evaluate all reasonable alternatives and briefly discuss the reasons for eliminating those not developed in detail. In addition to the ten alternatives studied in the DEIS, which are now seven in this FEIS, seven others were considered:

**1. Expand White Pass Ski Area by building Chair Lifts #6 and #7**

This alternative was one of the example alternatives included in the scoping documents. It was not studied in detail because it is not practical. This expansion would essentially split the Ski Area in two. It would be very inconvenient to get skiers, especially beginning and intermediate skiers, to Chair Lift 6, and just as inconvenient to get from the bottom of Chair 6 back to the existing area.

**2. Build no chair lifts in Hogback Basin but provide snow cat skiing in the Basin**

Skiers would use existing chair lifts to the top of Pigtail Peak then be transported to Hogback Ridge by snow-cat. This alternative would provide opportunities in Hogback Basin for some alpine skiers, more backcountry skiers, and possibly groomed-track skiers. There are limits to access by snow cat and they are generally used only to promote an area. Plus, using them would impact the Basin's present non-motorized setting and would not accommodate the access needs of most alpine skiers. This alternative was not developed because it is not considered economically feasible.

**3. Expand White Pass Ski Area into areas other than Hogback Basin**

This alternative would leave Hogback Basin undeveloped but would provide additional alpine skiing by expanding elsewhere, such as into two areas mentioned by the public, Miriam Basin and the Twin Peaks area to the east. Miriam Basin was considered for development in White Pass Company's 1979 Master Plan but is within the Goat Rocks Wilderness. The slope to the east also runs into the Wilderness and development would impact the Pacific Crest National Scenic Trail.

Areas with terrain suitable for alpine ski development in the vicinity of White Pass and adjacent to the present and proposed permit boundaries are in the Goat Rocks or William O. Douglas Wildernesses. The 1964 Wilderness Act prohibits commercial development or study for commercial development in areas designated Wilderness. (The only way this classification can be changed is by an Act of Congress. The preparers of this document cannot predict what Congress may do in the future.) So, due to their legal Wilderness classification, these areas are unavailable for commercial use or study. This is reflected in the Wenatchee National Forest's Wilderness Standards and Guidelines in the Forest's Land and Resource Management Plan.

**4. Provide additional expansion within the White Pass Company Permit Area**

White Pass Company does propose some modifications and improved facilities within the existing permit boundary. These are displayed in Alternative 2. Other developments suggested were adding a chair lift to the north of existing Chair Lift 4 or on the northwest side of Pigtail Peak.

Additional lifts at the top of the existing area would have to be short, and therefore uneconomical, or they would start below the cliff line and be a mix of intermediate and advanced terrain which would create additional bottlenecks and safety problems for



intermediate skiers. [See the physical description, page 309.] Development within the existing Permit Area, beyond what is proposed in Alternative 2, is not considered feasible due to these adverse impacts and terrain constraints.

##### 5. Alternate locations for the Mid-Mountain Warming Hut

Problems with the proposed location for the mid-mountain hut (wet area, visual considerations, etc.) came up during the scoping period. Some respondents suggested the site be changed. First, the proposed location [see Alternative 7 Map, Fig. II-7W) was chosen to serve existing Chair Lifts 1, 2 and 4 and also possible future lifts 5, 6 or 7. Moving to other locations, e.g., closer to Pigtail Peak, would not meet these objectives. Second, the location presented is conceptual; procedures for determination of the exact site and the protection measures that would be required in case of construction, are included in the management requirements and mitigation measures listed later in this chapter and would be subject to subsequent analysis and decisions.

##### 6. Serve increased skier demand by expanding other existing Washington State ski areas, or developing new areas

With this alternative no expansion would be made at White Pass. Other ski areas within the Market Area would accommodate increased skier needs. If no expansion were to be allowed at White Pass, the impact on the White Pass area would be described under Alternative 1 (No Action) in the FEIS.

The other existing ski areas within the Market Area are Snoqualmie Pass areas (Alpental, Hyak, Ski Acres, Snoqualmie Summit), Crystal Mountain, Mission Ridge, Stevens Pass and Ski Bluewood. Most of these areas are nearing their development potential and, as discussed in Chapter I (pages I-21 ff), the ski industry is changing to meet new skier demands. White Pass Company has applied to provide increased skiing opportunities and to improve its competitive position. Also, Congress provided direction in the 1984 Washington State Wilderness Act Record to manage the proposed expansion area for its potential for ski development "in accordance with applications, rules and regulations."

In 1970 the Forest Service made a survey of winter sports in Washington ("North Cascades Winter Sports Study," USDA Forest Service, 1970). Sixteen sites were inventoried and 13 were studied. Of those studied, only three sites were rated as having "good" potential, and of these three only Sandy Butte (site of Early Winters development) was "considered to have the necessary physical features for a site of major importance." In that study, development of new areas was third in priority for meeting increased skiing demand, behind (1) full development of existing, close-in sites and (2) development for other winter sports (i.e., ski touring, snowshoeing and ski mountaineering).

Since the "North Cascades Winter Sports Study" was completed there have been numerous opportunities for additional proposals to surface. None have. The potential for winter sports sites was considered when Forest Plans were developed and no new sites were inventoried. The only site mentioned in either plan is the Dardanelles site east of

Stevens Pass. The FEIS for the Wenatchee National Forest Land and Resource Management Plan states, "The Chiwaukum Mountains in the vicinity of the Dardanelles on Highway 2 is the most promising potential ski area that has been inventoried. If this potential is pursued, it would be subject to thorough environmental analysis as required by the National Environmental Policy Act. The analysis would include full public involvement."

After considering the potential for expansion at other existing areas and identifying no new potential sites the Forest Service affirms that the focus on expansion at White Pass is appropriate. It should be noted, however, that even with expansion at White Pass demand for skiing facilities may not be fully met in Washington. The Forest Service role will be to concentrate on the supply of facilities as provided through land planning processes. A decision to expand facilities at White Pass will not preclude new facilities or expansion at other areas.

#### 7. Develop Cross Country Skiing in Hogback Basin

This alternative would emphasize nordic skiing and would provide for a groomed and ungroomed cross-country ski trail system in the Hogback Basin area. Day touring, telemarking, snowshoeing and winter camping would be possible and backcountry skiing in the Basin and in the areas beyond would be available. A warming hut would be constructed to facilitate the social, safety and convenience needs of the cross-country skier.

An alternative that encourages additional beginner and intermediate level nordic skiing in the Basin by trail grooming, signing and construction of a warming hut would cause major ski traffic problems, congestion and the mixing of high numbers of nordic and alpine skiers within the existing Permit Area.

The only feasible access to Hogback Basin for nordic skiers is by chair lift. Climbing the 2,000-foot vertical rise from the highway to the top of Hogback Basin is not practical for most skiers. Also, the ramps would be a problem. They are steep; beginning and intermediate nordic skiers would have trouble using them. Lift speeds would need to be radically reduced for them to get off.

Getting large numbers of beginning and intermediate nordic skiers back to the highway would also be a problem. Downloading large numbers of skiers with Chairs 1 and 2 is not acceptable to the company. All existing runs pass through the steep cliff area part way down the hill. This would be a dangerous challenge for average nordic skiers to maintain control. Most would choose to ski down the wider Paradise run from the base of Chair 4, then follow the cat-track runs to the base area. Mixing skiers on these cat-track runs would create a major safety problem for all skiers. A new run could be developed to the east, but it would still have to negotiate the steep cliff area.

Development of groomed trails in Hogback Basin would require building roads to provide a base, on a moderate grade, for the trail system and for grooming equipment. The ID Team did not feel that this disturbance was acceptable due to the soil and vegetation impacts it would cause. Keeping the tracks satisfactorily groomed at this elevation would also be difficult.

Skier safety is best served where the majority of alpine and nordic skiers are entirely separated. An expansion of the ski trail system north of the highway better meets the safety objective. Current information indicates the largest demand and projected growth for nordic skiing is for groomed-track skiing. All alternatives except Alternative 1 expand the groomed trail system in the northern Permit Area.

All alternatives provide for some nordic skiing in the Basin. Alternatives 1 and 2 continue what is there now. It is not causing safety or management problems and the skiers who have the skill to backcountry ski would continue there. The level of alpine/nordic ski mixing would continue to be acceptable. Several alternatives increase Basin access and improve the nordic skiing for those who desire skiing on established, but ungroomed trails.

Alternative 3 meets the majority of the objectives of this proposed alternative, therefore, this one was not studied in detail. In Alternative 3, groomed and ungroomed trails would be provided in the Basin, as well as a warming hut. Access would be provided by Chair Lift 7. The problems with the existing lifts and the existing runs would be resolved and this lift would be designed to handle both nordic and alpine skiers. Downloading on it would be allowed, which would eliminate the problem of mixing alpine and nordic skiing on the ski runs.

#### **MANAGEMENT CONSIDERATIONS COMMON TO ALL ALTERNATIVES**

There are certain objectives, assumptions and management directions that apply to all alternatives studied in detail. The assumptions are listed in Chapter I. Considerations and objectives are set by law, regulation, policy, or higher order management plans.

#### **OBJECTIVES**

Several key objectives that apply to alternatives in this EIS are:

##### **FSM-2303, Recreation Policy**

- Encourage compatible off-season use of recreation areas.
- Where feasible and economic, shift management of high-cost, highly developed, or non-traditional areas or facilities to other governmental and/or private entities, if the public will be well served.

##### **FSM-2343.03, Policy**

- Issue prospectuses to solicit proposals for development of concession sites, when it is in the public interest or when competition exists or may be created. Give existing concessionaires an opportunity to expand their operations to meet increasing public needs before offering new sites for development.
- Give priority to developments offering moderately priced accommodations and services as opposed to luxurious accommodations and services affordable only by the affluent.
- Encourage year-round recreation use at privately developed concession sites.

**FSM-2343.11. Policy**

- Encourage summertime use of ski area facilities where that use is compatible with or enhances natural resource-based recreation opportunities and does not require additional specialized facilities. Insure that holders provide for development of facilities and protection of environmental values as an integral part of the development plan for the area.

- Encourage privately operated nordic ski touring centers.

- Allow holders to charge for the use of permitted trails when they make capital investments or incur expense directly for trail maintenance, grooming, and patrolling. Do not allow holders to charge for use of National Forest land where they have made limited or no investments or provided only limited trail services.

- Plan for development of new winter recreation sites or expansion of existing sites in such a way that the location of ski runs, trails, lifts, and other facilities avoids terrain inherently prone to frequent and extensive or severe avalanche activity.

**MANAGEMENT GOALS**

Applicable goals from Land and Resource Management Plans include:

**For Developed Recreation:**

- Provide safe, well-maintained, developed facilities for the public's enjoyment. (Wenatchee National Forest-WNF)
- Provide safe, well-maintained facilities for developed recreation within a range of development levels. (Gifford Pinchot N.F.-GPNF)

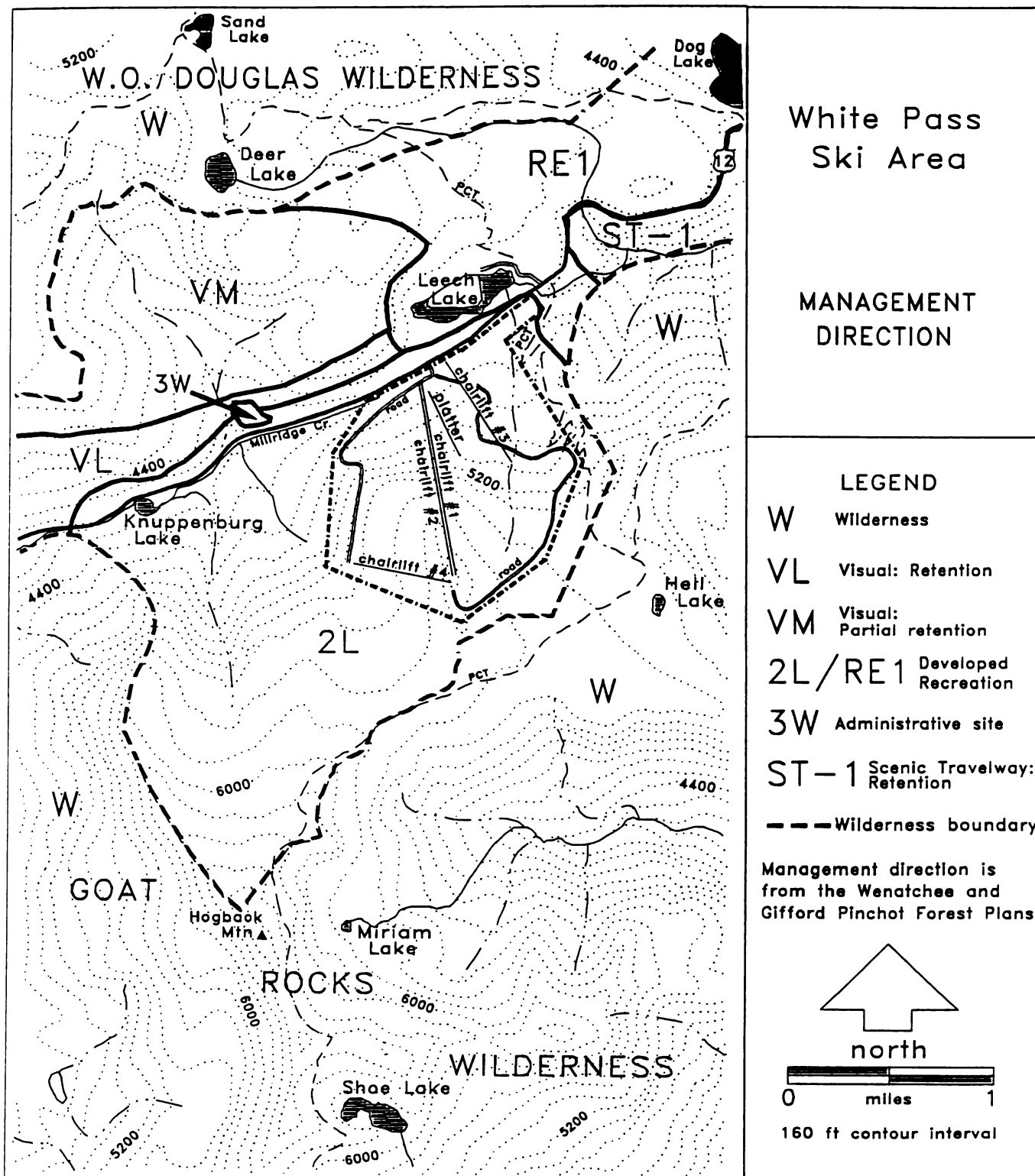
**For Dispersed Recreation:**

- Provide a diverse range of dispersed recreational, interpretive and educational opportunities. (GPNF)
- Provide for a variety of dispersed motorized and non-motorized recreational opportunities and experiences. (WNF)

**For Wilderness:**

- Manage designated Wildernesses to preserve and protect the Wilderness character in accordance with the Wilderness Act of 1964, and the Washington State Wilderness Act of 1984. (WNF and GPNF)
- Provide a spectrum of opportunities for Wilderness recreation featuring a natural environment, solitude, physical and mental challenge, and inspiration, consistent with preservation of Wilderness values. (WNF)
- Preserve naturalness and provide opportunities for solitude, challenge and inspiration. Recreational, scenic, scientific, educational and historical uses will be encouraged consistent with the need to maintain these attributes. Conflicts will be resolved in favor of preserving and protecting Wilderness values. (GPNF)

FIGURE II-A



## MANAGEMENT DIRECTION

In order to accomplish certain objectives or ensure that specific results are achieved, standards and specifications have been developed in the form of management direction. In order to minimize or rectify various project-related impacts, certain mitigation measures have also been identified. While some theoretical distinctions between management and mitigation can be made, in practice they often overlap. Their enforcement occurs as a part of the District Ranger's administration of the Special Use Permit, during both construction and operation of the facilities. Management directions for this area are shown in Figure II-A.

Management actions are guided by Standards and Guidelines for each management area. They would help reduce possible adverse impacts of any action taken and are assumed to be in place when the consequences are assessed. Management Standards and Guidelines for the study area are found in the *Wenatchee National Forest Land and Resource Management Plan* and the *Proposed Gifford Pinchot National Forest Land and Resource Management Plan*.

Congress also prescribed management direction for the 800 acres deleted from the Goat Rocks Wilderness. The Senate Report on that action noted that this area has "significant potential for ski development" and it was Congressional intent that the area should be managed "to utilize this potential..."

## MITIGATION

The following mitigation measures are designed to reduce or minimize the potential adverse effects identified in the scoping process and during the development of the action alternatives. It should be noted that (1) additional requirements may be added, and (2) requirements may be revised later as maintenance and/or construction methods change.

### AIR QUALITY

The greatest impacts to air quality occur on peak use days with adverse atmospheric conditions, i.e., air temperature inversions. To mitigate air quality impacts the following measures are recommended:

1. Restrict the use of wood-burning devices during stagnant air periods.
2. Encourage car pooling and the use of buses to get to the Ski Area.
3. Encourage users not to let their vehicles warm up for long periods prior to leaving the ski area.

### EFFECTIVENESS OF MITIGATION

Restricting the use of wood-burning devices would be effective and has been effective in other localized areas in reducing the impacts on air quality during certain atmospheric conditions. The probability that that this measure would be implemented is high, because of state and local regulations.

Car pooling and the use of buses would require cooperation, and acceptance by the user that a problem does exist and that they can help reduce the impacts on air quality. The

effectiveness would be moderate. The probability that these measures would be encouraged is high.

Idling emissions are a significant portion of the air quality impacts as modeled. Reducing the length of time a vehicle idles would reduce concentrations of carbon monoxide emissions and the mitigation could be highly effective. However, no studies of this measure are known.

### **SOIL AND WATER**

To avoid the potential effects of erosion and sedimentation, all fresh construction cuts into soil and rock materials would be seeded, revegetated, and/or covered with erosion control blankets. Road and catchline grades should be kept to an absolute minimum to avoid accelerated downhill water movement. The roads should be outsloped and the surfaces immediately treated. Dr. Glen Klock (in "Mission Ridge—A Case History of Soil Disturbance and Revegetation of a Winter Sports Area Development," 1973) recommends the following measures.

1. Stockpile and redistribute topsoil after the final grading of slopes.
2. Select plant species to be seeded carefully. Native species should be considered over introduced species.
3. The soil should be tested for fertility to determine the need for fertilizer. If total nitrogen is greater than or equal to 0.2%, nitrogen is not needed.
4. Due to the short summer season typical at ski areas, plantings should be made immediately following the soil disturbance. They should not be delayed until after precipitation and wind have caused crusting of the soil. Irrigation may be helpful.
5. Apply a shallow cover of soil over the newly planted seed and fertilizer.
6. Apply mulch to maintain desirable moisture content.
7. Limit the number of recurring soil disturbances. (Do the job right the first time.)
8. Monitor plantings for two growing seasons to determine their effectiveness. It takes two years before erosion control measures can be effective.
9. Periodically apply fertilizer to the plantings (every two to three years).

Protection from geologic hazards in the location and design of the catchline road would follow the recommendations of Brazil and Wooten in "A Geotechnical Assessment of the White Pass Proposed Expansion," November, 1985.

### **EFFECTIVENESS OF MITIGATION**

The likelihood of the soil and water mitigation measures being implemented is high. Development plan approval would be based on the inclusion of these mitigation measures. During the construction phase, close adherence to the project plans, through careful permit administration, would insure implementation. Therefore, the probability that these mitigation measures would be implemented is high. Once ground vegetation is re-established the effectiveness of these mitigation measures is high. The mitigation measures recommended by Klock (1973) were developed through research and application at the Mission Ridge Ski Area. They have been effective there. However, this effectiveness is

somewhat at the mercy of the weather. If a major storm event occurred between the time the ground was bared and re-establishment of vegetation (80% cover), soil erosion and degradation of water quality (short-term) would likely also occur. This underscores the importance of immediately protecting exposed soil with mulch or erosion control blankets.

## WILDLIFE AND FISH

### WILDLIFE

Locate summer trail system to avoid key use areas such as mineral licks, wallows, escape cover, calving and fawning, etc. Location should be done in consultation with the biologists. Biological evaluation needed would be accomplished before making decision on site-specific construction.

Control season of use of trails where necessary.

Various agencies involved continue to coordinate winter range strategies and needs and to consider the possible impacts of accelerated development of private lands.

### Northern Spotted Owl

Maintain narrow necks of not over 90-100 feet wide in runs to facilitate owl movement and their use of appropriate habitats.

Do additional surveys during site-specific project planning for areas that could be impacted by Chair Lift 7 and additional parking on the east side of the Permit Area.

Request further consultation with the Federal Fish and Wildlife Service. Project implementation will comply with the Endangered Species Act (PL 93-205).

### Larch Mountain Salamander

Make site-specific reconnaissance in the talus areas that exhibit the species' preferred habitat and that would be directly impacted by road construction, timber removal or placement of lift towers.

### California Wolverine

Inventory for wolverines within five miles of this project before increasing winter activities.

### North American Lynx

Inventory habitat within the project area, inventory for lynx within five miles of the project area, and prepare an Effects Statement before implementing Alternatives 3, 6 or 7 involving construction of Chair Lift 7.

### FISHERIES

All sewer systems will meet current state standards.

Require logging of runs for Chair Lift 7 to use techniques to minimize ground disturbance. Allow logging only during the time of the year appropriate for minimizing erosion potential (over snow or during periods of dry soil).



Seed or treat exposed areas immediately following disturbance to minimize accelerated surface run-off and subsequent erosion. (Also see construction mitigation sections: under "Recreation" for chair lift facilities, "Public and Support Systems" for buildings and utility lines, and "Transportation" for roads and trails.)

Consider the effects from possible increased fishing use when working with the state Department of Fisheries writing future fishing regulations for Leech and Knuppenburg Lakes.

#### EFFECTIVENESS OF FISH AND WILDLIFE MITIGATION

With the possible exception of the development of future fishing regulations considering potential increased fishing pressures, the Wildlife and Fish mitigation measures discussed above have a high probability of implementation. The probability that future fishing regulations for Leech and Knuppenburg Lakes would consider the impacts from increased fishing pressure is moderate. Other agency involvement is required. The continuation of agency coordination relating to big game range strategies is very likely to occur. The effectiveness of the mitigation measures is generally thought to be high.

#### VEGETATION AND TIMBER

Require logging techniques that minimize ground disturbance when clearing runs for Chair Lift 7 (helicopter, skyline or over-snow yarding). Logging would occur during the appropriate time of the year to minimize erosion potential. (See also soil mitigation, above.)

Dispose of logging slash in a manner that considers ski grooming needs, visual quality objectives, air quality protection, and soil protection measures. May include total removal, lopping and scattering, and burning.

Require prompt revegetation of cleared ski runs. Also see mitigation for construction projects.

#### EFFECTIVENESS OF MITIGATION

Logging methods such as helicopter, skyline or over-snow yarding are highly effective in minimizing erosion potential. The probability that this mitigation measure would be implemented is high. Slash disposal methods that consider ski grooming needs, visual quality objectives and air quality and soil protection would be included as provisions in the timber sale contract for the clearing of the runs. The probability that this mitigation measure would be implemented and be effective is high.

#### SOCIAL AND ECONOMIC:

Ski Area management, local governments, other local business and the Forest Service, keeping in mind the number of possible actions available to local governments, work together to recognize or foresee impacts on the community and to correct them if possible, if alternatives that favor expansion are implemented.

(Current Forest Service policy directs [Forest Service Manual 3610.3]: "To the extent possible, respond to and support state and local requests and concerns for solutions to problems in rural areas. Seek opportunities to develop forest-based enterprises and forest resources that contribute to rural growth. All programs shall contribute and lend support to

other public and private agency efforts to provide public services, income, jobs, and amenities in rural areas through planning, resource management, economic development, and manpower programs.” In December, 1989, the Chief of the Forest Service reiterated the Forest Service’s rural development efforts. The task force has produced a draft revised policy on rural development, which is: “The Forest Service will provide conservation leadership in working with rural people and communities on developing forest-based enterprises and natural resources that contribute to the economic and social vitality of rural communities. The Forest Service can make lasting improvements in rural America by helping them solve their problems.” Forest Service goals include the active participation in planning and implementing community-based rural development activities, and including rural development considerations in agency resource decisions to assist rural communities and the Nation achieve long-term economic development and improved quality of life.)

#### EFFECTIVENESS OF MITIGATION

The probability that this mitigation would occur to the extent needed to foresee potential effects of Ski Area expansion is high. With proper planning, local governments will find themselves in the position to react to the effects as they happen. With proper planning, the effectiveness of this mitigation measure would be high.

Communities and local merchants both east and west of White Pass have been kept fully informed of the proposal and the probability of their providing additional services and benefiting financially from the expansion is high.

#### VISUAL RESOURCES

Maintain vegetative screen between Highway 12 and the base facilities for Chair Lift 7 (Alternatives 3, 6 and 7).

To the degree possible, feather edgelines of clearing for Chair 7 lift line and ski runs. Use landscape architects’ skills when planning clearings.

Use unobtrusive colors for facilities.

#### EFFECTIVENESS OF MITIGATION

The likelihood that landscape architect skills would be utilized in project design is high. The methods employed by landscape architects are usually highly effective in reducing the impacts to the visual resource by blending facilities and ski runs into the natural landscape. Landscape architect skills have been used at several areas throughout the west, including Mission Ridge and Crystal Mountain in Washington and the many ski areas in Colorado. Where they have been used, the landscape modification that occurred was very acceptable. However, some disruption of a small area of the natural-appearing landscape would occur immediately adjacent to Highway 12 at the base of proposed Chair Lift 7 and the effectiveness of landscape architecture in that area would be moderate.

#### WILDERNESS

Develop summer and winter baseline use and impact data for the Wilderness (Shoe Lake and Miriam Basins) in order to monitor and evaluate use from the Ski Area. Other aspects of

mitigation of Wilderness impacts are covered under “Transportation,” “Trails” and “Recreation.”

Wilderness visitor use would continue to be estimated during both winter and summer use periods. Physical, biological and social Wilderness resource indicators would also be monitored periodically (annually at first, with three- to four-year intervals later), to determine if Limits of Acceptable Change (LAC) standards are being approached or exceeded. Significant increases in visitor use following implementation of the selected alternative could indicate that management efforts might need intensifying to better disperse use.

Wilderness resource attributes differ somewhat between the winter and summer seasons. In winter, soil and vegetation impacts are of less concern due to the snow cover. However, in areas of high user concentration, sanitation and litter can be a greater concern on snow. Social conditions, crowding, and impacts on solitude, are concerns in both summer and winter.

#### WINTER WILDERNESS MITIGATION

Manage skiers along the boundary of the Ski Area to help reduce impacts on Wilderness resources by providing one exit point on Hogback Mountain for skiers to leave the area.

Locate the upper terminal for Chair Lifts 5 and 6 below the top of the ridge into Hogback Mountain to discourage skiers from skiing out into Wilderness.

If monitoring of social encounters and group size during the winter indicated that social standards for LAC are being approached or exceeded, management actions would be implemented to decrease impacts. These could be both regulation of users by the Ski Area and administrative action by the Forest Service. Examples of potential actions include, but are not restricted to:

- Educating visitors in Wilderness use ethics.
- Providing information on crowded conditions and alternative locations for winter recreation.
- Increasing enforcement of existing regulations.
- Issuing new regulations such as closure of Miriam and Shoe Lake Basins to winter camping.
- Restricting skiers who ride the lifts for skiing only within the Ski Area.
- Limiting numbers of skiers-at-one-time in Miriam and Shoe Lake Basins.

#### SUMMER WILDERNESS MITIGATION

Monitor Goat Rocks Wilderness use in the Hogback Mountain, Miriam Lake or Shoe Lake areas, or other areas. Recreation activities made available within the Ski Area can be expected to hold many recreation visitors outside of the Wilderness. However, increased exposure to the scenic qualities of the area may increase visitor use in the Wilderness above current levels. If standards for LAC are being approached or exceeded, management actions would be implemented to reduce impacts. Examples of potential actions include, but are not restricted to:

- Educating visitors in Wilderness use ethics.

- Providing more information on resource conditions and other recreation opportunities.
- Increasing enforcement of existing regulations.
- Encouraging users of the Chair Lift to participate in recreation opportunities within the Ski Area.
- Restricting the number of visitors the Ski Area can transport to access areas in Wilderness.
- Discontinuing use of the Chair Lift in the summer for recreation access to Pigtail Peak and the PCT.
- Establishing quotas and limiting trips to Wilderness with mandatory permit system.

Management actions designed to reduce user impacts during winter and summer season would be implemented gradually, with the degree of restriction increasing until resource conditions stabilize or improve. The least restricting actions would be implemented before more restrictive ones. User quotas or restrictions of users to areas within the Ski Area boundary would be measures of last resort.

#### EFFECTIVENESS OF MITIGATION

The development of a summer and winter Wilderness use monitoring program is contingent on funding. With the current and expected continued emphasis on recreation throughout the Forest Service, the probability of funds being available for a monitoring program is high and the probability of a monitoring and management program being implemented is also high. The effectiveness of the monitoring program in identifying effects is moderate to high. Monitoring would probably consist of random visits to determine if the number of encounters exceeds guidelines for Wilderness.

If Wilderness guidelines for encounters are exceeded as a result of activities related to the Ski Area, appropriate administrative action would be taken to reduce the impact. Action could include a Wilderness permit system. The permit system for the Enchantment area of the Alpine Lakes Wilderness on the Wenatchee National Forest has been very effective in reducing impacts there. The effect is positive and user acceptance has been good. The probability of administrative action being taken to reduce Wilderness effects is high. Enforcement of the administrative action and general acceptance and compliance with the rules are factors that affect the potential effectiveness of the mitigation. Based on the Alpine Lakes experience, the effectiveness of the administrative action in eliminating the impact is high. Project design and facility location which consider minimizing visual impacts to Wilderness would be used and their effectiveness is considered to be high.

#### RECREATION

##### WINTER RECREATION

Restrict snow grooming to some areas of the Hogback Basin area (see Alternative maps, Figures II-1W through II-7W) to retain some of its unique setting for backcountry nordic skiers. The dispersed nature of the proposed lifts would allow retention of some elements of the backcountry setting.

Require electric-powered lifts to reduce noise and paint all towers and chairs with a non-reflective color blending with the area (e.g., dark olive as discussed in Chapter III) to help maintain the appearance of the backcountry setting by making these facilities less conspicuous.

#### EFFECTIVENESS OF MITIGATION

The probability that snow grooming would be restricted to certain areas of Hogback Basin is high as this can be included as a Special Use Permit clause. White Pass would only groom 25 to 35% of Hogback Basin. The rest of the Basin would not be groomed. However, the effectiveness of this mitigation is low. The attributes of Hogback Basin which backcountry skiers currently consider unique, such as solitude, would generally not be mitigable. However, the probability of easier access to other unique winter recreation opportunities with expansion into Hogback Basin is high.

The probability that administrative action would be taken as a response to potential impacts that exceed the Limits of Acceptable Change is high. The effectiveness of this action is moderate, depending on public acceptance. Control of visitor numbers has been effective in other areas.

#### SUMMER RECREATION

When an alternative that includes the development of the Basin trail is implemented, the following mitigation would be required:

Locate the Hogback Basin Interpretive Trail away from the Pacific Crest Trail to discourage additional use on the PCT and into the Goat Rocks Wilderness. The location should traverse through the natural diversity of the Basin and needs to include the spectacular views and panoramas.

Emphasize Wilderness management objectives in the interpretive program. These would be communicated through naturalist contacts and programs, signing and brochures.

Modify the White Pass summer program to bring the Wilderness impacts within acceptable limits if monitoring of the Wilderness shows unacceptable impacts attributed to it.

Regulate and schedule use of the developed roads and trails by runners from the running camp at White Pass to avoid conflict with the general public using the area.

Restrict bicycle riding to developed roads in the existing Permit Area to avoid conflict, and potential hazard and disturbance, with hikers using developed trails in Hogback Basin.

Restrict horseback use of the Hogback Basin trail during times of heavy hiker use of the trail.

Continue the interpretive/naturalist program as a partnership between the Forest Service and the White Pass Company with one of its goals being to decrease Wilderness impacts.

Most of the naturalist contacts, programs and signing that emphasize Wilderness management objectives will be done in the Rural and Roded-Natural or Roded-Modified settings of the Basin. With development, the ROS class in the Basin would become Roded-Natural.

**EFFECTIVENESS OF MITIGATION**

The probability of these mitigation measures being implemented is high. The Forest Service and the White Pass Company have already entered into an interpretive/naturalist partnership. The effectiveness of this mitigation would also be high. The interpretive trail would give White Pass trail users and chair lift riders a destination outside Wilderness. The spectacular views from the interpretive trail would draw people away from the PCT and thus from the Wilderness. This mitigation, along with the measures described above for Wilderness, would contribute to the reduction of Wilderness impacts.

The probability that administrative action would be taken in response to potential impacts that exceed the Limits of Acceptable Change is high. The effectiveness of this action is moderate depending on public acceptance. Public cooperation has been good in other areas when visitors were educated as to the purpose of the action. The interpretive program will assist in getting the reasons across to the public.

**TRANSPORTATION****HIGHWAY**

Encourage ski bus use from Yakima and Packwood and other urban areas to reduce total traffic.

Reroute the highway to the north around the back of the condominiums. The current highway surface and parking area would become the parking area for the Ski Area and through traffic would pass around it. Access to the highway would be controlled with a minimum number of access points. Using the old highway for parking would eliminate some of the need to provide additional parking near the Yakima Valley Ski Club. The Washington State Department of Transportation (WDOT) would be the lead agency for the project.

Until that mitigation can be completed:

- Designate bus parking where the buses will not obstruct the view of highway traffic from the parking lots.
- Provide additional off-highway parking.
- Expand chain-up areas

**EFFECTIVENESS OF MITIGATION**

Re-routing Highway 12 around the Ski Area, as suggested by the WDOT, would solve many of the current problems at the Ski Area and potential ones that could occur with expansion. The uncontrolled nature of traffic entering the highway from parking areas would change with a minimum number of controlled access points to the highway. The effectiveness of this mitigation would therefore be high. The probability that the highway would be re-routed is dependent on WDOT priorities and funding. That probability is high; preliminary discussions among the WDOT, the Wenatchee and Gifford Pinchot National Forests, and the White Pass Company have taken place. (This potential highway relocation would be covered by a separate analysis.) The probability that more controlled, orderly parking would occur with expansion is high.

### ON-SITE ROAD CONSTRUCTION

To avoid the potential effects of erosion and sedimentation, require all fresh cuts into soil and rock materials be seeded, revegetated, and/or covered with erosion control blankets. (See Soil and Water mitigation, above.)

Keep road and catchline grades to an absolute minimum. The roads should be outsloped and the surfaces immediately treated.

Limit construction equipment to the road prism or to specifically-approved parking sites. Allow only Forest Service approved motorized equipment off the roads and on snow-free ground in the Hogback Basin area. Allow no roads up lift lines and restrict the use of and the type of equipment on a case-by-case basis.

Implement dust abatement measures, should conditions warrant. Strictly enforce smoke management procedures if slash is to be burned. Where visually acceptable and where satisfactory for operations, lop and leave slash on the ground to prevent erosion.

Refuel and change crankcase oil only at approved, environmentally non-sensitive areas. Dispose of used motor oil off-forest. Require prompt cleanup of all construction debris.

Require Forest Service approval for location and design of all roads before construction. The objective is to minimize physical and visual impacts.

### EFFECTIVENESS OF MITIGATION

Road construction activities on National Forest lands are generally very controlled by the road construction contracts. The mitigation measures associated with the on-site construction of roads are all standard environmental protection contract clauses which would be incorporated into direction to the permittee. The probability of these measures being implemented is high. With strict contract administration, their effectiveness is high.

### CHAIR LIFT CONSTRUCTION

Hand dig tower foundations to reduce the area disturbed with topsoil saved and replaced and excess material scattered. Seed or revegetate disturbed soils immediately. (Also see soil mitigation section, above.) Forest Service will approve the type of ground transportation vehicle to be used, and will approve its use on a tower-by-tower basis.

Require helicopter installation for lift construction, with helicopters restricted to areas outside Wilderness. Allow no flights during high-use weekends and holidays.

Disturb as little vegetation as possible in Hogback Basin. Leave as many trees as possible under the lift lines, while still meeting safety requirements. Add no additional lines to the visual landscape. Removing conifer invasion of glades would be allowed with prior approval, but removal of trees to approved disposal sites would be required. No re-contouring of slopes for ski runs would be permitted in the Basin.

Minimize impacts on the visual resources as seen from Highway 12 and the William O. Douglas Wilderness by using perspective plot techniques for planning Chair Lift 7 and associated runs. To the degree possible, feather the edges of cut lines to soften the edge effect.

Use logging methods that do not disturb ground or duff. On steep slopes, lop the slash and leave it to break the flow of water. Flush-cut trees, with stumps left in the ground to "bind" the

soil. Logging operator would meet all fire requirements, such as spark arrestors on equipment and shutdown periods.

Require Forest Service approval for specific locations for upper towers of Chair Lifts 5 and 6. Care must be taken to prevent dropping skiers too close to the area boundary in order to reduce impacts on the PCT and to provide efficient access to the ski runs.

Paint all towers and terminals a color blending with the area, e.g., dark olive as discussed in Chapter III, page III-45.

Require underground power lines and electrically-powered lifts.

#### EFFECTIVENESS OF MITIGATION

The use of helicopters for the installation of chair lift towers is a common practice at ski areas. The probability that this method of tower installation would be used and its effectiveness in reducing ground disturbance, is high.

Digging tower foundations by hand greatly reduces the impact on the soil compared to excavation by mechanical equipment. The effectiveness of this mitigation measure is high. The likelihood that this method of excavation would be used is high. Tower foundations for Chair Lift 4 (1984) were dug by hand. Location of the upper towers for Chairs 6 and 7 would consider the visual impacts as viewed from the Goat Rocks Wilderness and the Pacific Crest Trail. The placement of the upper terminals will also have a bearing on the ease of access to the Goat Rocks Wilderness. Whether this mitigation is effective in reducing impacts on the Wilderness is dependent on skiers obeying Ski Area boundary markers. Some use of Miriam Basin by skiers would probably occur regardless of where the upper lift towers would be. Therefore, the effectiveness of this mitigation in reducing Wilderness impacts is probably low to moderate.

(See also Visual and Soil and Water Mitigation.)

#### BUILDING CONSTRUCTION

Locate the mid-mountain warming hut, and nordic skiing ticket booth and restrooms to reduce visual and other physical and biological impacts. Require Forest Service approval of its location and design.

All disturbed areas would be seeded and fertilized and all litter promptly cleaned up.

(See Soil and Water mitigation, above.)

#### EFFECTIVENESS OF MITIGATION

Since site specific analysis of all building sites would be required prior to construction, the effectiveness of this mitigation in reducing visual and physical impacts is high. The potential for adverse visual impacts as a result of poor site locations is low. The warming hut would be in a natural opening and would avoid undesirable soil conditions. The architectural design, color, shape and form of all buildings would be a consideration, and the probability of attractive, unobtrusive facilities being constructed is high.

(See Also Visual Resource and Soil and Water Mitigation.)



### UTILITIES CONSTRUCTION

Correct the sewage disposal deficiencies presently under permit.

Bury power lines running to the bottom of Chair Lifts 5 and 6, to the top of Chair 7 and to the warming hut within the road prisms of the existing and proposed catchline road. Bury lift control cables by hand in shallow trenches.

Install collars on pipes to break the flow of water when pipelines are buried in steep slopes. Seed and mulch backfilled trench lines. (See road construction requirements.)

For the warming hut well, adhere to State of Washington Department of Ecology regulations relating to drilling of water wells. Insure that the drill hole casing is properly sealed at the surface and between aquifers.

### EFFECTIVENESS OF MITIGATION

The condominium septic system will be reconstructed to current standards as required by the Yakima County Health District and the Washington Department of Ecology. The effectiveness of this mitigation measure in preventing surface water contamination and a public health threat is high.

Burying the power lines to the chair lift drive terminals would be highly effective in reducing the visual impact. The probability that the power lines would be buried is high, as this also avoids other problems associated with overhead lines, e.g., riming (ice coating).

The water well would be drilled by a state-licensed water well driller. The probability that state regulations would be adhered to are high. Subsurface geologic conditions can be very complex, making the prevention of inter-aquifer contamination difficult to achieve. However, the geologic conditions in the vicinity of the proposed hut are fairly simple. Sealing the casing at the surface and between aquifers could be at least moderately to highly effective in preventing groundwater contamination. The probability of the composting toilets being satisfactory is high; this type of toilet is successful at other ski areas.

(See Also Soil and Water Mitigation.)

### TRAIL SYSTEM CONSTRUCTION

#### PACIFIC CREST TRAIL

Paint lift terminals, towers and chairs with non-reflective, unobtrusive colors.

Leave as much vegetative screening as possible between the PCT and the chair lifts.

When run clearing and lift line vegetation removal is needed, consider the possibility of opening vistas to improve views of Mt. Rainier.

#### HOGBACK BASIN TRAIL

Carefully locate trails to avoid steep grades and wet areas. Provide drainage control features such as culverts and water bars, and tread hardening techniques where needed.

Locate the Hogback Trail System away from the PCT to reduce conflicts and to encourage use outside Wilderness.

Seasonally control use of the trail to reduce disturbance to wildlife during birthing periods.

#### EFFECTIVENESS OF MITIGATION

Painting the lift terminals, towers and chairs with non-reflective, unobtrusive colors would be moderately effective in reducing the visual impact from the PCT. From that portion near the upper terminal of proposed Chair 5, the lift lines and towers would be difficult to hide, especially where the towers are in the foreground. However, the probability of this mitigation measure being implemented would be high. The effectiveness of the mitigation would increase further from the lift lines.

Maintaining the vegetative screening between the PCT and the lift lines would again probably be only moderately effective in reducing the visual impact of the lines. The probability that this measure would be implemented is high.

Locating a Hogback Basin trail system away from the PCT would be highly effective in reducing conflicts and encouraging use outside the Wilderness. The trail system would give chair lift riders another destination after they reach Pigtail Peak on the lift. The trail would lead users away from the PCT and the Wilderness by offering spectacular views of Mount Rainier and the surrounding Cascades from Hogback Basin. The warming hut would also offer the user opportunities to enjoy the scenery, while offering rest room facilities and food and drink. The probability that the trail system would be built as mitigation and as a recreational opportunity is high.

#### PUBLIC SAFETY

Implement the "White Pass Ski Area Boundary Management Guidelines" (See Appendix F). With approval of any of the expansion alternatives, these guidelines would reduce exposure of skiers to avalanche hazard adjacent to the Ski Area, reduce the possibility of skiers inadvertently leaving the area and becoming lost, and yet allow a reasonable degree of opportunity for a backcountry skiing experience.

Inform public about construction projects and impacts: White Pass Company post signs; Forest Service issue media releases.

Due to increased presence of people and the high value of investment in the entire Permit Area, possibly implement a no-firearms-shooting restriction.

#### EFFECTIVENESS OF MITIGATION

The probability that the "White Pass Ski Area Boundary Management Guidelines" would be implemented is high. The Ski Area boundaries would be marked, and in some cases a physical barrier erected, to insure that Ski Area users know when they are leaving the Ski Area, and that when they leave they could encounter hazardous conditions. This mitigation would be highly effective in insuring that users of the Ski Area know when they leave the area. Some skiers would leave the Ski Area purposely, as they currently do, in spite of the boundaries being marked and/or fenced. Also, the probability of additional professional and volunteer Ski Patrol being added is high. The effectiveness of the Ski Patrol is high.

## **ALTERNATIVES IN DETAIL**

Seven alternatives are analyzed in this FEIS. They are designed to provide a variety of choices for further development at White Pass: for alpine skiing, for nordic skiing, and for summer recreation. Alternatives are designed to balance base and support facilities with lift capacity in winter and include summer strategies designed to be compatible with winter activities.

Mitigation measures unique to each alternative are included where appropriate. The alternatives are depicted in Figures II-1 through II-7 (two maps each, Winter and Summer). Figure I-8, page 116 shows the base area facilities for Alternatives 2-7. Detailed data for each alternative are listed in Tables II-1 through II-7. Refer to pages II-28 and following.

### **ALTERNATIVE 1 - NO ACTION (NO CHANGE)**

In addition to meeting NEPA's requirement to consider the effects of no action, this alternative also establishes a benchmark to which the other alternatives may be compared. It identifies and describes baseline conditions (Alternative 1) of the physical, biological, social and economic environments within the project's area of influence.

The term "No Action" means no change in present management. That is, the present mix of recreation activities would continue but no additional expansion or modification of facilities would be allowed.

This alternative would not provide any additional recreation, nor would it effect the unique setting of Hogback Basin. The physical and biological effects, assuming the Ski Area is operated and maintained at the present level, would not change. Snow cat skiing in Hogback Basin would not be permitted. There would be no additional impacts, nor would backcountry skiers who presently use the Basin be displaced. Construction or modification in the area would consist of normal maintenance items and upgrading and replacement of obsolete, worn-out or inadequate facilities. System upgrading would conform to all state and county specifications. Revegetation would be completed at the lower terminal of Chair 4. These actions are common to all alternatives.

This alternative would continue present management direction during the summer season. It assumes continued use of the chair lifts to Pigtail Peak and of White Pass parking, trailheads and campgrounds. Current use trends would continue in both Wildernesses and in areas outside.

### **ALTERNATIVE 2 - IMPROVEMENTS AND MODIFICATIONS OF EXISTING PERMIT AREA**

This alternative assumes White Pass Company would continue to make modifications to improve the quality of skiing within the existing Permit Areas.

The major modifications would be upgrading the condominium septic system, adding 1.5 acres of additional off-highway parking, building a new ski run west of Quail Run (see map of existing runs, Figure I-5) served by Chair 4, making additions to the lower shop building, and moving the Ski Patrol to the upper shop building, which would also be used for additional

employee housing. Auxiliary power would be upgraded and the day lodge would be expanded out onto the existing deck. The present ticket booth would be removed and a ticket sales area built on the east end of the lodge. Chair Lift 8 would be built to serve the ski school.

Chair Lift 3 would be relocated to provide skiers with a better fall line and eliminate the double fall line that now exists. Simultaneously in the existing Permit Area the rope tow would be upgraded and relocated, the platter lift would be eliminated, and the lower terminal for Chair 1 would be moved uphill to be at the same elevation as the lower terminal of Chair 2. The ramp that now exists on Chair 1 would be eliminated. Composting toilets would also be added at Pigtail Peak for the convenience of all skiers.

Five kilometers of groomed, nordic trail would be added in the bench area west of the present nordic trail system. There is adequate and suitable terrain for additional groomed trail which could be developed as the demand warrants. Another opportunity is a potential cooperative venture between the numerous nordic ski clubs, or between them and the White Pass Company, to develop ski huts to serve as warming, resting and socializing facilities. Restroom facilities and a ticket sales building would be added at the nordic trailhead.

These activities would greatly improve the quality of skiing in the present Permit Area and would also improve the functional management quality of the total area. Service to the public would be improved, and skiers would feel more satisfied and comfortable at White Pass. There would be some inconvenience to the summer recreationists during the construction period.

The present mix of winter recreation activities would continue. No expansion of the alpine skiing area would be permitted with this alternative. It addresses the issue of continuing to provide the unique, backcountry, nordic opportunities in Hogback Basin and the surrounding areas.

This alternative would allow programs to increase and enhance summer recreation in the White Pass area. Emphasis would be on providing summer day use opportunities outside Wilderness. Wilderness management objectives would be emphasized but might be more difficult to achieve, though this alternative could have a positive effect of diverting people from the Wilderness.

Programs would include chair lift rides to Pigtail Peak, loop trails in Hogback Basin, and a interpretive/naturalist program to provide additional information for visitors. Only lifts 1 and 2 would operate in the summer, but the new Pigtail Peak restroom facility would remain open. It might also be necessary to implement a no-firearms-shooting restriction for public safety.

Construction elements involved are listed in the proposed scheduling sequence in Table II-2. These are the major projects, but additional improvements could be made.

### **ALTERNATIVE 3 - ADD CHAIR LIFT #7 AND DEVELOP NORDIC SKIING IN HOGBACK BASIN WITH WARMING HUT**

This alternative allows some expansion of alpine skiing (by 600 SAOT) through the construction of Lift 7 and groomed runs above Knuppenburg Lake while developing nordic skiing in Hogback Basin and north of the highway.

A groomed and ungroomed trail system would be developed in Hogback Basin. Access to and from the Basin by beginner to intermediate nordic skiers would be gained by using Lift 7.

This would make the new system attractive to these skiers. It would also help maintain skier safety by decreasing two-direction travel on the catchline road. Approximately five acres of trail would be cleared in the Basin. Approximately 660 acres would be managed for such use. Day touring, telemarking, snowshoeing and winter camping are other potential uses of the Basin.

A warming hut could be constructed to facilitate the social, safety and convenience needs of Basin users. A service road would need to be constructed to the hut.

The groomed nordic trail system north of the highway would be expanded by five kilometers. Toilet facilities and a ticket booth would be built at the nordic trailhead. Nordic ski shelters could be made available in cooperation with White Pass Company or with various nordic ski clubs that use the area. Nordic skiing opportunities would dramatically increase. There would be an additional mix of recreation activities south of the highway.

The additional Lift 7 runs would be primarily for the advanced skier. The Permit Area would be expanded by 1,100 acres, of which about 100 acres of timber would be cleared for ski runs and lift line.

The modifications within the existing Permit Area displayed in Alternative 2 would be included in this alternative. Summer recreation opportunities and Wilderness protection would be enhanced as described there.

Construction elements involved are listed in the proposed scheduling sequence in Table II-3.

#### **ALTERNATIVE 4 - ADD CHAIR LIFT #5 AND MID-MOUNTAIN WARMING HUT**

This alternative would allow both alpine and backcountry nordic skiers to use the high elevation Hogback Basin and provide additional recreation opportunities for both types of skiers. The eastern portion (about 330 acres) would be accessible from Chair Lift 5 and provide additional beginner and intermediate alpine skiing for 750 SAOT. The timber in this basin is in clumps and stringers [See Ecotype Map, Figure III-6] and little clearing would be needed. About 75 acres of groomed slopes would accommodate the alpine skiers who would, however, probably spread out through the entire 330 acres. Hogback Ridge and the eastern portion of the Basin (about 300 acres) are not accessible from the lift and would be available for backcountry nordic skiing, though with many of their unique qualities reduced (e.g., isolation, tranquility, self-reliance) and their semi-primitive setting altered. Some backcountry skiers who desire a totally undeveloped setting would be displaced.

The mid-mountain hut would be constructed. It could be reached from all upper elevation lifts and would be available to all skiers.

The modifications within the existing Permit Area displayed in Alternative 2 would be included in this alternative. Summer recreation opportunities and Wilderness protection would be enhanced as described there.

Construction elements involved are listed in the proposed scheduling sequence in Table II-4.

**ALTERNATIVE 5 - ADD CHAIR LIFTS #5 AND #6 AND MID-MOUNTAIN WARMING HUT**

With this alternative the central Hogback Basin could be fully utilized for alpine skiing and the two added chair lifts would allow access to the entire Basin. This would provide for an additional 1,400 SAOT of primarily beginner and intermediate skiers. About 140 acres would be groomed but the entire 660 acres would be utilized by both types of skiers. The timber in this Basin is in clumps and stringers with little clearing needed (see aerial photo, Figure I-2). Backcountry skiers would have easier, chair-lift-assisted access to the Miriam and Shoe Lake Basins. Although about 235 acres would remain ungroomed and therefore available to them, Hogback Basin would no longer totally meet the needs of the backcountry nordic skier. The unique, semi-primitive setting would be changed and those who desire a totally undeveloped setting would be displaced.

The mid-mountain hut would be constructed. It could be accessible from all upper elevation lifts (Chairs 1, 2, 4, 5 and 6). Construction of the two new chair lifts would be phased over time, with construction of Chair Lift 6 initiated when annual skier visits reach 135,000–140,000 per year. At that time other facilities (day lodge, warming hut, parking, etc.) would also be expanded. This alternative would provide additional recreational opportunities for all skiers, but there would be an imbalance between intermediate and expert terrain for the alpine skier.

Facilities planned under this alternative would be constructed in phases triggered by demand. The power would be upgraded to serve the demand anticipated for both Chairs 5 and 6. The seating capacity of the day lodge would be increased and the lodge septic system expanded to accommodate the total anticipated skier increase. The groomed nordic trail system would be expanded by 10 kilometers, and toilets and ticket booths would be built at the trailhead.

Summer recreationists would be affected by the construction activities for a short period, and by the intrusion of development in Hogback Basin. Additional winter use of the Goat Rocks Wilderness could be expected as access from the upper chair lifts would allow easier access to Miriam and Shoe Lake Basins and the Wilderness beyond.

The modifications within the existing Permit Area displayed in Alternative 2 would be included in this alternative. Summer recreation opportunities and Wilderness protection would be enhanced as described there.

Construction elements involved are listed in the proposed scheduling sequence in Table II-5.

**ALTERNATIVE 6 - ADD CHAIR LIFTS #5 AND #7 AND MID-MOUNTAIN WARMING HUT**

With this alternative nearly the full effective vertical rise in the Ski Area would be available for alpine and nordic skiing while a portion of Hogback Basin would be retained for backcountry nordic skiing. 1,100 acres would be added to the Permit Area, with 100 acres of heavy timber to be cleared for ski runs and lift line for Chair Lift 7 and 75 acres of open stands groomed for Chair Lift 5. Expansion would provide additional skiing both for the

beginner/intermediate and the advanced alpine skier. Hogback Ridge and the eastern portion of the Basin (about 300 acres) are not served by the lifts and would be available for backcountry nordic skiing, but with many of the unique qualities reduced (isolation, tranquility, self-reliance, etc.) and the semi-primitive setting altered. This alternative would provide additional recreation opportunities for all skiers and it would make the distribution of beginner, intermediate and expert alpine terrain more acceptable. The mid-mountain hut would be constructed. It could be reached from all upper elevation lifts (chairs 1, 2, 4, 5 and 7). Construction of the two chair lifts would be phased over time.

Facilities planned under this alternative would be constructed in phases triggered by demand. Chair Lift 5 would be built first, followed by the warming hut and its composting toilet. The power would be upgraded to serve the demand anticipated for Chairs 5 and 7. The groomed nordic trail system would be expanded by 5 kilometers, and toilets and a ticket booth would be built at the trailhead. Summer recreationists would be affected by the construction activities for a short period, and by the intrusion of development in Hogback Basin. Additional winter use of the Goat Rocks Wilderness could be expected as access from the upper chair lift, Chair 5, would allow easier access to Miriam and Shoe Lake Basins and the Wilderness beyond.

Chair 7 would be built when the annual skier visits reached 135,000–140,000 per year. At that time the other facilities (warming hut, parking, etc.) would also be expanded. The seating capacity of the day lodge would be increased and the lodge septic system expanded to accommodate the total anticipated skier increase.

The modifications within the existing Permit Area displayed in Alternative 2 would be included in this alternative. Summer recreation opportunities and Wilderness protection would be enhanced as described there.

Construction elements involved are listed in the proposed scheduling sequence in Table II-6.

#### **ALTERNATIVE 7 (PREFERRED) - ADD CHAIR LIFTS #5, #6 AND #7 AND MID-MOUNTAIN WARMING HUT**

This alternative provides for full development of the expansion area (Hogback Basin and Knuppenburg Lake areas) for both alpine and nordic skiing. 1,100 acres would be added to the Permit Area, with 100 acres of heavy timber to be cleared for ski runs and lift line for Chair Lift 7 and 140 acres of open stands groomed for Chair Lifts 5 and 6. Expansion would provide additional skiing both for the beginner/intermediate and the expert alpine skier as well as for the mainstream backcountry skier on ungroomed, marked trails. Hogback Basin would no longer meet the total needs of the backcountry nordic skier with this alternative because the unique, semi-private setting would be changed, though about 235 acres would remain ungroomed and therefore available for backcountry skiing.

Those back country skiers who desire a totally undeveloped setting would be displaced. Marked, ungroomed nordic trails would be provided in the ungroomed portion of Hogback Basin and on Hogback Ridge. This marked system would be depicted in brochures and in the warming hut.

Power would be upgraded to service the demand anticipated for Chair Lifts 5, 6 and 7. The nordic trail system would be further expanded to 25 kilometers. Construction of toilets and the ticket booth at the nordic trailhead would be completed. The seating capacity of the day lodge would be increased and the lodge septic system expanded to accommodate the total anticipated skier increase. Summer recreationists would be affected by the construction activities for a short period, and by the intrusion of development in Hogback Basin. Additional winter use of the Goat Rocks and William O. Douglas Wildernesses could be expected due to the increased popularity of the White Pass area. This alternative would provide the maximum amount of winter recreation for both alpine and nordic skiers.

The mid-mountain hut would be constructed. This facility could be reached from all upper elevation lifts (Chairs 1, 2, 4, 5, 6 and 7). Construction of the chair lifts would be phased over time, with Chair Lift 5 being the first. The next lift (6) would be initiated when annual skier visits reach 135,000–140,000 per year. The last chair lift (7) would be constructed when annual skier visits reach 170,000–175,000 per year. At each phase the other facilities (day lodge, warming hut, parking, etc.) would also be expanded.

The modifications within the existing Permit Area displayed in Alternative 2 would be included in this alternative. Summer recreation opportunities and Wilderness protection would be enhanced as described there.

Construction elements involved are listed in the proposed scheduling sequence in Table II-7.



TABLE II-1, CHARACTERISTICS OF ALTERNATIVE 1

WINTER

Total Area: .....712 acres  
Slope Capacity: .5,125 SAOT

Lift summary:

4 chair lifts  
1 platter lift  
1 rope tow  
Vertical rise upper elevation .....6,000'  
                  - lower elevation .....4,500'  
                  =.....1,500'

Lift Capacity: 3,700 EDC (estimated daily cap.)

Comfortable Capacities

Ability	Acres	SAOT	%
beginner	70	750	30
intermediate	185	1125	45
expert	60	625	25
TOTALS	315	2,500	100

Projected Rec. Use (year 2000)

Alpine .....100,000  
Nordic  
Groomed trail.....10,000  
Ungroomed.....3,500  
Backcountry.....2,000  
TOTAL.....115,500

Developed Area (ski runs)

Cleared timber.....315 acres  
Open Stands.....0  
TOTAL.....315 acres

SUMMER

Summer Activities (Rec. visits/year)

Leech Lake .....3,300  
Existing Permit Area.....1,400  
Hogback Basin.....350  
Subtotal.....5,050

Wilderness

Miriam & Shoe Lake Basins.1,250

TOTAL Recreation use .....6,300

Nordic Skiing

Groomed trails.....9.3 mi. (15 km.)  
Non-Groomed trails.....25 mi. (40 km.)  
Backcountry  
Telemark.....1,000 acres  
Day Tour.....2,000 acres

Base/Support Facilities:

Day Lodge: .....20,000 sq. ft.  
                  .....575 seating  
Mid-Mountain Hut:.....None

Parking:

acreage .....9.0 acres  
vehicle capacity.....1,250

Water System

Base = .....400 gpm spring  
                  .....50,000 gal. tank  
Upper = .....None

Waste Water Disposal

Day Lodge = septic tank/drainfield  
2,540 people/day capacity  
Condominiums: = septic tank/drainfield  
220 people/day capacity  
Upper = None

Service/access roads: 2.7 miles

Forest Service Facilities

Leech Lk. Campground....80 PAOT  
Horse Use Trailhead .....63 PAOT  
PCT Trailhead .....28 PAOT

Chair Lift Operating to:

Pigtail Peak.....Yes  
Hogback Mountain.....No

Interpretive/Naturalist Program ..... Yes

Trail System in Hogback Basin.....No

Rec. Opportunity Setting

Existing Permit Area.....Rural  
 Hogback Basin .....Semi-primitive, Non-motor.  
 Shoe Lake Basin (SLB) ..... Wilderness-Transition  
 Miriam Basin (MB) ..... Wilderness-Transition  
 W.O.Douglas (WOD) Wilderness... Wilderness-Semi-primitive

Wilderness Objectives

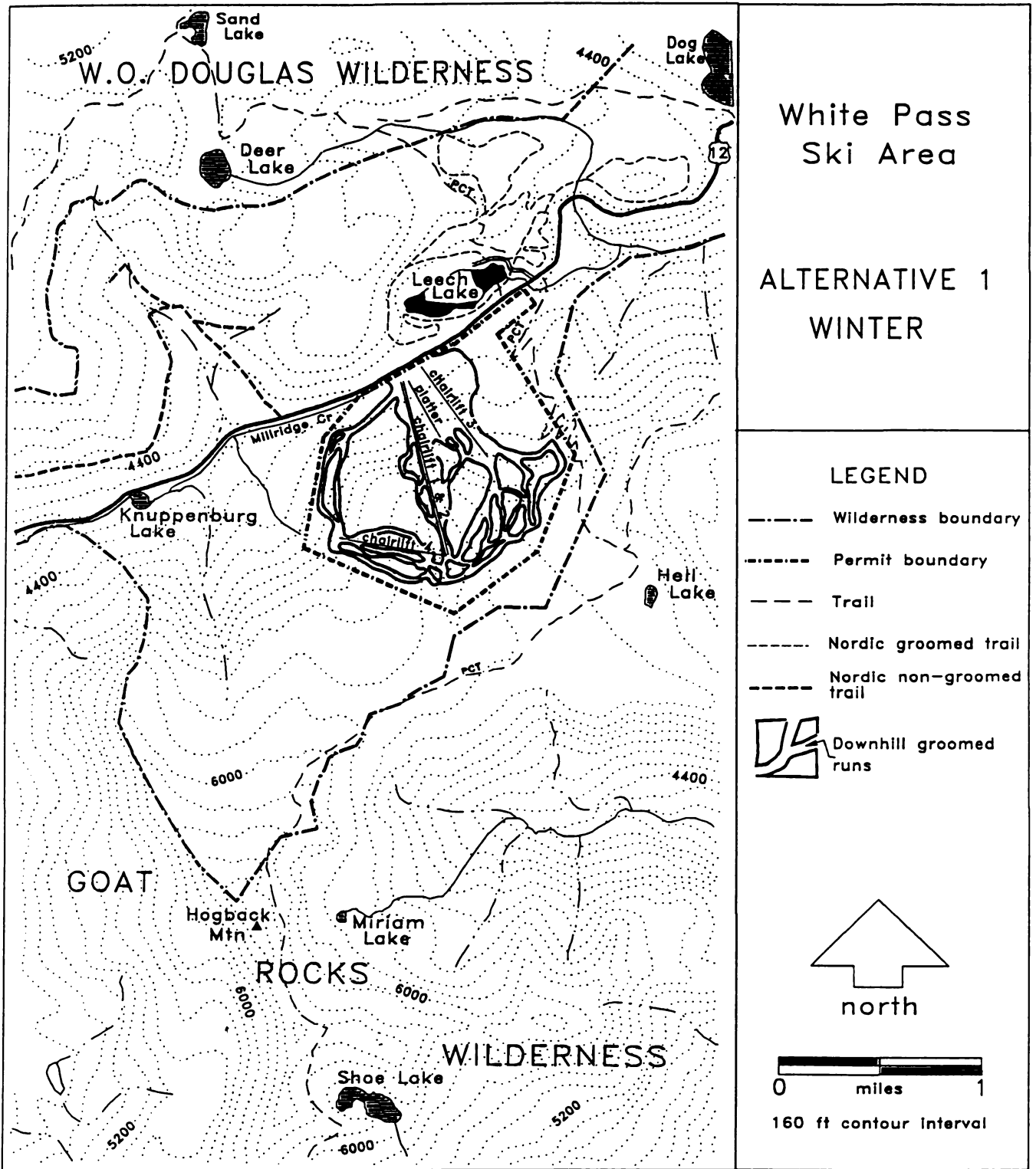
	SLB	MB	WOD
Capacity RVD's/acre/yr.....	15	15	5
Ave. # Parties Encountered/day.....	8	8	5
Camps vis.-camp.....	3	3	2

CONSTRUCTION ELEMENTS SCHEDULING SEQUENCE

Rebuild condominium septic system  
 Complete revegetation on Lift 4

TOTAL COST.....\$100,000


Figure II-1W



White Pass  
Ski Area

ALTERNATIVE 1  
WINTER

LEGEND

- Wilderness boundary
- Permit boundary
- - - - - Trail
- Nordic groomed trail
- Nordic non-groomed trail
-  Downhill groomed runs

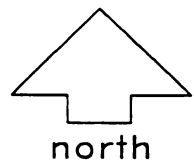
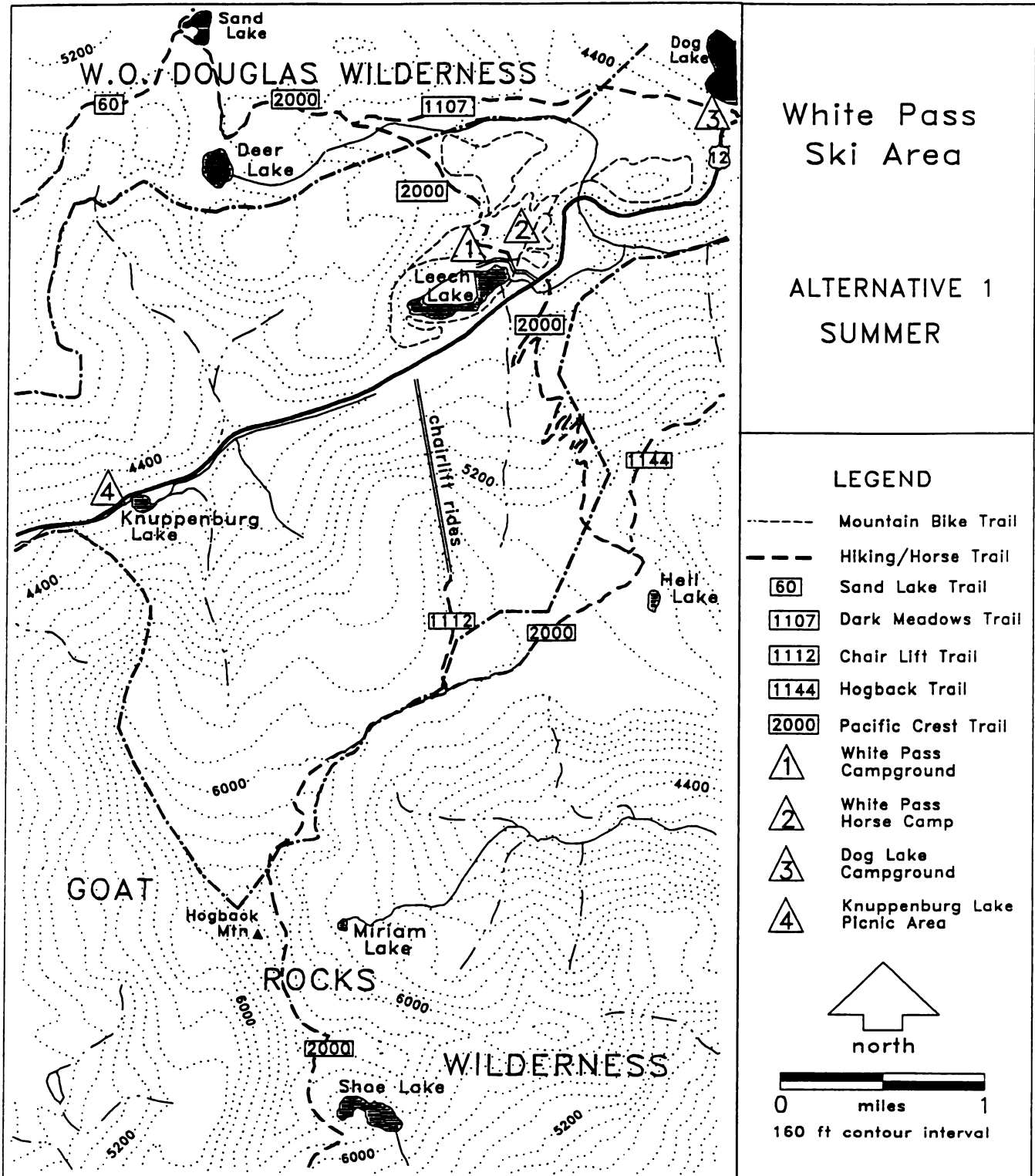


Figure II-1S



**TABLE II-2, CHARACTERISTICS OF ALTERNATIVE 2**

**WINTER**

Total Area: .....712 acres  
Slope Capacity: .5,245 SAOT

**Lift summary:**

5 chair lifts  
1 rope tow  
Vertical rise upper elevation .....6,000'  
= lower elevation .....4,500'  
= .....1,500'

**Lift Capacity:** 4,025 EDC (estimated daily cap.)

**Comfortable Capacities**

Ability	Acres	SAOT	%
beginner	70	750	30
intermediate	193	1125	45
expert	60	625	25
TOTALS	323	2,500	100

**Projected Rec. Use (year 2000)**

Alpine .....110,000  
Nordic  
Groomed trail .....12,000  
Ungroomed .....3,500  
Backcountry .....2,000  
TOTAL .....127,500

**Developed Area (ski runs)**

Cleared timber .....323 acres  
Open Stands .....0  
TOTAL .....323 acres

**SUMMER**

**Summer Activities (Rec. visits/year)**

Leech Lake .....3,300  
Existing Permit Area .....2,100  
Hogback Basin .....1,050  
Subtotal .....6,450

Wilderness  
Miriam & Shoe Lake Basins .....950

TOTAL Recreation use .....7,400

**Nordic Skiing**

Groomed trails .....12.5 mi. (20 km.)  
Non-Groomed trails .....25 mi. (40 km.)  
Backcountry  
Telemark .....1,000 acres  
Day Tour .....2,000 acres

**Base/Support Facilities:**

Day Lodge: .....23,500 sq. ft.  
.....715 seating  
Mid-Mountain Hut: .....None

**Parking:**

acreage .....10.5 acres  
vehicle capacity .....1,475

**Water System**

Base = .....400 gpm spring  
.....50,000 gal. tank  
Upper = .....None

**Waste Water Disposal**

Day Lodge = septic tank/drainfield  
2,540 people/day capacity  
Condominiums: = septic tank/drainfield  
220 people/day capacity  
Upper = None

**Service/access roads:** 2.7 miles

**Forest Service Facilities**

Leech Lk. Campground .....80 PAOT  
Horse Use Trailhead .....63 PAOT  
PCT Trailhead .....28 PAOT

**Chair Lift Operating to:**

Pigtail Peak ..... Yes  
Hogback Mountain .....No

**Interpretive/Naturalist Program** ..... Yes

**Trail System in Hogback Basin** ..... Yes

**Rec. Opportunity Setting**

Existing Permit Area.....Rural  
 Hogback Basin .....Semi-primitive, Non-motor.  
 Shoe Lake Basin (SLB) ..... Wilderness-Transition  
 Miriam Basin (MB) ..... Wilderness-Transition  
 W.O.Douglas (WOD) Wilderness... Wilderness-Semi-primitive

**Wilderness Objectives**

	SLB	MB	WOD
Capacity RVD's/acre/yr.....	15	15	5
Ave. # Parties Encountered/day.....	8	8	5
Camps vis.-camp.....	3	3	2

**CONSTRUCTION ELEMENTS SCHEDULING SEQUENCE**

- Rebuild condominium septic system
- Complete revegetation on Chair Lift 4
- Simultaneously:
  - Relocate Chair 3
  - Relocate/upgrade rope tow
  - Eliminate platter lift
  - Relocate Chair 1 loading
- Add nordic groomed trails (5 km.)
  - Add toilets at nordic trailhead
- Add toilets at top of Pigtail Peak
- Add parking (1.5 acres)
- Add run west of Quail Run
- Add to lower shop
- Move Ski Patrol to upper shop
- Add employee housing
- Upgrade power
- Add Chair Lift 8 (ski school lift)
- Add seating and ticket sales to Day Lodge (3,500 sq. ft.)

**TOTAL COST.....\$1,210,000**

FIGURE II-2W

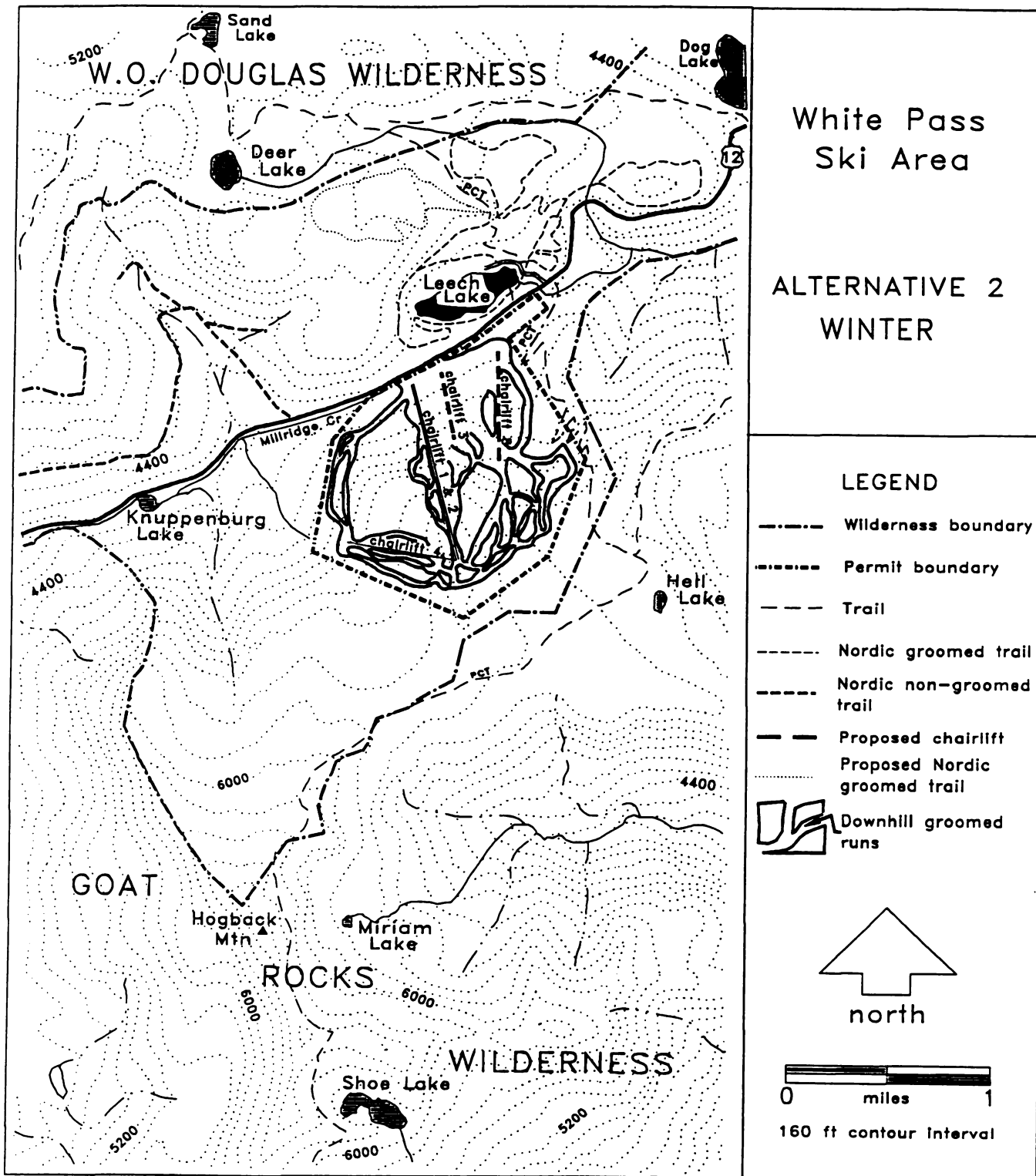
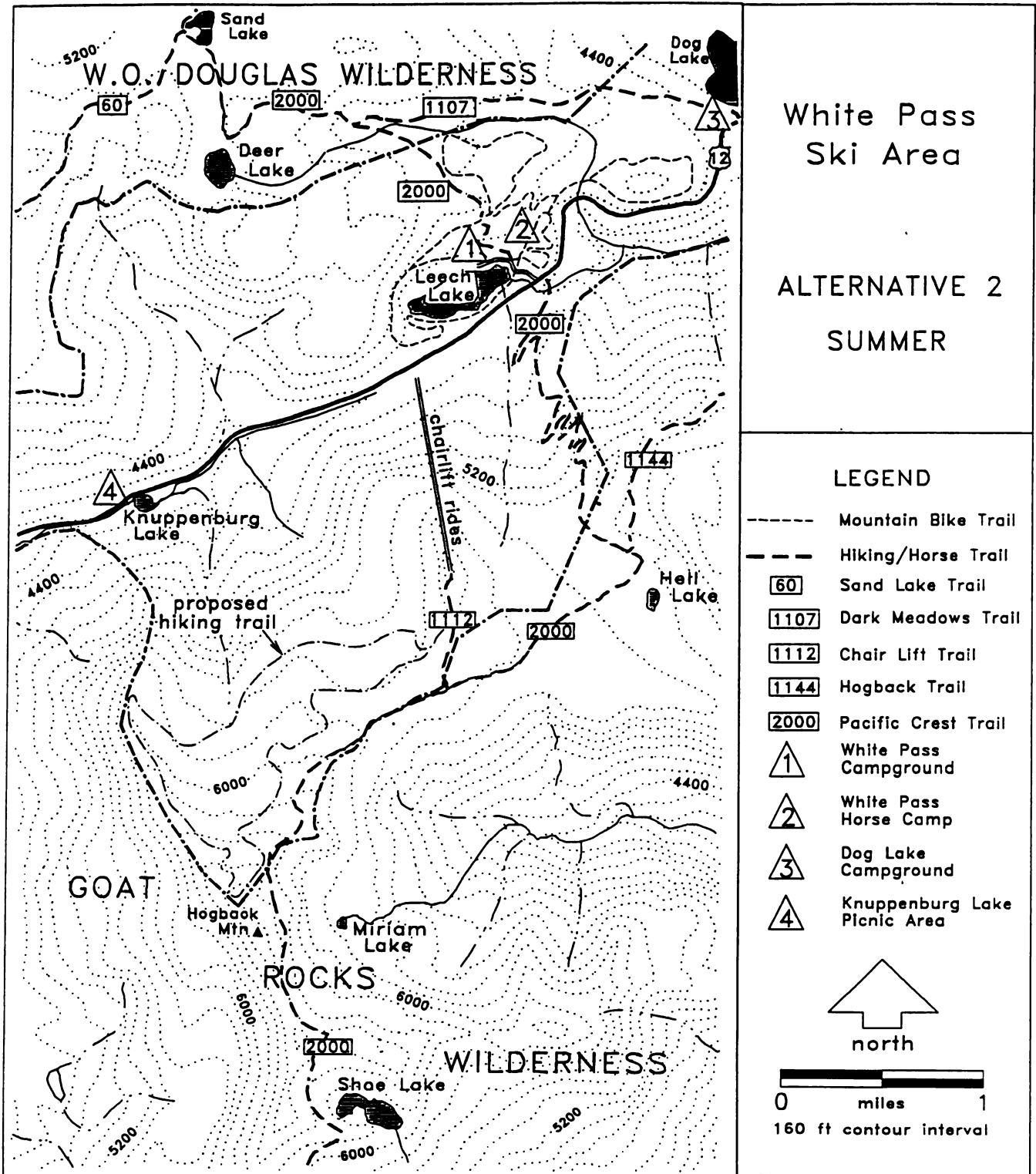


FIGURE II-2S





**TABLE II-3, CHARACTERISTICS OF ALTERNATIVE 3**

**WINTER**

Total Area: .....1,820 acres  
 Slope Capacity: .....5,945 SAOT

**Lift summary:**

6 chair lifts  
 1 rope tow  
 Vertical rise upper elevation .....6,000'  
                   - lower elevation .....4,100'  
                   = .....1,900'

**Lift Capacity:** 5,509 EDC (estimated daily cap.)

**Comfortable Capacities**

Ability	Acres	SAOT	%
beginner	70	775	25
intermediate	213	1333	43
expert	100	992	32
<b>TOTALS</b>	<b>383</b>	<b>3,100</b>	<b>100</b>

**Projected Rec. Use (year 2000)**

Alpine .....141,200  
 Nordic  
     Groomed trail .....20,000  
     Ungroomed .....3,500  
     Backcountry .....2,000  
**TOTAL** .....166,700

**Developed Area (ski runs)**

Cleared timber .....383 acres  
Open Stands .....5  
**TOTAL** .....388 acres

**SUMMER**

**Summer Activities (Rec. visits/year)**

Leech Lake .....3,300  
 Existing Permit Area .....2,100  
Hogback Basin .....1,050  
 Subtotal .....6,450

**Wilderness**

Miriam & Shoe Lake Basins .....950

**TOTAL Recreation use** .....7,400

**Nordic Skiing**

Groomed trails ..... 18.6 mi. (30 km.)  
 Non-Groomed trails ..... 25 mi. (40 km.)  
**Backcountry**  
     Telemark ..... 1,000 acres  
     Day Tour ..... 2,000 acres

**Base/Support Facilities:**

Day Lodge: .....23,500 sq. ft.  
                   .....715 seating  
 Mid-Mountain Hut: .....2,700 sq. ft.  
                   .....150 seating  
**Parking:**  
     acreage .....13.5 acres  
     vehicle capacity .....1,925

**Water System**

Base = .....400 gpm spring  
                   .....50,000 gal. tank  
 Upper = .....well

**Waste Water Disposal**

Day Lodge = septic tank/drainfield  
                   3,810 people/day capacity  
 Condominiums: = septic tank/drainfield  
                   220 people/day capacity  
 Upper = composting toilet  
                   800 people/day capacity

**Service/access roads:** 3.3 miles

**Forest Service Facilities**

Leech Lk. Campground ..... 80 PAOT  
 Horse Use Trailhead ..... 63 PAOT  
 PCT Trailhead ..... 28 PAOT

**Chair Lift Operating to:**

Pigtail Peak ..... Yes  
 Hogback Mountain ..... No

**Interpretive/Naturalist Program** ..... Yes

**Trail System in Hogback Basin** ..... Yes

**Rec. Opportunity Setting**

Existing Permit Area.....Rural  
 Hogback Basin .....Semi-primitive, Non-motor.  
 Shoe Lake Basin (SLB) ..... Wilderness-Transition  
 Miriam Basin (MB) ..... Wilderness-Transition  
 W.O.Douglas (WOD) Wilderness... Wilderness-Semi-primitive

**Wilderness Objectives**

	SLB	MB	WOD
Capacity RVD's/acre/yr.....	15.....	15.....	5
Ave. # Parties Encountered/day.....	8.....	8.....	5
Camps vis.-camp.....	3.....	3.....	2

**CONSTRUCTION ELEMENTS SCHEDULING SEQUENCE**

- Rebuild condominium septic system
- Complete revegetation on Chair Lift 4
- Simultaneously:
  - Relocate Chair 3
  - Relocate/upgrade rope tow
  - Eliminate platter lift
  - Relocate Chair 1 loading
- Add nordic groomed trails (5 km.)
  - Add toilets at nordic trailhead
- Add toilets at top of Pigtail Peak
- Add parking (1.5 acres)
- Add run west of Quail Run
- Add to lower shop
- Move Ski Patrol to upper shop
- Add employee housing
- Upgrade power
- Add Chair Lift 8 (ski school lift)
- Add seating and ticket sales to Day Lodge (3,500 sq. ft.)
- Simultaneously:
  - Build Chair 7
  - Build warming hut toilets
  - Add nordic groomed trails in Hogback Basin (10 km.)
  - Add Day Lodge septic system (add. capacity: 1270 PAOT)
  - Add parking (3 acres)
- Build warming hut

**TOTAL COST.....\$2,720,000**

FIGURE II-3W

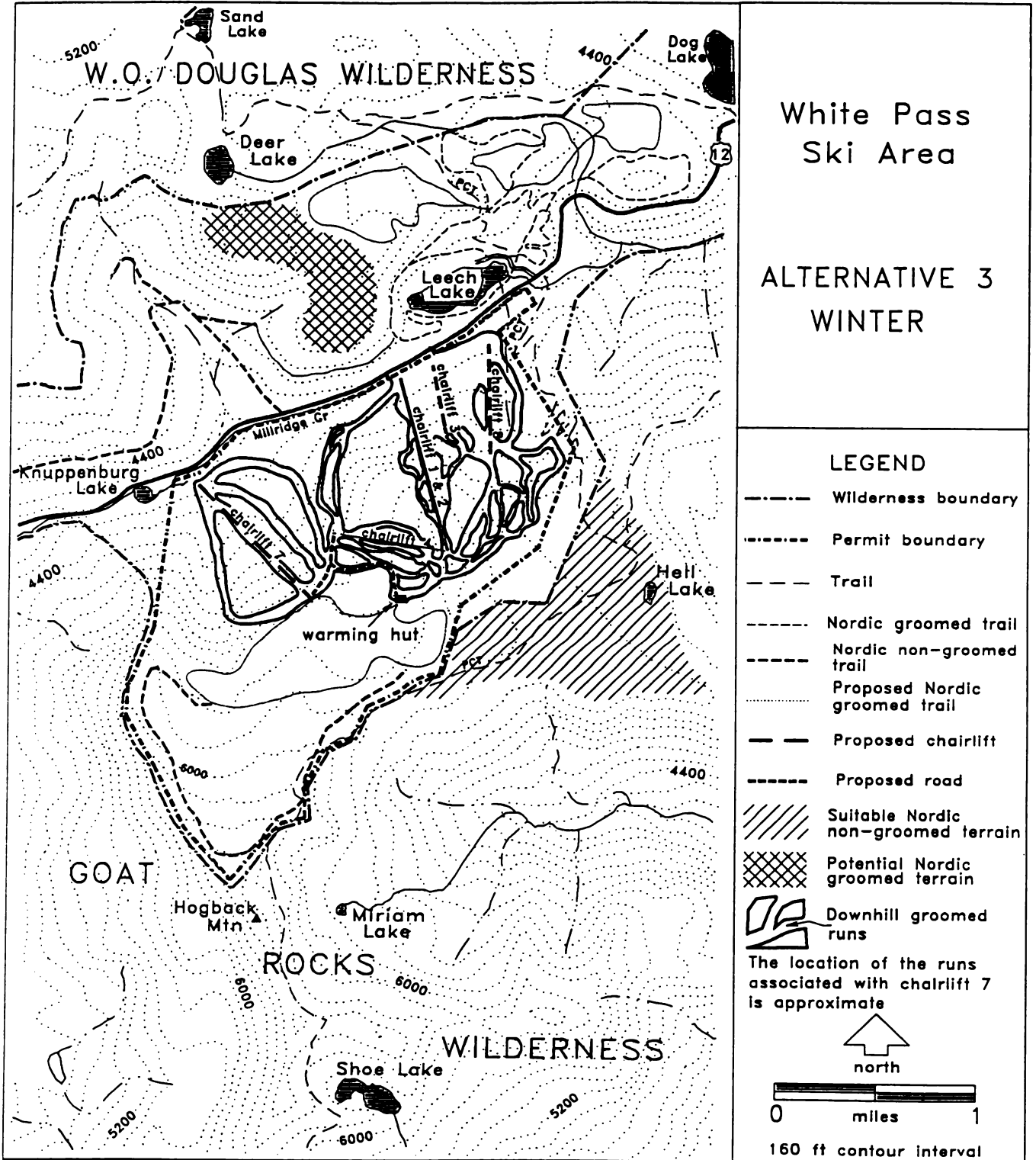
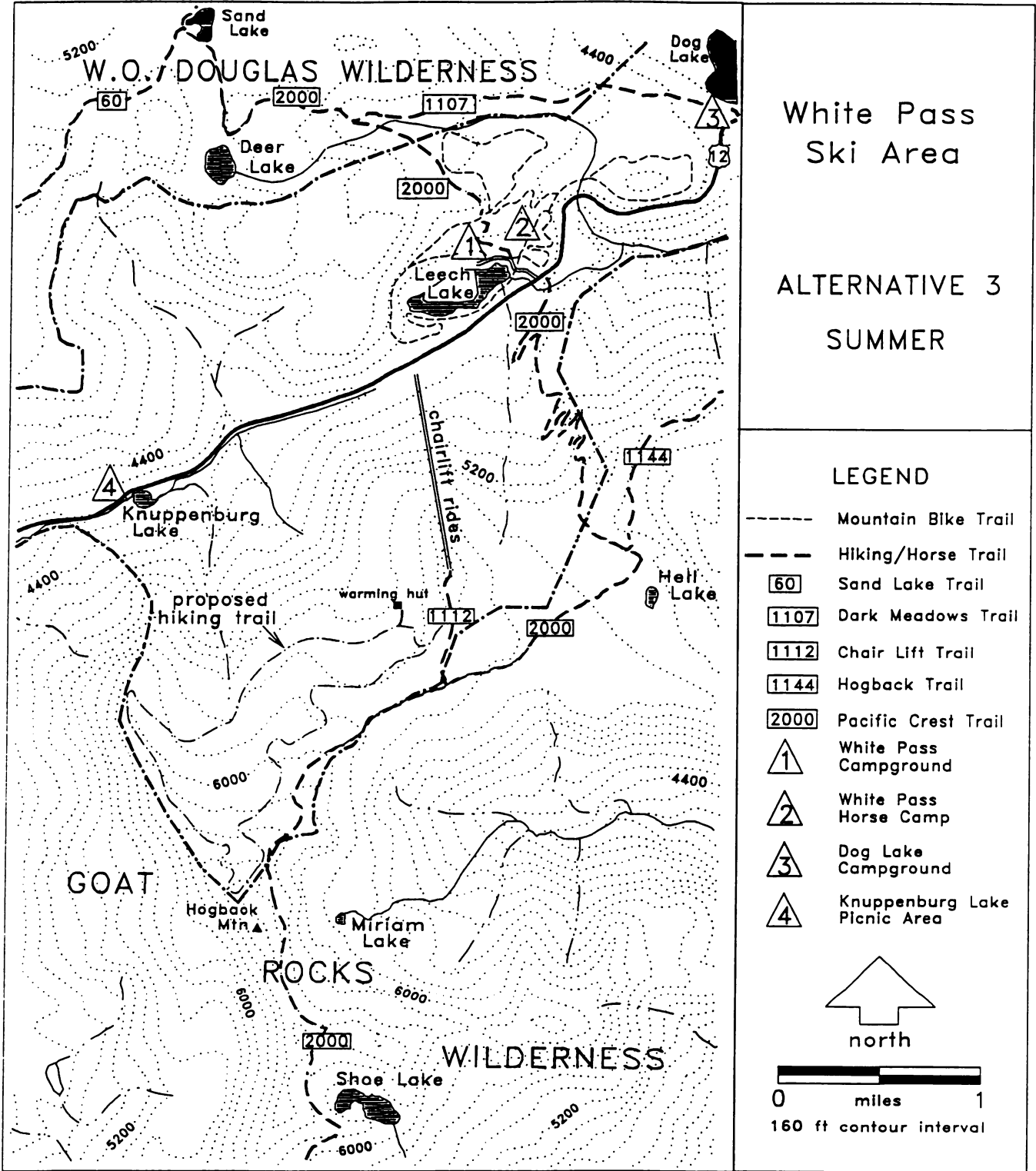


FIGURE II-3S



**TABLE II-4, CHARACTERISTICS OF ALTERNATIVE 4**

**WINTER**

Total Area: .....1,460 acres  
 Slope Capacity: .6,620 SAOT

**Lift summary:**

6 chair lifts  
 1 rope tow  
 Vertical rise upper elevation .....6,400'  
                   = lower elevation .....4,500'  
                   = .....1,900'

**Lift Capacity:** 5,000 EDC (estimated daily cap.)

**Comfortable Capacities**

Ability	Acres	SAOT	%
beginner	95	1105	34
intermediate	253	1462	45
expert	60	683	21
<b>TOTALS</b>	<b>408</b>	<b>3,250</b>	<b>100</b>

**Projected Rec. Use (year 2000)**

Alpine .....146,000  
 Nordic  
     Groomed trail.....15,000  
     Ungroomed.....3,500  
     Backcountry.....1,000  
**TOTAL.....165,500**

**Developed Area (ski runs)**

Cleared timber.....333 acres  
Open Stands.....75  
**TOTAL.....408 acres**

**SUMMER**

**Summer Activities (Rec. visits/year)**

Leech Lake .....3,300  
 Existing Permit Area.....2,100  
Hogback Basin.....1,050  
 Subtotal.....6,450

Wilderness  
Miriam & Shoe Lake Basins.....950

**TOTAL Recreation use .....7,400**

**Nordic Skiing**

Groomed trails.....15.6 mi. (25 km.)  
 Non-Groomed trails.....25 mi. (40 km.)  
**Backcountry**  
     Telemark.....900 acres  
     Day Tour.....1,640 acres

**Base/Support Facilities:**

Day Lodge: .....23,500 sq. ft.  
                   .....715 seating  
 Mid-Mountain Hut:.....2,700 sq. ft.  
                   .....150 seating  
**Parking:**  
     acreage .....13.5 acres  
     vehicle capacity.....1,925

**Water System**

Base = .....400 gpm spring  
                   .....50,000 gal. tank  
 Warming Hut = .....Well

**Waste Water Disposal**

Day Lodge = septic tank/drainfield  
                   2,540 people/day capacity  
 Condominiums: = septic tank/drainfield  
                   220 people/day capacity  
 Warming Hut = composting toilet  
                   800 people/day capacity

**Service/access roads:** 3.4 miles

**Forest Service Facilities**

Leech Lk. Campground....80 PAOT  
 Horse Use Trailhead .....63 PAOT  
 PCT Trailhead .....28 PAOT

**Chair Lift Operating to:**

Pigtail Peak .....Yes  
 Hogback Mountain .....No

**Interpretive/Naturalist Program** ..... Yes

**Trail System in Hogback Basin** ..... Yes

**Rec. Opportunity Setting**

Existing Permit Area.....	Rural
Hogback Basin .....	Roaded-Natural
Shoe Lake Basin (SLB) .....	Wilderness-Transition
Miriam Basin (MB) .....	Wilderness-Transition
W.O.Douglas (WOD) Wilderness...	Wilderness-Semi-primitive

**Wilderness Objectives**

	<u>SLB</u>	<u>MB</u>	<u>WOD</u>
Capacity RVD's/acre/yr.....	15	15	5
Ave. # Parties Encountered/day.....	8	8	5
Camps vis.-camp.....	3	3	2

**CONSTRUCTION ELEMENTS SCHEDULING SEQUENCE**

- Rebuild condominium septic system
- Complete revegetation on Chair Lift 4
- Simultaneously:
  - Relocate Chair 3
  - Relocate/upgrade rope tow
  - Eliminate platter lift
  - Relocate Chair 1 loading
- Add nordic groomed trails (10 km.)
  - Add toilets at nordic trailhead
- Add toilets at top of Pigtail Peak
- Add parking (1.5 acres)
- Add run west of Quail Run
- Add to lower shop
- Move Ski Patrol to upper shop
- Add employee housing
- Upgrade power
- Add Chair Lift 8 (ski school lift)
- Add seating and ticket sales to
  - Day Lodge (3,500 sq. ft.)
- Simultaneously:
  - Build Chair 5
  - Build warming hut toilets
  - Add parking (3 acres)
- Build Mid-Mountain Warming Hut, next year  
(seating 150 PAOT)

**TOTAL COST.....\$2,600,000**

FIGURE II-4W

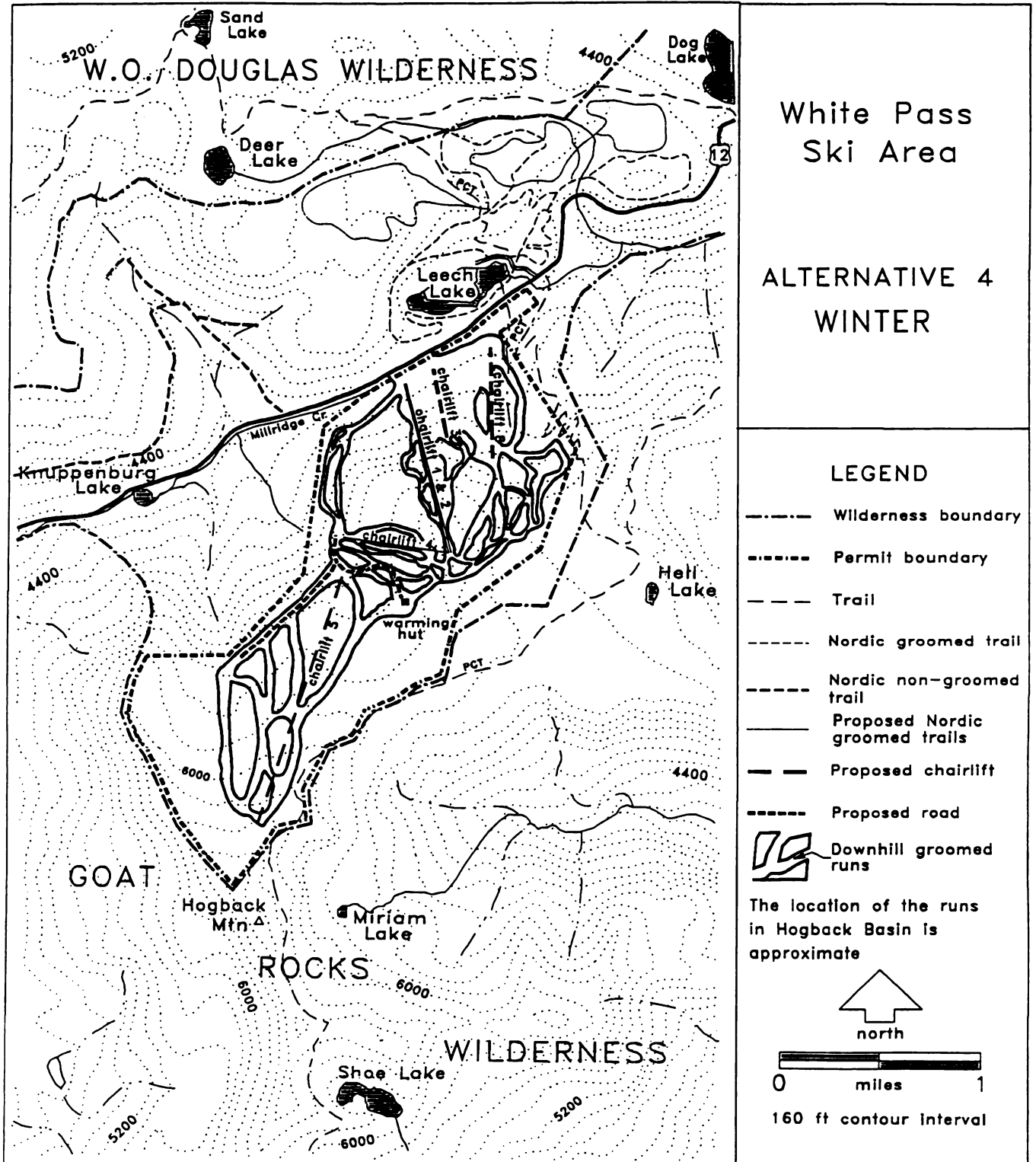


FIGURE II-4S

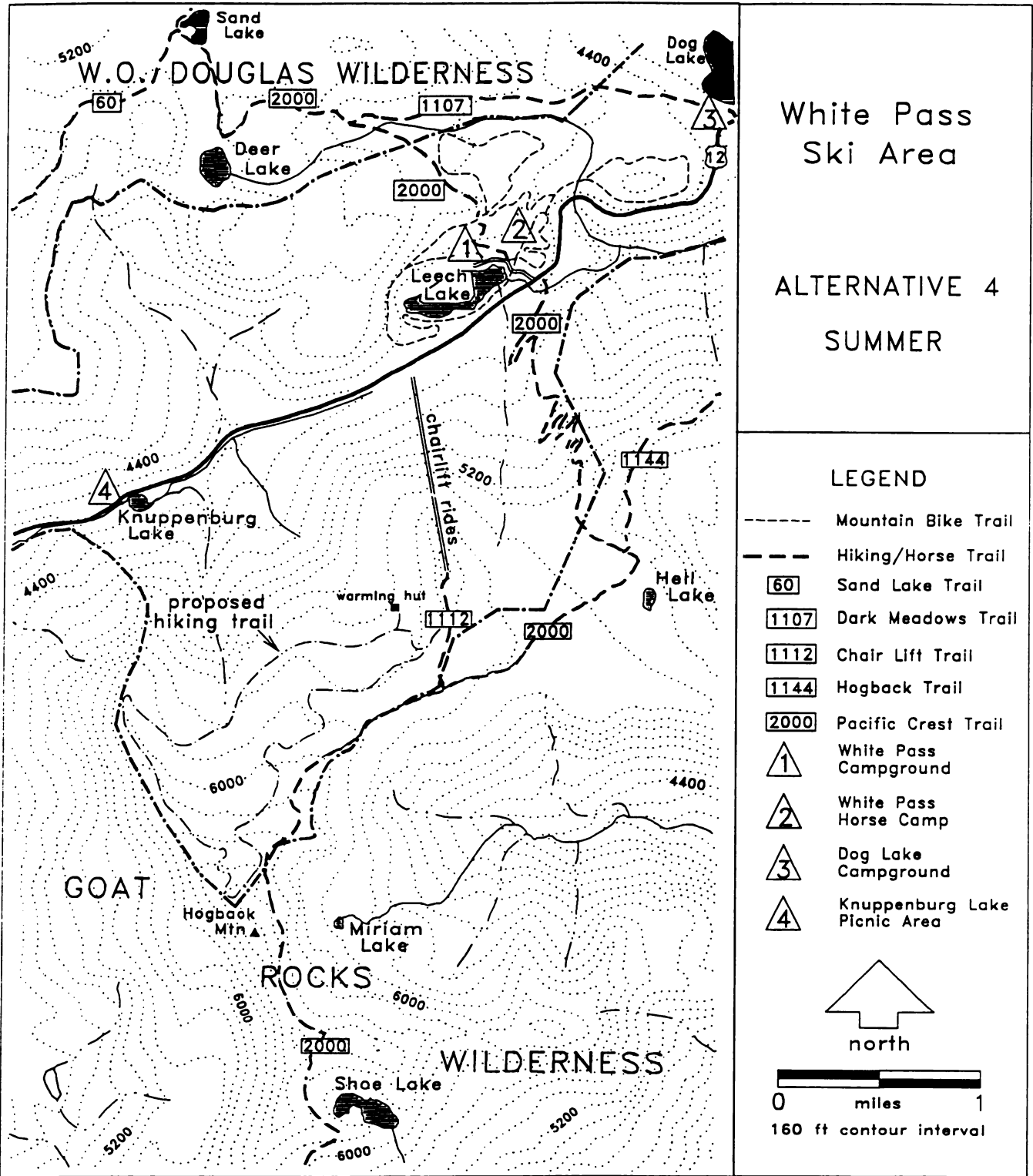




TABLE II-5, CHARACTERISTICS OF ALTERNATIVE 5

**WINTER**

Total Area: .....1,460 acres  
 Slope Capacity: .7,895 SAOT

Lift summary:

7 chair lifts  
 1 rope tow  
 Vertical rise upper elevation .....6,700'  
                   - lower elevation .....4,500'  
                   = .....2,200'

Lift Capacity: 6,200 EDC (estimated daily cap.)

Comfortable Capacities

Ability	Acres	SAOT	%
beginner	125	1365	35
intermediate	308	1755	45
expert	60	780	20
TOTALS	493	3,900	100

Projected Rec. Use (year 2000)

Alpine .....179,600  
 Nordic  
     Groomed trail .....15,000  
     Ungroomed .....3,500  
     Backcountry .....800  
 TOTAL .....198,900

Developed Area (ski runs)

Cleared timber .....333 acres  
 Open Stands .....160  
 TOTAL .....493 acres

**SUMMER**

Summer Activities (Rec. visits/year)

Leech Lake .....3,300  
 Existing Permit Area .....2,100  
 Hogback Basin .....1,050  
 Subtotal .....6,450

Wilderness  
     Miriam & Shoe Lake Basins .....950

TOTAL Recreation use .....7,400

Nordic Skiing

Groomed trails .....15.6 mi. (25 km.)  
 Non-Groomed trails .....25 mi. (40 km.)  
 Backcountry  
     Telemark .....735 acres  
     Day Tour .....1,575 acres

Base/Support Facilities:

Day Lodge: .....23,500 sq. ft.  
                   .....715 seating  
 Mid-Mountain Hut: .....4,500 sq. ft.  
                   .....300 seating

Parking:

acreage .....16.ac.  
 vehicle capacity .....2,300

Water System

Base = .....400 gpm spring  
                   .....50,000 gal. tank  
 Warming Hut = ..... Well

Waste Water Disposal

Day Lodge = septic tank/drainfield  
                   3,810 people/day capacity  
 Condominiums: = septic tank/drainfield  
                   220 people/day capacity  
 Warming Hut = composting toilet  
                   1200 people/day capacity

Service/access roads: 3.7 miles

Forest Service Facilities

Leech Lk. Campground .....80 PAOT  
 Horse Use Trailhead .....63 PAOT  
 PCT Trailhead .....28 PAOT

Chair Lift Operating to:

Pigtail Peak ..... Yes  
 Hogback Mountain ..... No

Interpretive/Naturalist Program ..... Yes

Trail System in Hogback Basin ..... Yes

**Rec. Opportunity Setting**

Existing Permit Area.....Rural  
 Hogback Basin ..... Roaded-Natural  
 Shoe Lake Basin (SLB) ..... Wilderness-Transition  
 Miriam Basin (MB) ..... Wilderness-Transition  
 W.O.Douglas (WOD) Wilderness... Wilderness-Semi-primitive

**Wilderness Objectives**

	SLB	MB	WOD
Capacity RVD's/acre/yr.....	15	15	5
Ave. # Parties Encountered/day.....	8	8	5
Camps vis.-camp.....	3	3	2

**CONSTRUCTION ELEMENTS SCHEDULING SEQUENCE**

Rebuild condominium septic system  
 Complete revegetation on Chair Lift 4  
 Simultaneously:  
 - Relocate Chair 3  
 - Relocate/upgrade rope tow  
 - Eliminate platter lift  
 - Relocate Chair 1 loading  
 Add nordic groomed trails (10 km.)  
 - Add toilets at nordic trailhead  
 Add toilets at top of Pigtail Peak  
 Add parking (1.5 acres)  
 Add run west of Quail Run  
 Add to lower shop  
 Move Ski Patrol to upper shop  
 Add employee housing  
 Upgrade power  
 Add Chair Lift 8 (ski school lift)

Add seating and ticket sales to  
 Day Lodge (3,500 sq. ft.)  
 Add Day Lodge septic system capacity  
 (1,270 PAOT)  
 Simultaneously:  
 - Build Chair 5  
 - Build warming hut toilets  
 - Add parking (3 acres)  
 Build Mid-Mountain Warming Hut, next year  
 (seating 150 PAOT)  
 Simultaneously: (when use = 135-140,000)  
 - Build Chair #6  
 - Build more toilets at warming hut  
 - Add parking (2.5 acres)  
 Add Warming Hut seating, next year  
 (150 PAOT)

**TOTAL COST.....\$3,920,000**

FIGURE II-5W

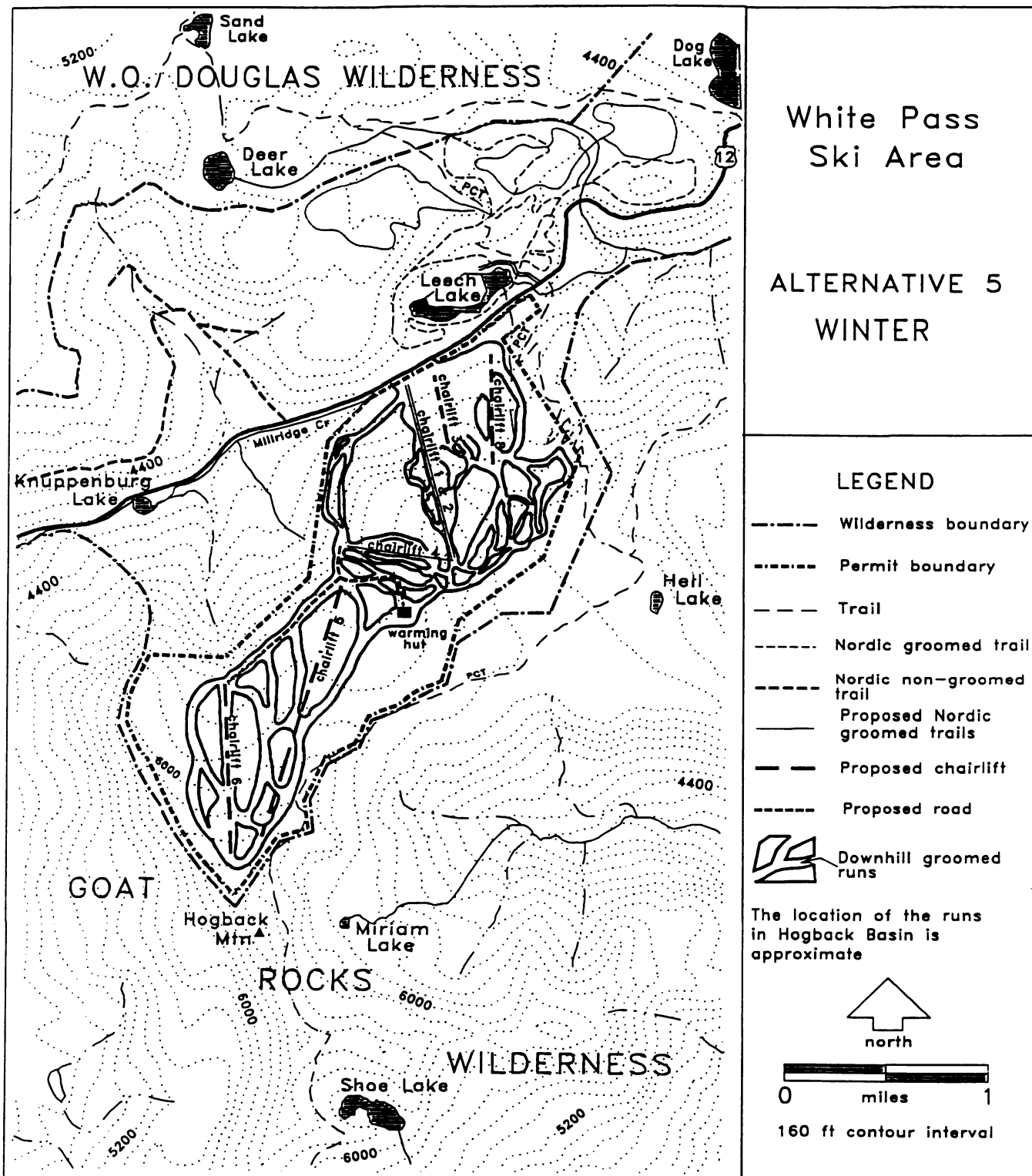
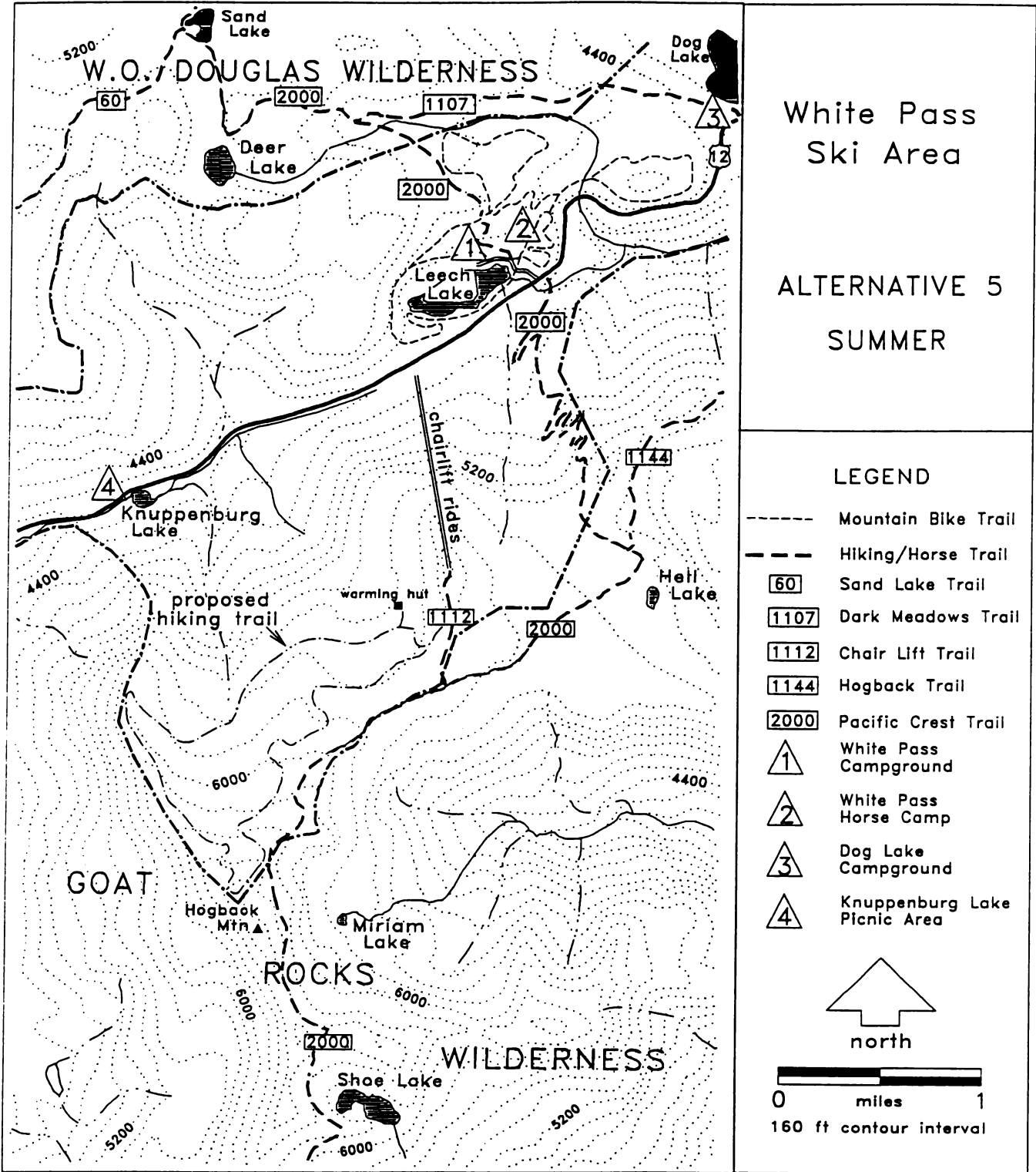


FIGURE II-5S



**TABLE II-6, CHARACTERISTICS OF ALTERNATIVE 6**

**WINTER**

Total Area: .....1,820 acres  
Slope Capacity: .7,320 SAOT

**Lift summary:**

7 chair lifts  
1 rope tow  
Vertical rise upper elevation .....6,400'  
                  - lower elevation .....4,100'  
                  = .....2,300'

**Lift Capacity:** 6,485 EDC (estimated daily cap.)

**Comfortable Capacities**

Ability	Acres	SAOT	%
beginner.....	95.....	1155.....	30
intermediate.....	293.....	1655.....	43
expert.....	127.....	1040.....	27
TOTALS.....	515.....	3,850.....	100

**Projected Rec. Use (year 2000)**

Alpine.....177,200  
Nordic  
Groomed trail.....15,000  
Ungroomed.....3,500  
Backcountry.....1,000  
TOTAL.....196,700

**Developed Area (ski runs)**

Cleared timber.....420 acres  
Open Stands.....95  
TOTAL.....515 acres

**SUMMER**

**Summer Activities (Rec. visits/year)**

Leech Lake.....3,300  
Existing Permit Area.....2,100  
Hogback Basin.....1,050  
Subtotal.....6,450

Wilderness  
Miriam & Shoe Lake Basins.....950

TOTAL Recreation use .....7,400

**Nordic Skiing**

Groomed trails.....12.5 mi. (20 km.)  
Non-Groomed trails.....25 mi. (40 km.)  
Backcountry  
Telemark.....900 acres  
Day Tour.....1,640 acres

**Base/Support Facilities:**

Day Lodge: .....23,500 sq. ft.  
                  .....715 seating  
Mid-Mountain Hut:.....4,500 sq. ft.  
                  .....300 seating  
Parking:  
acreage .....16.0 acres  
vehicle capacity.....2,300

**Water System**

Base = .....400 gpm spring  
                  .....50,000 gal. tank  
Warming Hut = .....Well

**Waste Water Disposal**

Day Lodge = septic tank/drainfield  
3,810 people/day capacity  
Condominiums: = septic tank/drainfield  
220 people/day capacity  
Warming Hut = composting toilet  
1,200 people/day capacity

**Service/access roads:** 3.7 miles

**Forest Service Facilities**

Leech Lk. Campground.....80 PAOT  
Horse Use Trailhead .....63 PAOT  
PCT Trailhead .....28 PAOT

**Chair Lift Operating to:**

Pigtail Peak.....Yes  
Hogback Mountain.....No

**Interpretive/Naturalist Program** ..... Yes

**Trail System in Hogback Basin** ..... Yes

**Rec. Opportunity Setting**

Existing Permit Area..... Rural  
 Hogback Basin ..... Roaded-Natural  
 Shoe Lake Basin (SLB) ..... Wilderness-Transition  
 Miriam Basin (MB) ..... Wilderness-Transition  
 W.O.Douglas (WOD) Wilderness... Wilderness-Semi-primitive

**Wilderness Objectives**

	SLB	MB	WOD
Capacity RVD's/acre/yr.....	15	15	5
Ave. # Parties Encountered/day.....	8	8	5
Camps vis.-camp.....	3	3	2

**CONSTRUCTION ELEMENTS SCHEDULING SEQUENCE**

Rebuild condominium septic system  
 Complete revegetation on Chair Lift 4  
 Simultaneously:  
 - Relocate Chair 3  
 - Relocate/upgrade rope tow  
 - Eliminate platter lift  
 - Relocate Chair 1 loading  
 Add nordic groomed trails (5 kn.)  
 - Add toilets at nordic trailhead  
 Add toilets at top of Pigtail Peak  
 Add parking (1.5 acres)  
 Add run west of Quail Run  
 Add to lower shop  
 Move Ski Patrol to upper shop  
 Add employee housing  
 Upgrade power  
 Add Chair Lift 8 (ski school lift)

Add seating and ticket sales to  
 Day Lodge (3,500 sq. ft.)  
 Add Day Lodge septic system capacity  
 (1,270 PAOT)  
 Simultaneously:  
 - Build Chair 5  
 - Build warming hut toilets  
 - Add parking (3 acres)  
 Build Mid-Mountain Warming Hut, next year  
 (seating 150 PAOT)  
 Simultaneously: (when use = 135–140,000)  
 - Build Chair 7  
 - Add toilets at warming hut  
 - Add parking (2.5 acres)  
 Add Mid-Mountain Hut seating, next year  
 (150 PAOT)

**TOTAL COST.....\$4,055,000**

FIGURE II-6W

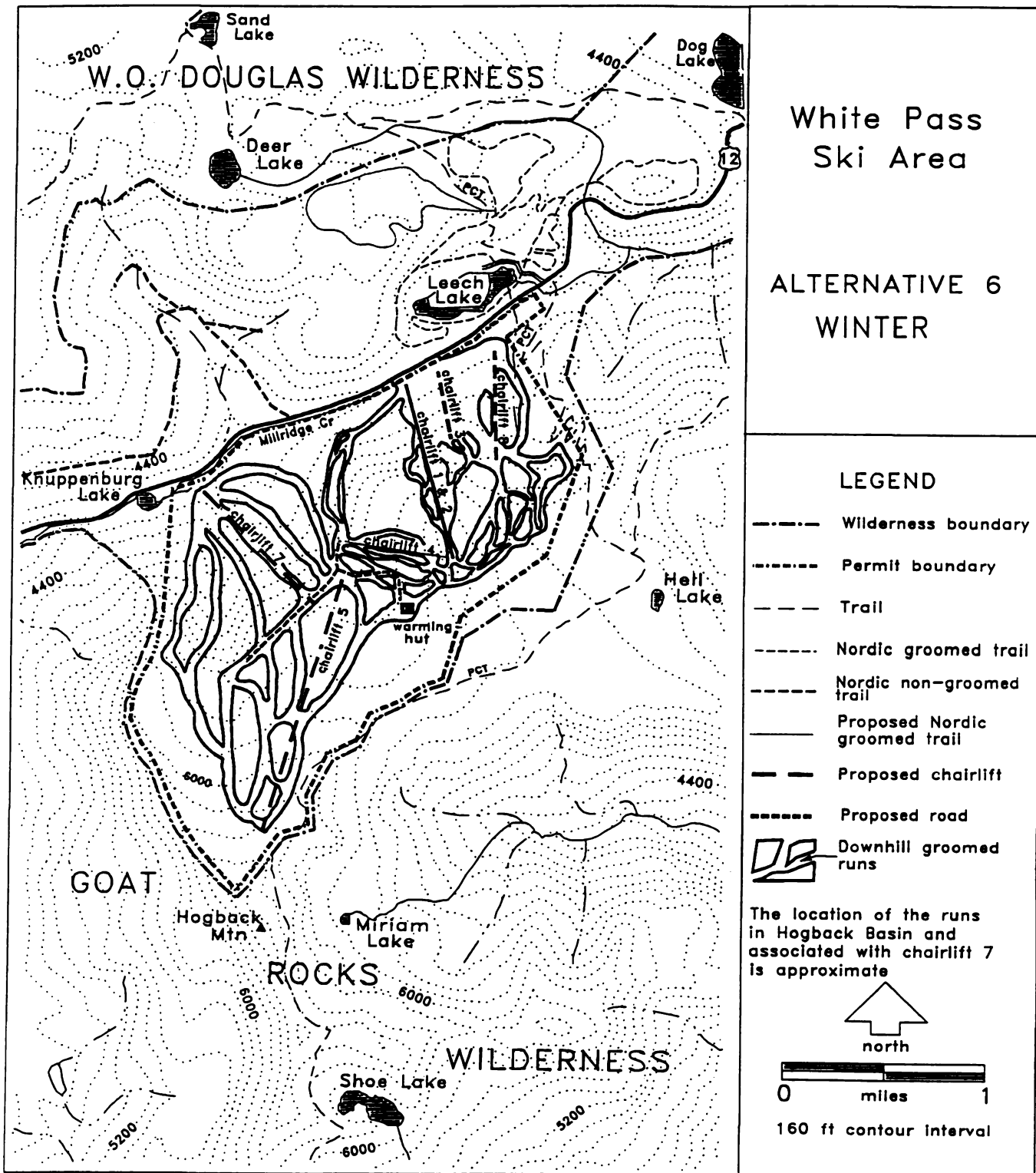


FIGURE II-6S

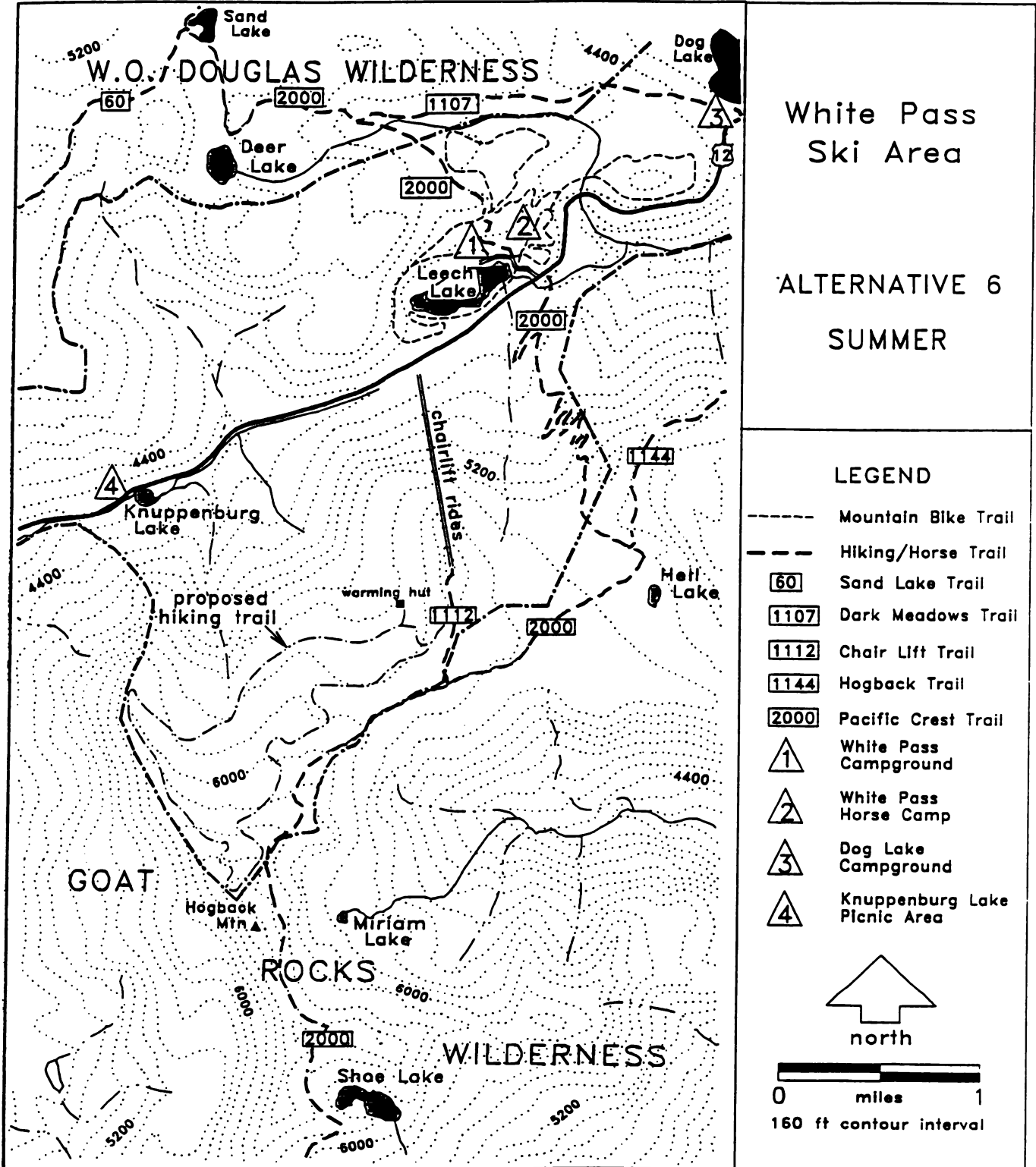




TABLE II-7, CHARACTERISTICS OF ALTERNATIVE 7

**WINTER**

Total Area: ..... 1,820 acres  
 Slope Capacity: . 8,595 SAOT

Lift summary:

8 chair lifts  
 1 rope tow  
 Vertical rise upper elevation ..... 6,700'  
                   - lower elevation ..... 4,100'  
                   = ..... 2,600'

Lift Capacity: 7,360 EDC (estimated daily cap.)

Comfortable Capacities

Ability	Acres	SAOT	%
beginner.....	125.....	1395.....	31
intermediate.....	328.....	1980.....	44
expert.....	127.....	1125.....	25
<b>TOTALS</b> .....	<b>580.....</b>	<b>4500.....</b>	<b>100</b>

Projected Rec. Use (year 2000)

Alpine ..... 210,800  
 Nordic  
     Groomed trail..... 15,000  
     Ungroomed..... 3,500  
     Backcountry..... 800  
**TOTAL..... 230,100**

Developed Area (ski runs)

Cleared timber..... 420 acres  
Open Stands..... 160  
**TOTAL..... 580 acres**

**SUMMER**

Summer Activities (Rec. visits/year)

Leech Lake ..... 3,300  
 Existing Permit Area..... 2,100  
Hogback Basin..... 1,050  
 Subtotal..... 6,450

Wilderness

Miriam & Shoe Lake Basins..... 950

**TOTAL Recreation use ..... 7,400**

Nordic Skiing

Groomed trails..... 15.6 mi. (25 km.)  
 Non-Groomed trails..... 25 mi. (40 km.)  
 Backcountry  
     Telemark..... 735 acres  
     Day Tour..... 1,575 acres

Base/Support Facilities:

Day Lodge: ..... 23,500 sq. ft.  
                   ..... 715 seating  
 Mid-Mountain Hut:..... 6,300 sq. ft.  
                   ..... 450 seating

Parking:

acreage ..... 18.75 acres  
 vehicle capacity ..... 2,700

Water System

Base = ..... 400 gpm spring  
                   ..... 50,000 gal. tank  
 Warming Hut = ..... Well

Waste Water Disposal

Day Lodge = septic tank/drainfield  
                   3,810 people/day capacity  
 Condominiums: = septic tank/drainfield  
                   220 people/day capacity  
 Warming Hut = composting toilet  
                   1,600 people/day capacity

Service/access roads: 4.0 miles

Forest Service Facilities

Leech Lk. Campground.... 80 PAOT  
 Horse Use Trailhead ..... 63 PAOT  
 PCT Trailhead ..... 28 PAOT

Chair Lift Operating to:

Pigtail Peak ..... Yes  
 Hogback Mountain ..... No

Interpretive/Naturalist Program ..... Yes

Trail System in Hogback Basin ..... Yes

**Rec. Opportunity Setting**

Existing Permit Area.....Rural  
 Hogback Basin ..... Roaded-Natural  
 Shoe Lake Basin (SLB) ..... Wilderness-Transition  
 Miriam Basin (MB) ..... Wilderness-Transition  
 W.O.Douglas (WOD) Wilderness... Wilderness-Semi-primitive

**Wilderness Objectives**

	SLB	MB	WOD
Capacity RVD's/acre/yr.....	15	15	5
Ave. # Parties Encountered/day.....	8	8	5
Camps vis.-camp.....	3	3	2

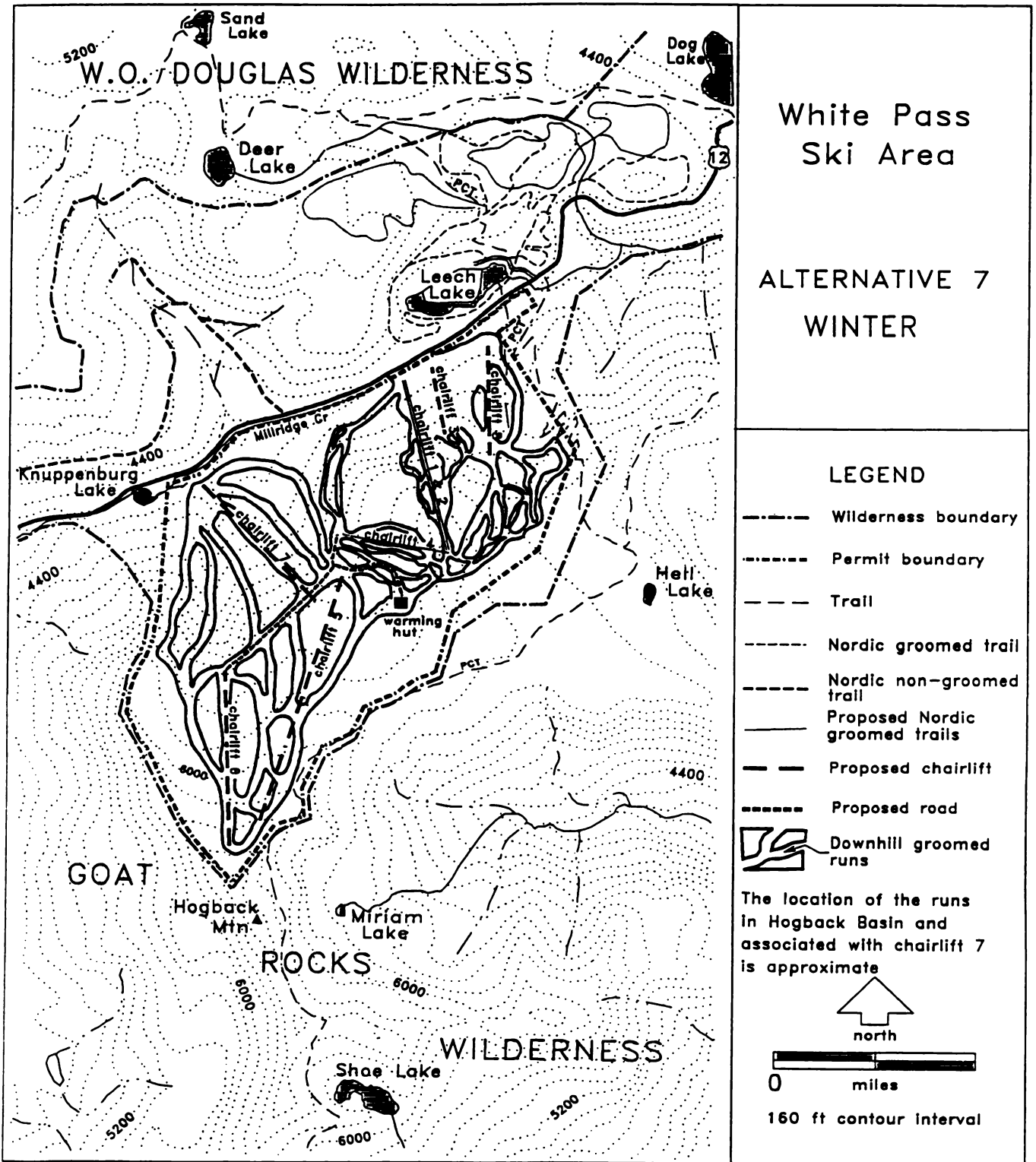
**CONSTRUCTION ELEMENTS SCHEDULING SEQUENCE**

Rebuild condominium septic system  
 Complete revegetation on Chair Lift 4  
 Simultaneously:  
 - Relocate Chair 3  
 - Relocate/upgrade rope tow  
 - Eliminate platter lift  
 - Relocate Chair 1 loading  
 Add nordic groomed trails (10 km.)  
 - Add toilets at nordic trailhead  
 Add toilets at top of Pigtail Peak  
 Add parking (1.5 acres)  
 Add run west of Quail Run  
 Add to lower shop  
 Move Ski Patrol to upper shop  
 Add employee housing  
 Upgrade power  
 Add Chair Lift 8 (ski school lift)  
 Add seating and ticket sales to  
 Day Lodge (3,500 sq. ft.)  
 Add Day Lodge septic system capacity  
 (1,270 PAOT)

Simultaneously:  
 - Build Chair 5  
 - Build warming hut toilets  
 - Add parking (3 acres)  
 Build Mid-Mountain Warming Hut, next year  
 (seating 150 PAOT)  
 Simultaneously: (when use = 135–140,000)  
 - Build Chair 6  
 - Add toilets at warming hut  
 - Add parking (2.5 acres)  
 Add Mid-Mountain Hut seating, next year  
 (150 PAOT)  
 Simultaneously: (when use = 170–175,000)  
 - Build Chair 7  
 - Add toilets at warming hut  
 - Add parking (2.75 acres)  
 Add Mid-Mountain Hut seating, next year  
 (150 PAOT)

**TOTAL COST.....\$5,270,000**

FIGURE II-7W



# White Pass Ski Area

## ALTERNATIVE 7 WINTER

### LEGEND

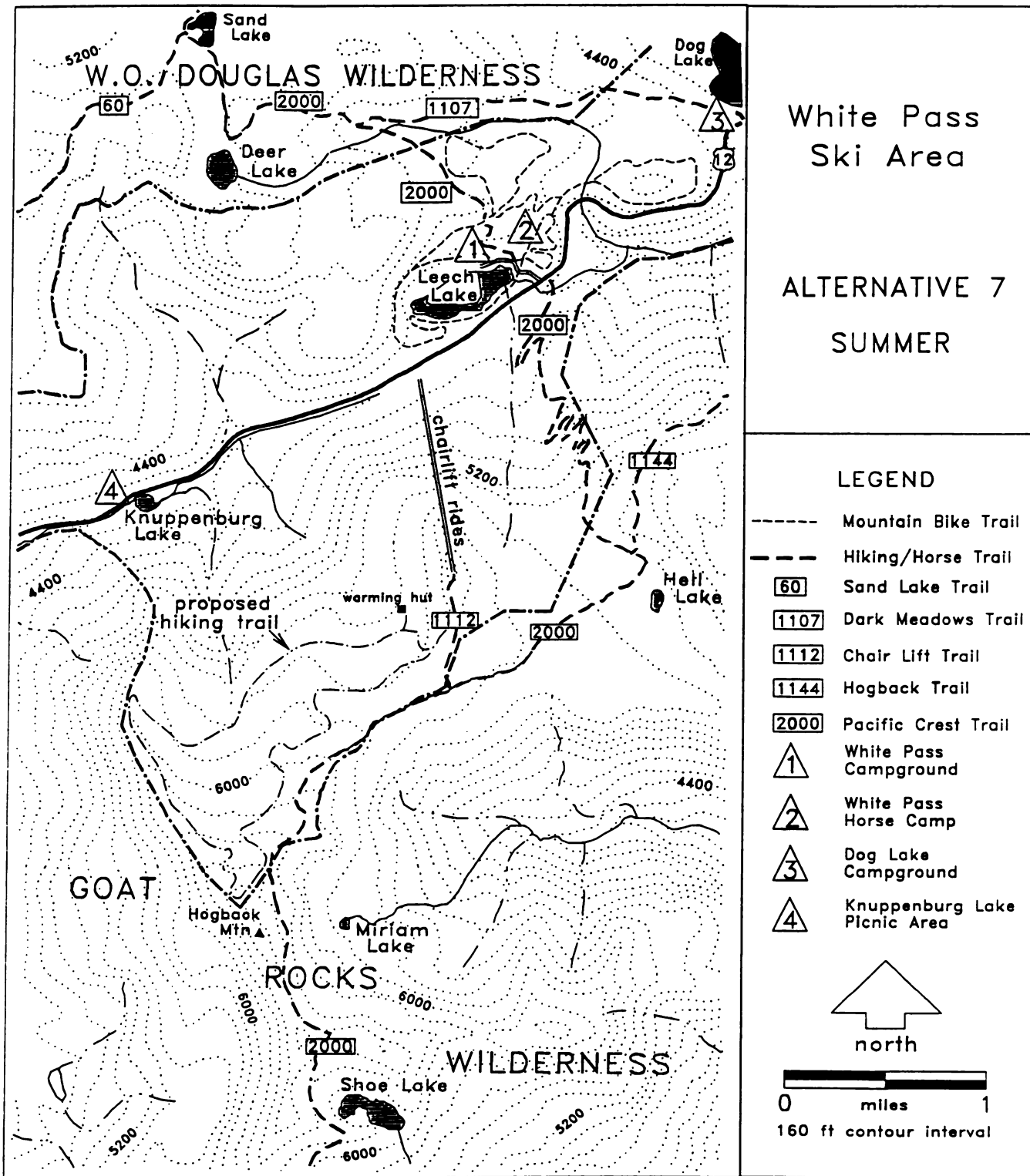
- Wilderness boundary
- Permit boundary
- Trail
- Nordic groomed trail
- Nordic non-groomed trail
- Proposed Nordic groomed trails
- Proposed chairlift
- Proposed road
- Downhill groomed runs

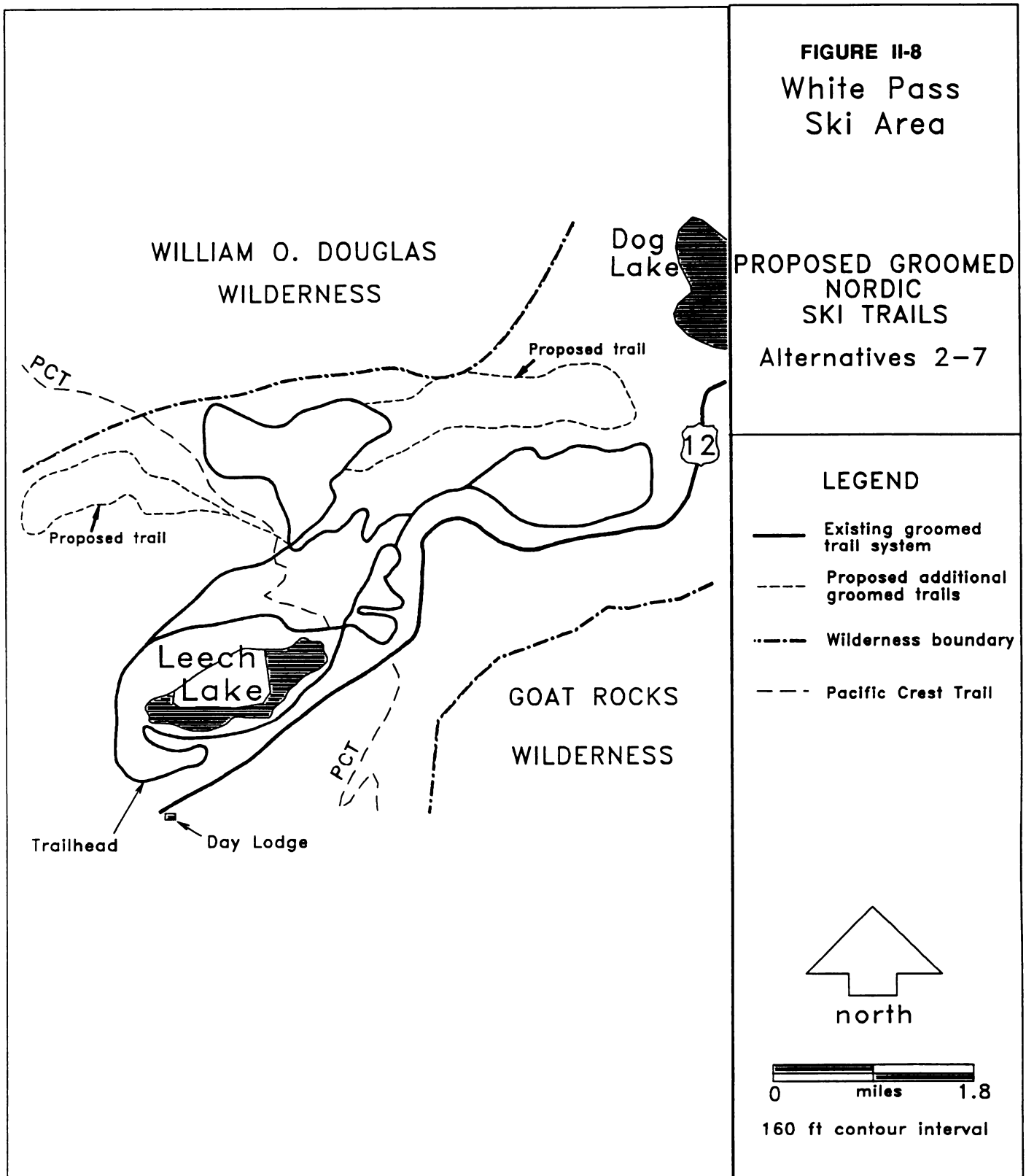
The location of the runs in Hogback Basin and associated with chairlift 7 is approximate



160 ft contour interval

FIGURE II-7S





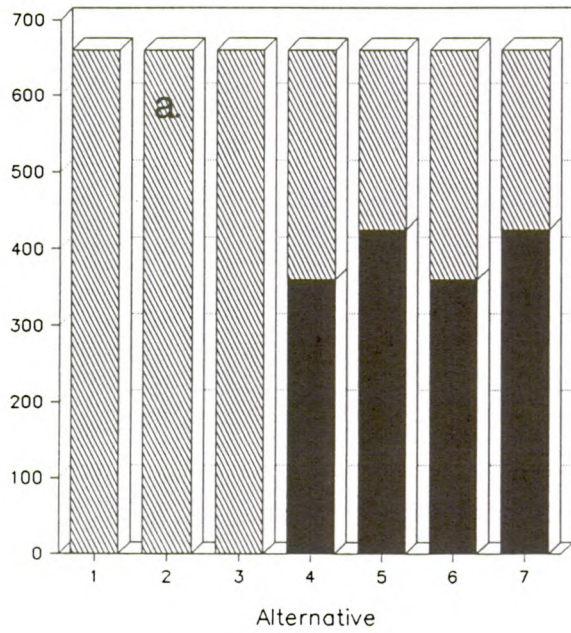
## **COMPARISON OF ALTERNATIVES**

### **DATA CHARTS**

Figures II-9 through II-12 on the following four pages summarize graphically the alternative development characteristics from Tables II-1 through II-7.

**FIGURE II-9**

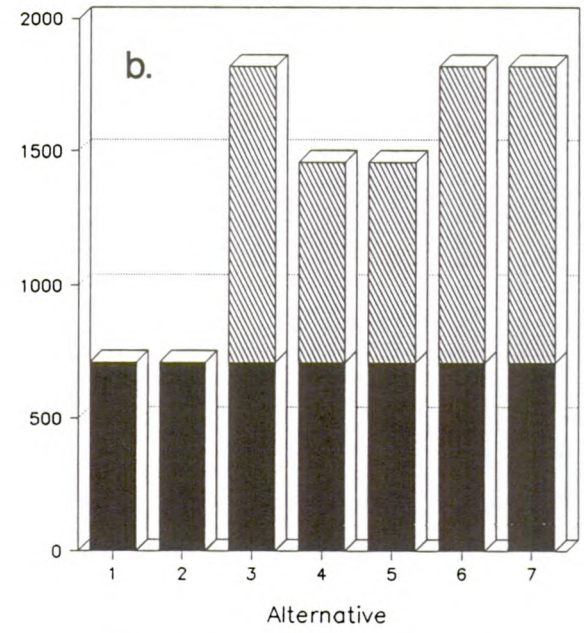
Acres HOGBACK BASIN ACREAGE



660 Skiable acres in Hogback Basin

■ Alpine    ▨ Nordic

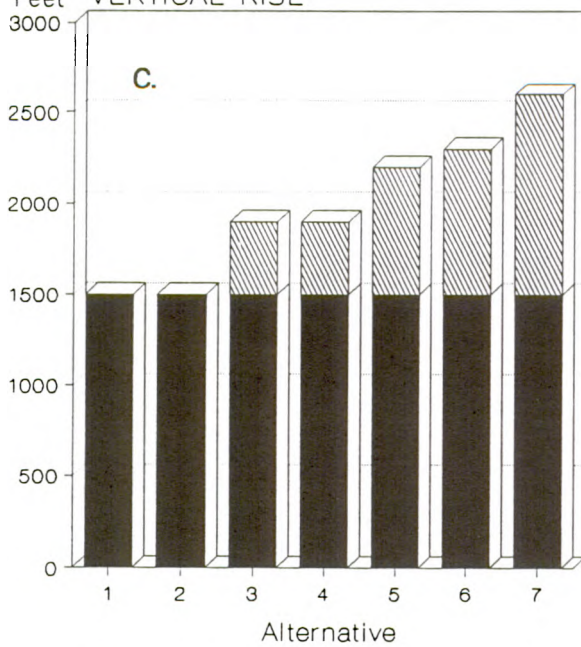
White Pass Ski Area  
Acres SPECIAL USE PERMIT ACREAGE



■ Present Acreage    ▨ Additional Acreage

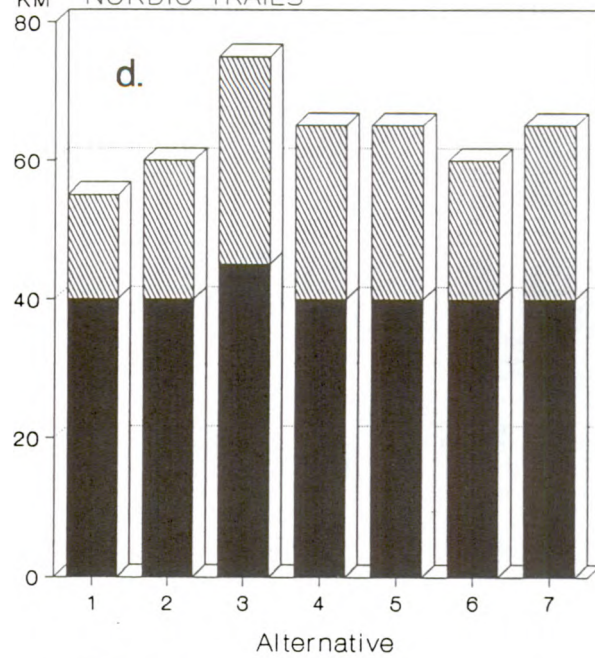
Acreage is estimated

Feet VERTICAL RISE



■ Present Vertical    ▨ Additional Vertical

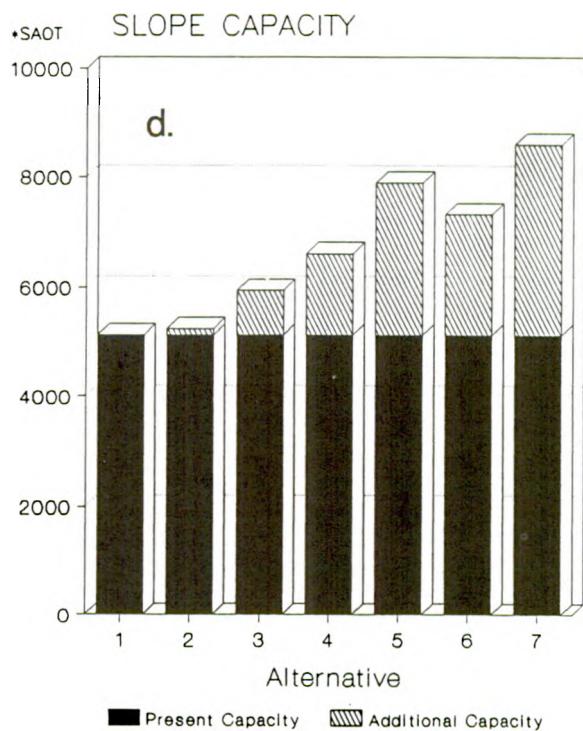
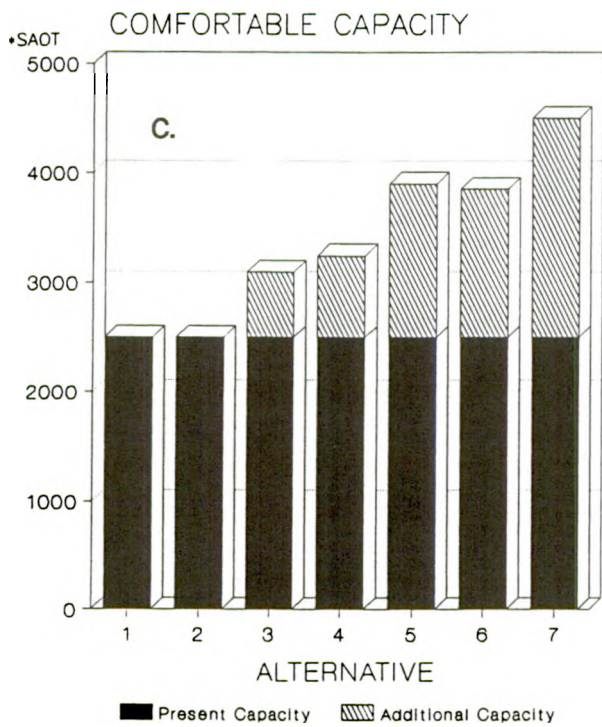
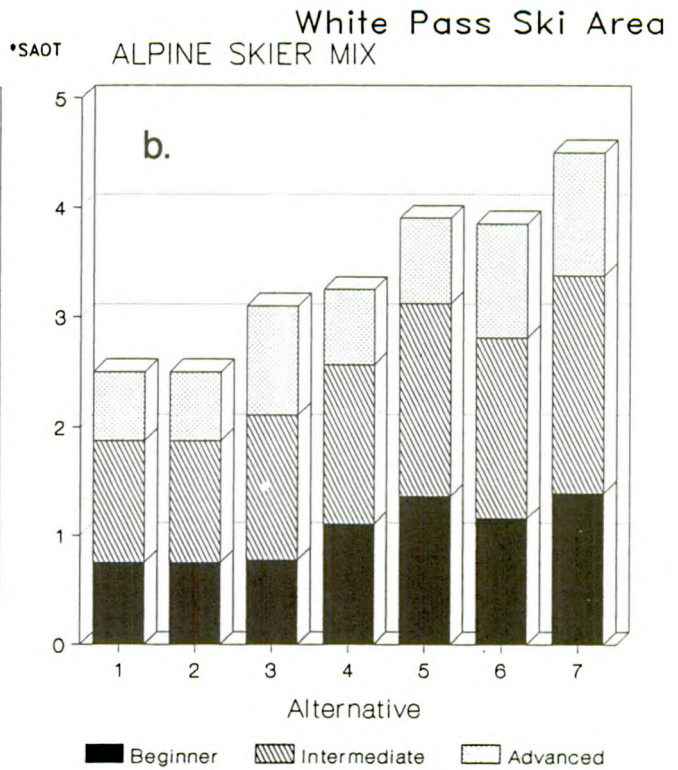
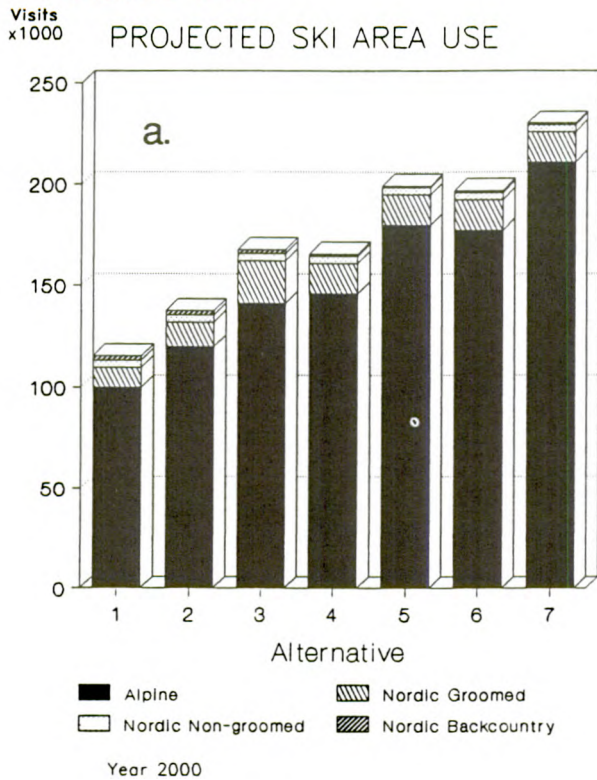
KM NORDIC TRAILS



■ Non-groomed trails    ▨ Groomed trails

Groomed

**FIGURE II-10**

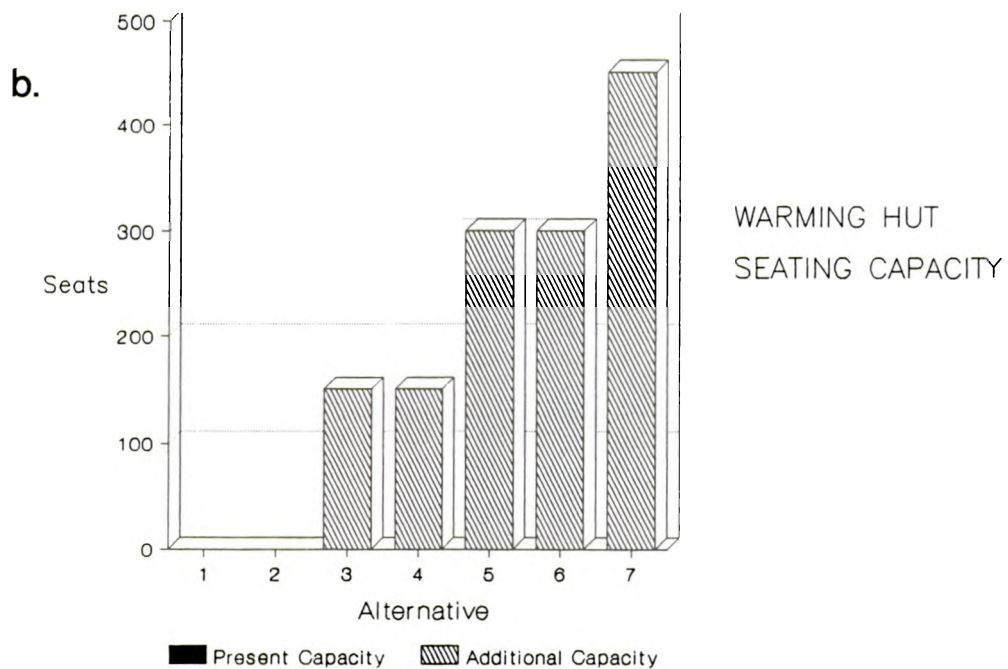
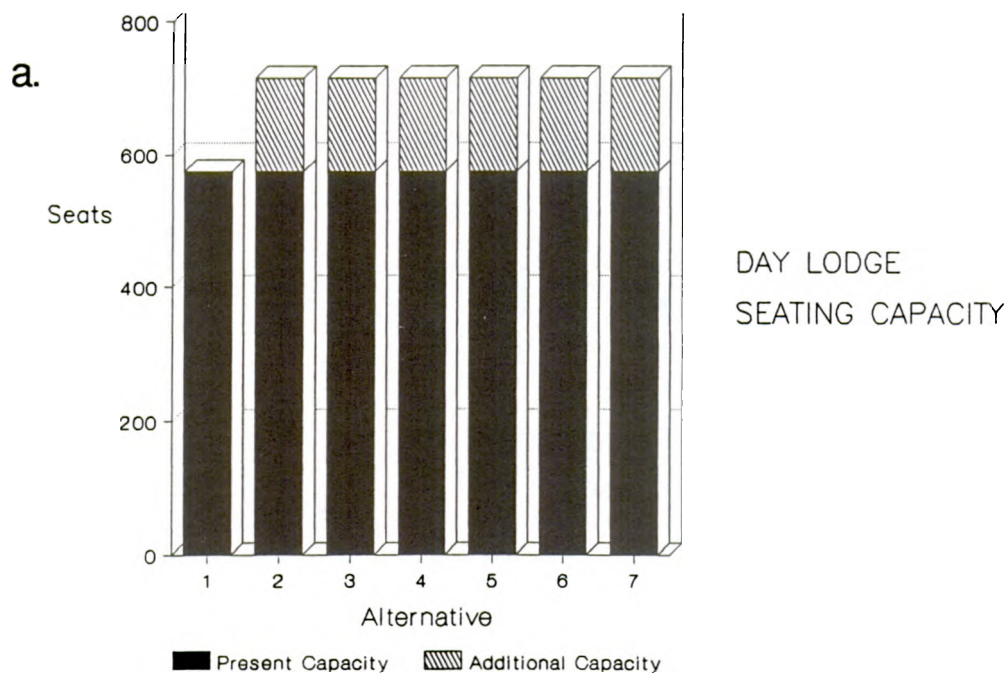


\*Skiers at one time



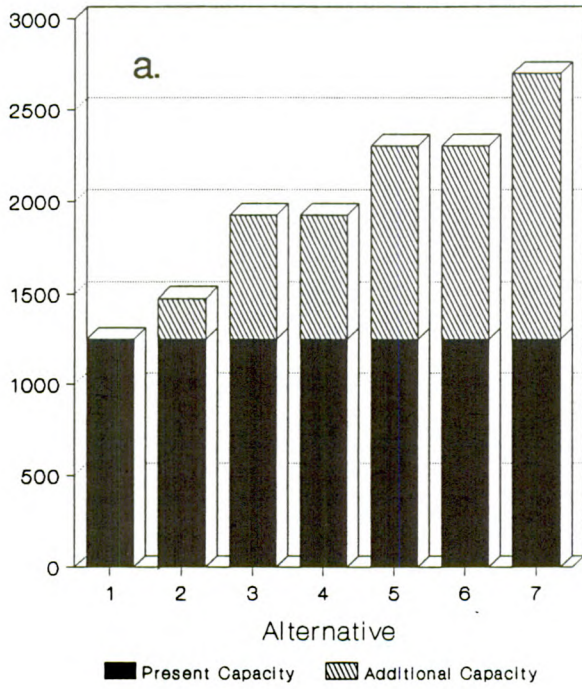
FIGURE II-11

White Pass Ski Area

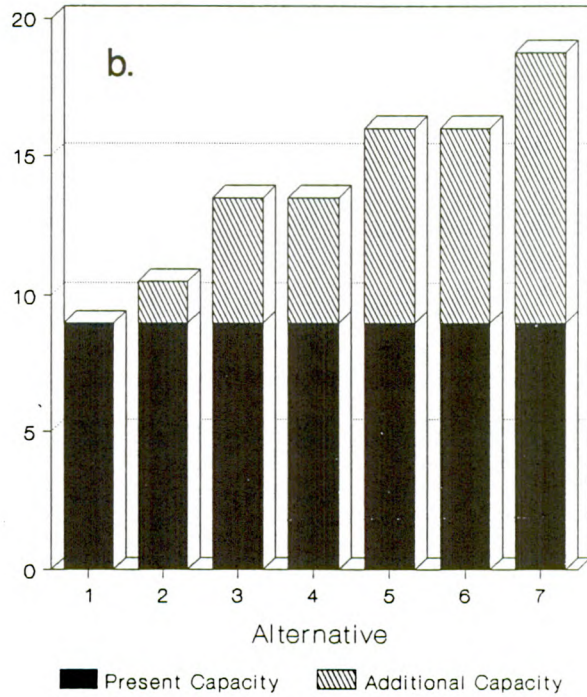


**FIGURE II-12**

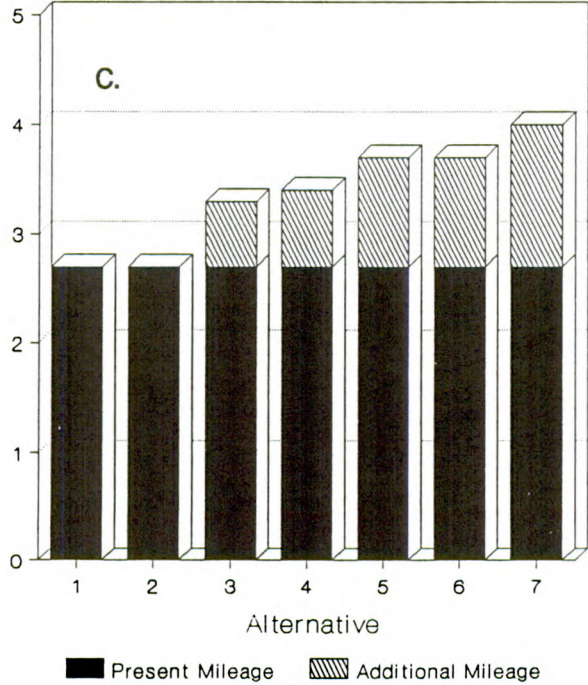
Vehicles **PARKING CAPACITY**



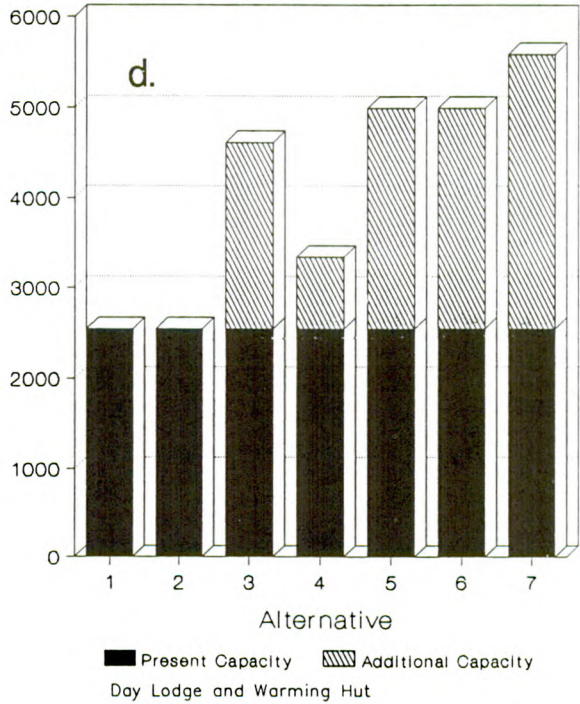
Acres **PARKING CAPACITY**



Miles **SERVICE/ACCESS ROADS**



People/day **SEPTIC SYSTEM CAPACITY**



## **COMPARISON CRITERIA**

Comparison Criteria were developed to evaluate the effects of each alternative on the major issues concerns and opportunities identified during the scoping process. They are:

1. Additional Recreation Opportunities,
2. Unique Setting of Hogback Basin,
3. Physical and Biological Effects,
4. Wilderness Impacts,
5. Displacement of Backcountry Skiers.

The environmental consequences of the alternatives are presented in Chapter IV and Tables IV-6 through IV-11, pages 447–450 summarize the effects of the alternatives using these Comparison Criteria.

## **PREFERRED ALTERNATIVE**

Alternative 2 (Improvements and Modifications of Existing Area) is the Environmentally Preferable Alternative. This alternative corrects existing problems within the present permit area with little additional environmental impact. It also provides for enhanced summer opportunities in Hogback Basin and the potential for reducing Wilderness impacts in Shoe Lake Basin. However, this alternative does not provide additional ski area capacity.

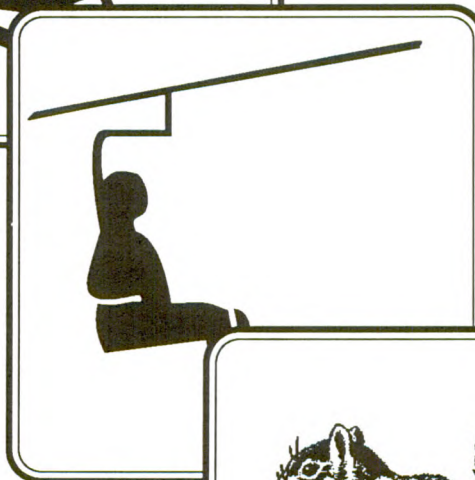
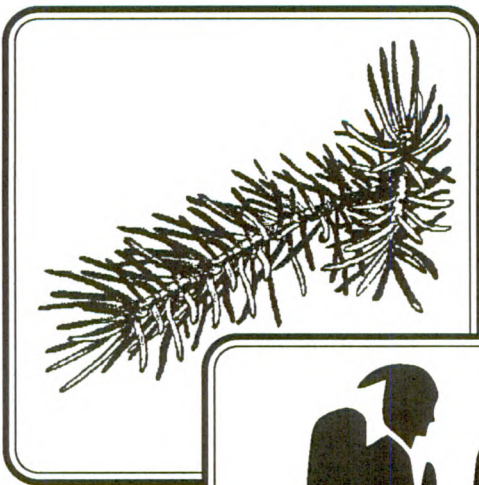
Alternative 7 (Add Chair Lifts #5, #6 and #7 and Mid-Mountain Warming Hut) is the Forest Service Preferred Alternative. Additional physical and biological effects are considered to be within acceptable limits. Winter Wilderness effects would increase due to lifts in Hogback Basin. However, summer Wilderness effects, with the interpretive program, could be similar to Alternative 2. This alternative provides the highest projected winter use, considering both alpine and nordic opportunities. The groomed nordic trail system north of the highway would be expanded. It is recognized that the unique setting of Hogback Basin will be diminished for nordic skiers, while becoming available for alpine skiers.

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# CHAPTER III

## AFFECTED ENVIRONMENT



Skiing  
Characteristics  
302  
Biological and  
Physical Description  
and Current Resources  
309  
Wildlife and Fish  
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## **CHAPTER III AFFECTED ENVIRONMENT**

This chapter describes the current physical, biological and socio-economic environments that could be affected by implementing the alternatives. To aid in describing the effects of implementing the alternatives skiing characteristics of White Pass are also presented.

### **CHANGES MADE BETWEEN THE DRAFT AND FINAL**

In response to comments made by the EPA, more detailed air quality analysis that quantifies the emission of pollutants was completed. Additional information was also provided on the spotted owl and a map is included displaying spotted owl locations and the Spotted Owl Habitat Areas established by field survey.

Extended discussions are also included for winter recreation opportunities in the general vicinity of White Pass (with map). The Threatened, Endangered and Sensitive animal species section was re-written to comply with the current management direction. The Wilderness Recreation Opportunity Spectrum (ROS), Pacific Crest Trail and transportation sections have been improved.

### **INTRODUCTION**

Potential biological and physical impacts mostly concern the area within the present or proposed Ski Area boundary. However effects on both the William O. Douglas and Goat Rocks Wildernesses are possible, particularly in the Shoe Lake and the Miriam Creek Basins. The trail system, especially the Pacific Crest National Scenic Trail (PCT), may also be affected. And some secondary effects may be anticipated along the Highway 12 corridor east and west of White Pass.

Socio-economic influences would be felt over a larger area. The most direct social and economic effects would be in the Packwood and Randle areas to the west and in the Tieton River-Rimrock Lake areas to the east. The Yakima area would also feel some economic consequences.

## **SKIING CHARACTERISTICS**

### **LAND BASE**

The entire study area is National Forest System land except for 30 acres of patented mining claims just east of Leech Lake. The current White Pass Company Special Use Permit for the Ski Area covers 689 acres, which include 315 acres that have been cleared and groomed for lifts and ski trails. The proposed expansion area comprises 1,300 acres, 800 of which were removed from the Goat Rocks Wilderness. The base area buildings, parking, and support facilities lie adjacent to the highway.

North of U.S. 12 fifteen kilometers of groomed nordic ski trails and the condominium complex are also under Special Use Permit. This involves 23 acres, for a total of 712 under permit.

### **TERRAIN**

The elevation of White Pass is 4,500 feet. Pigtail Peak, the top of the existing area, is 6,000 feet, giving a vertical rise of 1,500 feet. The proposed expansion would provide skiing from Hogback Mountain at 6,700 feet to Knuppenburg Lake at 4,100 feet, a vertical descent of 2,600 feet.

Most of the terrain lies on a northerly exposure, the preferred orientation for snow quality and snow retention. A cliff band just above the 4,880-foot level breaks the continuity of the slope and has made special designs necessary to provide fall-line skiing and to segregate skiers by ability. It is a barrier to beginning and intermediate skiers.

### **CAPACITY**

Table III-1 summarizes the capacity of the existing lifts and runs. The present slopes can accommodate more skiers than there is lift capacity to take them up the hill (5,125 vs. 3,700). The company considers about 2,500 skiers at one time to be the "Comfortable Capacity" of the area while still maintaining their quality objectives. The comfortable capacity of the White Pass Ski Area is exceeded when the quality of the skiing experience begins to decline. Factors involved include the number of runs a skier can get in a day, time waiting in lift lines and in lines for food service or restrooms, and, more subjectively, the feeling of how crowded the area is.

There are factors limiting "optimum" use of the slopes. The rock cliff through the middle of the area forms a barrier and a place where skiers congest. Another congestion area is just off the top of Pigtail Peak along the cat road. Weather conditions may also tend to concentrate skiers in some portions of the area. These all reduce dispersion on the slopes. White Pass Company's goal is to maintain a "quality" skiing experience, with short lift lines and uncrowded slopes, hence the lower Comfortable Capacity.

**TABLE III-1, EXISTING SKIER CAPACITIES, White Pass Ski Area**

Lift Capacity (4 chair lifts, Platter lift, rope tow).....3,700 SAOT\*

	Acres	Slope Capacity		Comfortable Capacity†		Optimum
		SAOT	%	SAOT	%	%
Beginner (Novice)	70	1750	34	750	30	25
Intermediate	185	2775	54	1125	45	50
Advanced (Expert)	60	600	12	625	25	25
<b>TOTALS</b>	<b>315</b>	<b>5125</b>	<b>100</b>	<b>2500</b>	<b>100</b>	<b>100</b>

[\* Skiers At One Time

†White Pass Co. input: Comfortable Capacity = SAOT while maintaining skiing quality goals.]

(Source: White Pass Company Master Plan, 1979)

**SNOW COVER**

The “Master Plan Program for White Pass, Washington (May 1979)” states that the average annual snowfall at White Pass is 150 to 200 inches. This compares favorably with other Pacific Northwest ski areas and with many western destination resorts.

The elevation of a ski area is extremely important insofar as the higher the elevation, the greater the snowfall, the greater the accumulation of snow, and the longer the ski season. Snow accumulation at the top terminals of Chair Lifts 1 and 2 is reported to be one and one-half to two times greater than in the base area.

**WEATHER**

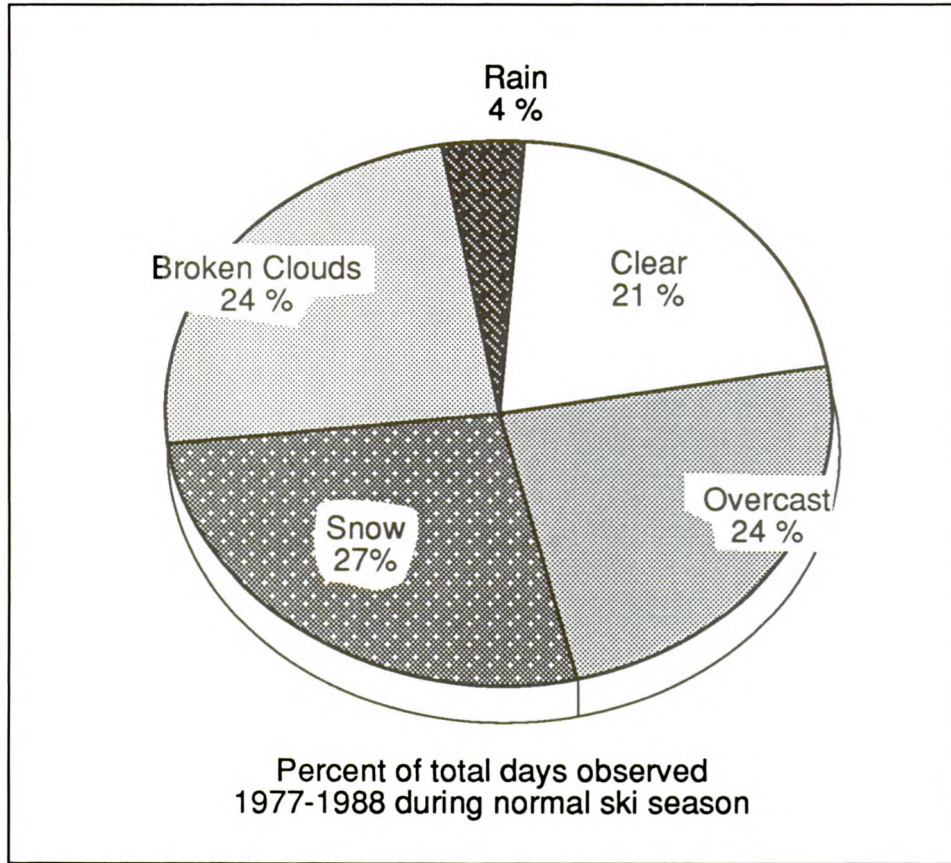
Good snowfall and retention provide a ski season of about 160 days per year. This is, however, subject to the great variations in weather which are common in most United States regions, and also to the extremes common to the North American Western Coastal Ranges.

Daily weather observations were made at the Ski Area during the October to April ski seasons from 1977 to 1987. These are summarized in Figure III-1.

For the Master Plan, micro weather data were collected in the Ski Area during the 1977-78 snow season. This was a good, average year. These 185 observations are summarized in Table III-2.



**FIGURE III-1, WEATHER OBSERVATIONS**



(Source: Observations and records of Mary Mahre, wife of Mountain Manager Dave Mahre)

**TABLE III-2, SNOW AND TEMPERATURE OBSERVATIONS, WHITE PASS, WASHINGTON, OCT. 30, 1977–MAY 13, 1978**

Monthly Summaries - Base Area		
Month	Snow Depth (in.)	Temperature (°F.)
October	6	32
November	5-21	36
December	3-24	10-36
January	22-44	5-30
February	43-54	10-34
March	53-18	14-36
April	18-10	20-37

(Source: Ski Area Records. From "A Master Plan Program for White Pass Washington," Mel Borgersen & Associates, Ltd. May, 1979)

## **AVALANCHE POTENTIAL**

Avalanche potential within the study area is shown in Figure III-2. The existing White Pass Ski Area is classified as a Class C avalanche area. Class C means a low incidence of avalanches and a low risk.

Winds from the south, southwest and west tend to develop ridge-line cornices and heavy snow deposits on the lee side of the ridges above the Ski Area. Some of these slopes are between 30 and 50 degrees in pitch, which also contributes to slide hazards.

Slide areas within the existing Ski Area are readily accessible to control personnel from the upper terminals of Chair Lifts 1 and 2. No control work is currently done on Hogback Mountain and other areas to the south.

Avalanche hazard within Hogback Basin is negligible. The combination of terrain and prevailing storm winds promotes stable snow conditions. The Basin's north aspect minimizes conditions associated with high-radiation, springtime instability. Snow pack in mid-winter and uniform temperature through the season contribute to stability. Also, average slope angle is between 10 and 15 degrees and most avalanche activity occurs on slopes from 30-45 degrees. Extending present avalanche control practices into this area would provide for the safety of skiers there, although the area needs to be checked for small pockets, swales or steep pitches that might require special control.

Relative to high (Class A) avalanche areas such as Alta in Utah, Heavenly Valley in California and Crystal Mountain in Washington, the avalanche hazard for areas outside the proposed Permit Area are considered moderate. This is primarily due to weather-induced changes within the snowpack. The temperature of the snow itself is generally near freezing and this causes the snow crystals to bind together. Freezing and thawing cycles also contribute to stable conditions. However, there are cycles of extreme instability caused by wind-deposited snow, especially during and immediately following storms.

Avalanche potential of five areas of concern is summarized as follows:

### **WEST SIDE OF HOGBACK RIDGE - MODERATE RISK AT ALL TIMES.**

- Slopes over 30 degrees.
- Prevailing wind is southwest to west.
- High risk with quiet storms (winds less than 7-8 mph.) which result in heavy deposits on these windward slopes.
- Also subject to strong solar radiation which can cause wet snow avalanches.

### **MIRIAM BASIN - HIGH RISK AREA**

- Slopes of 20-30 degrees, with steep rock outcrops at the head of the Basin.
- Wind is the primary factor creating hazard here.
- In the lee of the ridge, which results in heavy, unstable snow deposits and slab avalanche potential.

- Cornices also form which results in additional risk, both as an avalanche triggering factor and as an enticing but unstable viewpoint for skiers.

**SHOE LAKE BASIN - MODERATE TO HIGH RISK AREA**

- Similar conditions to Miriam Basin.
- Also has periods of high hazard during warm periods of high solar radiation.

**SOUTHERN END OF HOGBACK RIDGE (OFF MAP) -  
MODERATE TO HIGH RISK**

- Steep, strongly insolated slope.
- Attractive to more adventuresome skiers who desire to cover more ground.
- May be unstable due to heavy snow deposits and high solar radiation.

**EAST OF UPPER TERMINAL OF PROPOSED CHAIR LIFT #5 -  
HIGH RISK**

- A portion of Miriam Basin, but easily reached from the lift.
- A steep, rocky starting zone for avalanches.

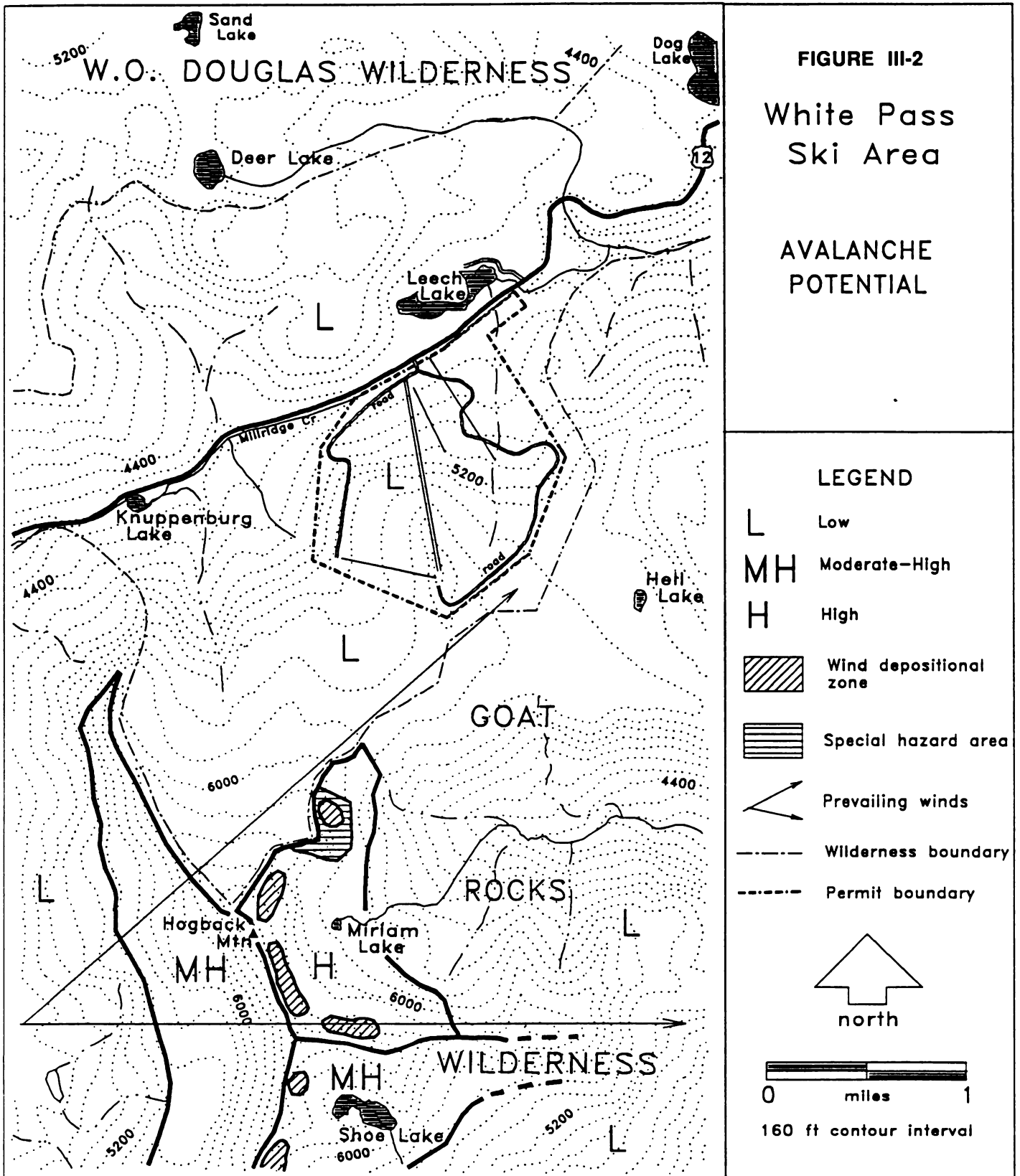
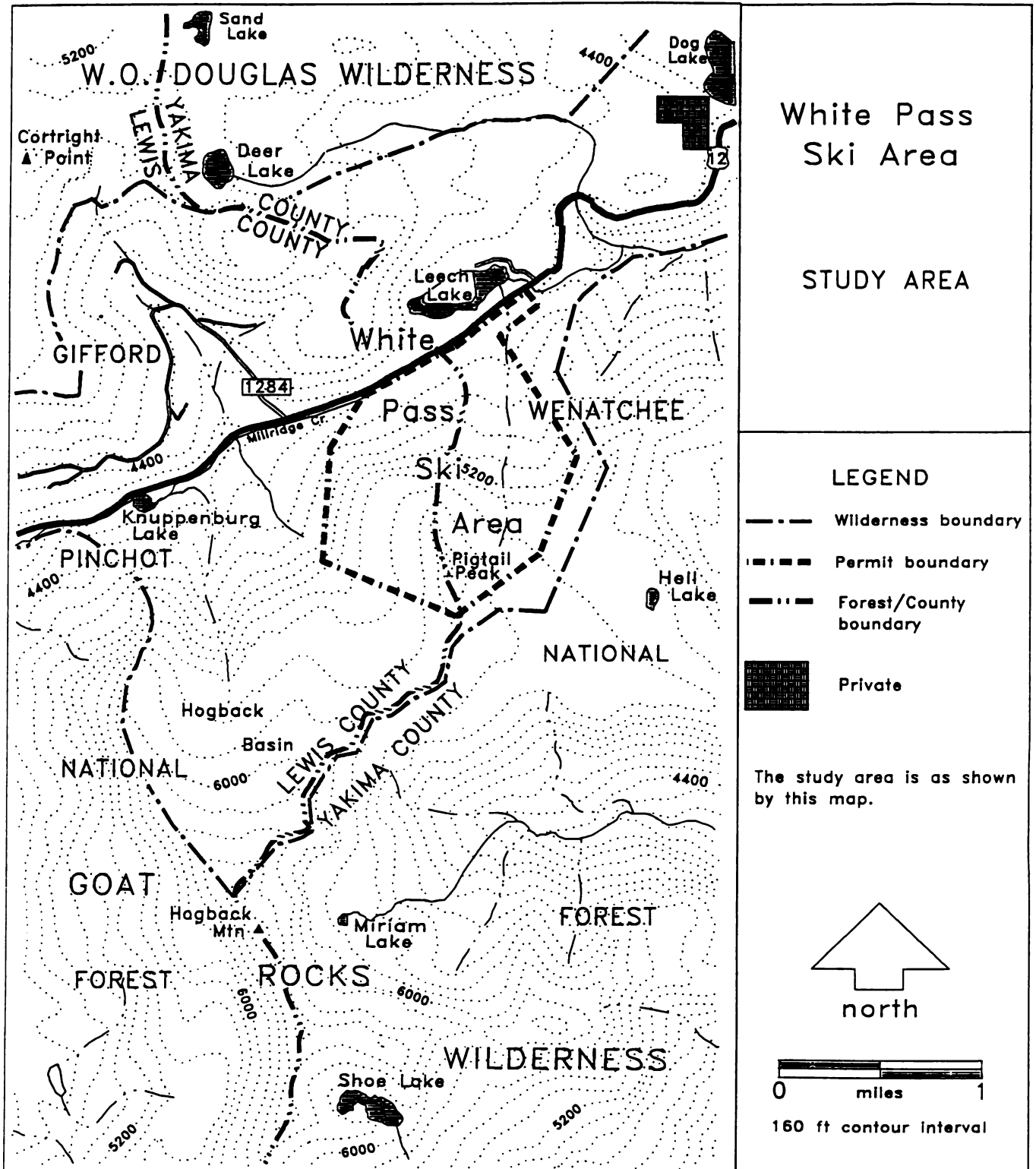


FIGURE III-3



## **BIOLOGICAL AND PHYSICAL DESCRIPTION AND CURRENT RESOURCES**

### **TOPOGRAPHY**

The study area lies on both sides of the crest of the Cascade Mountains. Elevation at White Pass is 4,500 feet. The area south of the pass is characterized by a network of hogback ridges rising to 6,500–6,800 feet above sea level. Glacial cirques drop off these ridges, e.g., Hogback Basin, Shoe Lake Basin and Miriam Lake Basin. On the south side of the Pass the study area runs from 4,100 feet at Knuppenburg Lake to nearly 6,800 feet at Hogback Mountain. A cliff line traverses the middle of the area between the 4,800- and the 5,200-foot levels. Generally smooth slopes lie below the cliff. The area north of the Pass is characterized as flat to rolling with some short, steep headwalls. [See Figure III-3 for the White Pass Study Area.]

### **CLIMATE**

Precipitation is influenced by the Cascade Mountains. Moist air from the Pacific Ocean climbs over the Cascades, cooling as it rises. The cool air, unable to hold as much moisture as when it is near the ocean, drops a large part of it on the west side of the mountains and along the crest. Average annual precipitation at White Pass is about 45 inches, much of it falling during the winter as snow, with average total snowfalls being 150 to 200 inches.

Winter temperatures may drop to –20 degrees F., and summer temperatures seldom exceed 80° F.

[See “Skiing Characteristics of White Pass,” above, for additional information on the area’s weather.]

### **AIR QUALITY**

In 1967 Congress passed the Clean Air Act and amendments to the Act were added in 1972 and 1977. The Act provided for the prevention of significant deterioration (PSD) of air quality. The intent of the PSD is to limit air degradation in those areas of the country where the air quality is much better than standards. National parks, Wilderness areas, and certain Indian reservations were designated as Class I airsheds. The remainder of the country is Class II. In Class I airsheds only a small increment of air quality deterioration is permissible. Although the PSD permit provisions of the Clean Air Act apply only to major stationary sources of air pollution (motor vehicles are mobile sources), the EPA uses them to determine the degree of potential impacts of other sources on air quality.

Currently, ambient air quality standards for carbon monoxide are:

40,000 micrograms/cubic meter (1 hour)

10,000 micrograms/cubic meter (8 hours).

Ambient air is that air external to buildings where the public has access. No increments for carbon monoxide have been established. The EPA has also established national standards for PM concentrations: an annual arithmetic average of 60 micrograms/cubic meter ( $\mu\text{g}/\text{m}^3$ ) and a 24-hour average of 150  $\mu\text{g}/\text{m}^3$ . The allowable incremental increase in 24-hour average particulate matter for Class I airsheds, after a baseline date for PM has been triggered, is 10  $\mu\text{g}/\text{m}^3$  and 37  $\mu\text{g}/\text{m}^3$  for Class II airsheds. That is, concentrations of PM as of the baseline date cannot be increased by more than 10  $\mu\text{g}/\text{m}^3$  and 37  $\mu\text{g}/\text{m}^3$  in Class I and Class II airsheds, respectively.

Since no air quality monitoring has been conducted in the vicinity of the White Pass Ski Area, an air quality analysis assuming reasonably foreseeable conditions was performed using computer models developed by the EPA. The analysis was done to estimate the existing air quality and to compare potential impact of expansion on it. Major sources of air pollution identified for the Ski Area include carbon monoxide (CO) from vehicle exhaust and residential fireplaces, and particulate matter (PM) from fireplaces. PM in the form of dust from unpaved parking lots and roads is considered insignificant because the unpaved parking lots and roads are generally covered by snow and ice on peak use days. Other minor sources of air pollution include a propane fireplace at the Ski View restaurant, gas-fired grills in the day lodge and the restaurant, and exhaust emissions from five snow groomers.

Only that portion of the Goat Rocks Wilderness established in the 1964 Wilderness legislation is a Class I airshed. The acreage added in the 1984 Washington Wilderness Bill is Class II, as is the William O. Douglas Wilderness. (Legislation is being considered, however, that would make all Wilderness Class I.) A simple screening technique, SCREEN version 1.1, was used to model and estimate the potential impacts of the expansion on the local air quality and the Class I airshed adjacent to the Ski Area, the Goat Rocks Wilderness.

#### PARTICULATE MATTER

Emission factors for estimating the concentrations of particulate matter (PM) from fireplaces and wood stoves are published in EPA Manual AP-42 (*Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources*). The average PM emission from fireplaces is 14 grams/kilogram of wood burned (AP-42, Table 1.9-1). Assuming that ten pounds of wood are burned in an hour, each fireplace emits an average of 64.4 grams of PM in an hour.

The existing reasonably foreseeable scenario for PM would result when all 25 fireplaces in the condominium complex are operating at the same time. The existing 24-hour PM concentration estimated by SCREEN at the four sites above are:

PCT at Goat Rocks Wilderness boundary .....	32.9 $\mu\text{g}/\text{m}^3$
PCT at Miriam Basin*.....	11.8 $\mu\text{g}/\text{m}^3$
PCT at W.O. Douglas Wilderness boundary.....	35.1 $\mu\text{g}/\text{m}^3$
Shoe Lake Basin*.....	8.2 $\mu\text{g}/\text{m}^3$

(\* Class I airshed)

Maximum concentrations of particulate matter occur within the immediate vicinity of their source, the condominiums. SCREEN indicates a maximum 24-hour concentration of 82  $\mu\text{g}/\text{m}^3$  would occur about 200 meters from them.

## CARBON MONOXIDE

### VEHICLE EMISSIONS

MOBILE4, a computer program that calculates emission factors for CO (and hydrocarbons and nitrogen oxides) was used to determine the emission factors for the conditions present at the Ski Area. The greatest potential impact to air quality in terms of CO emissions occurs at the end of the ski day when most skiers leave. For the purposes of this EIS, a reasonable foreseeable case analysis was completed using MOBILE4. Assumptions configured into MOBILE4 include the following:

- The majority of the skiers leave the area in a one-hour time span at the end of the ski day;
- 90% of the vehicles are in the cold start mode (i.e., haven't been run for four hours and one hour, non-catalyst and catalyst, respectively);
- The vehicles are allowed to warm up an average of five minutes prior to leaving the parking area; and,
- The vehicles reach an average speed of 10 mph within the Ski Area as defined by SCREEN.

Added to the Ski Area traffic is the non-Ski Area traffic that passes through during that one hour time. The through traffic is assumed to be travelling 20 mph.

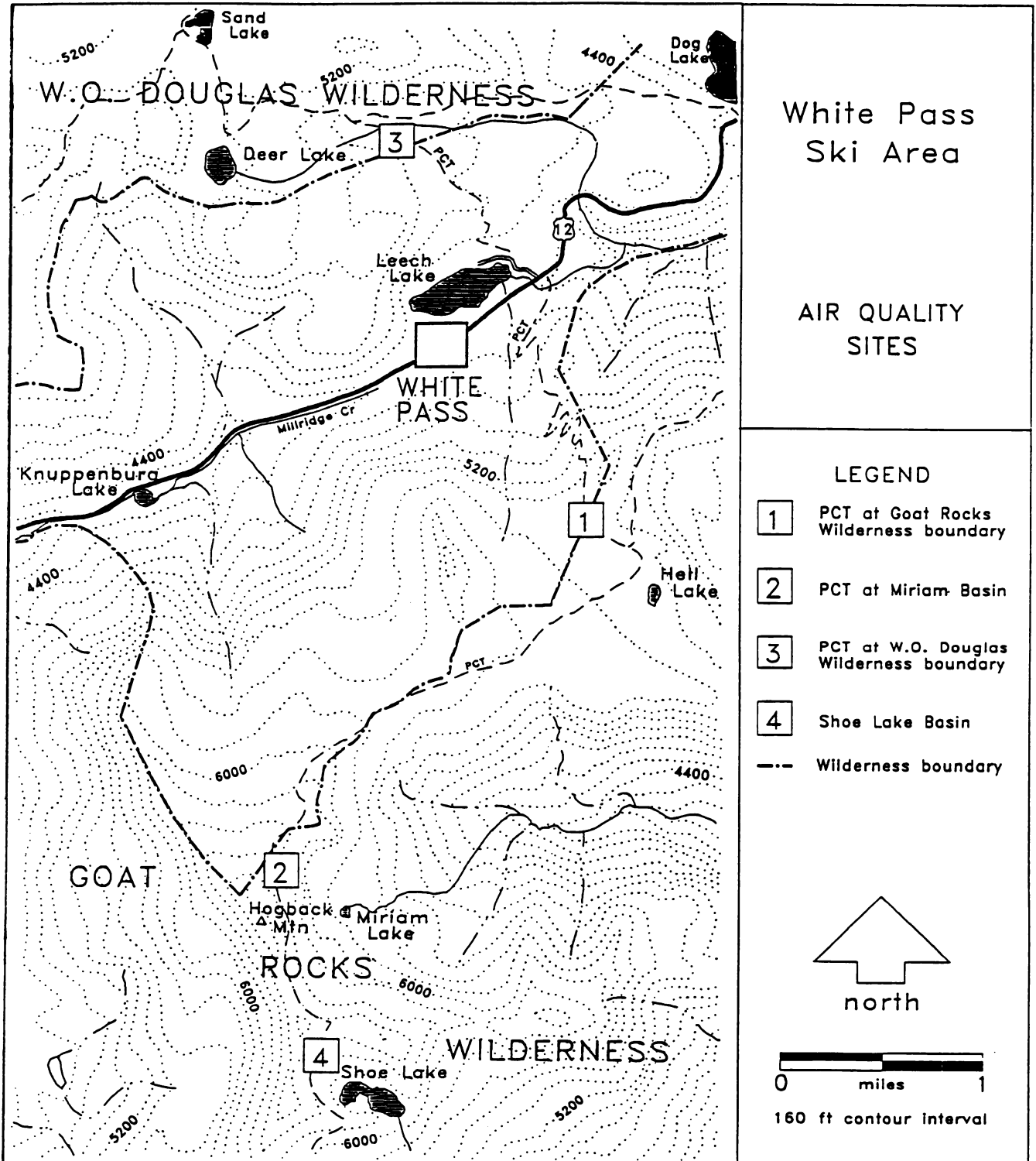
### FIREPLACE EMISSIONS

Currently there are approximately 25 fireplaces in the condominium units and another fireplace in the day lodge. However, there has been a general trend towards removing them from the condominiums because they require high maintenance and they take up a lot of space. Similarly, the fireplace in the lodge is seldom used. According to EPA manual AP-42, *Compilation of Air Pollutant Emission Factors*, 85 grams of CO is produced by every Kilogram of wood burned in a fireplace. Assuming ten pounds of wood (4.6 kg.) burned in an hour, that would be 850 grams emitted each hour.

The output from MOBILE4 and the estimated total emissions from fireplaces were combined and entered into SCREEN with the following assumptions: the cumulative point sources (vehicles and fireplaces) can be modeled as an area source; the area source is a square with dimensions commensurate with the capacity of the the existing and proposed parking areas (e.g., the existing nine acres of parking was modeled as a square 219 meters on a side and the proposed total of 18.75 acres as a 275-meter square); and, the terrain is flat. Modeling an area such as White Pass as flat, the program may generate higher emission results than expected from mountainous terrain such as is actually there. Some restrictive terrain exists, but generally the terrain at White Pass allows for dispersion and flow of air; it is not a bowl that can trap concentrations of air pollution. Also, the terrain drops off relatively quickly on both sides of the pass and this provides an outlet for movement and dispersion of the air.



FIGURE III-4



**REASONABLY FORESEEABLE ANALYSIS RESULTS**

Using the assumptions discussed above for SCREEN and MOBILE4 in modeling a reasonably foreseeable scenario for air quality, none of the nearby Wilderness would have its air quality lowered by CO levels exceeding current one-hour standards. However, one-hour standards for CO would be exceeded within the parking area, and that area within 300 meters of the center of the parking lot. The highest CO concentration in the Wilderness occurs adjacent to the base area, where the Goat Rocks Wilderness boundary is about one quarter mile (400 meters) away. At that closest possible point the one-hour CO concentrations, as modeled by SCREEN, are 29,960  $\mu\text{g}/\text{m}^3$ . The farther away from the source of the emissions, the lower the air pollution concentrations. For purposes of comparison, estimated one-hour CO concentrations for four sites along the Pacific Crest Trail (PCT) are:[See site map, Figure III-4.)]

PCT at Goat Rocks Wilderness boundary .....	6518 $\mu\text{g}/\text{m}^3$
PCT at Miriam Basin* .....	2346 $\mu\text{g}/\text{m}^3$
PCT at W.O. Douglas Wilderness boundary .....	6981 $\mu\text{g}/\text{m}^3$
Shoe Lake Basin* .....	1642 $\mu\text{g}/\text{m}^3$

(\* Class I airshed)Air Quality

**GEOLOGY AND PHYSIOGRAPHY**

**LAND TYPES**

Three distinct geomorphic types based on terrain and underlying geologic materials are described in "A Geotechnical Assessment of the White Pass Proposed Expansion," by James P. Brazil and Richard M. Wooten, November, 1985. These descriptions are as follows, with the authors' comments on slope stability and groundwater. [See Figure III-5.]

**LAND TYPE A**

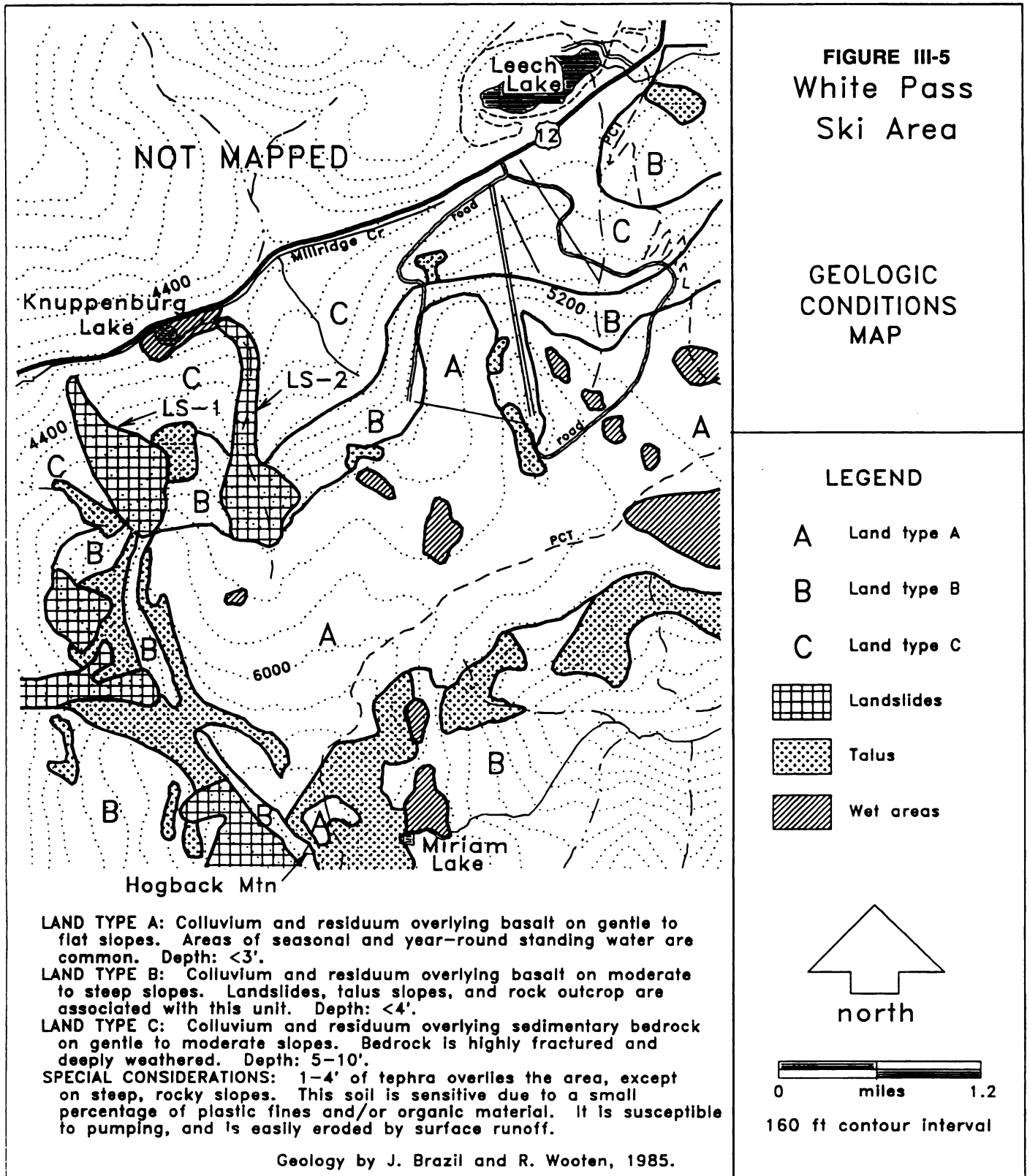
Gentle northeast- to northwest-facing slopes between Hogback Ridge and Ginnette Lakes (in Hogback Basin) characterize Area A. Elevations range from 6789 feet at Hogback Mountain to 5820 feet at the northern limit of the unit. Underlain by relatively young, resistant basalt, the area is generally poorly drained, with few well-defined drainage networks. Areas of internally drained topography, combined with shallow soil, result in numerous areas of seasonal or year-round standing water.

**LAND TYPE B**

Moderate to very steep slopes that surround Type A. Talus slopes, landslides and rock outcrops are associated with this landform, which is underlain by basalt.

**LAND TYPE C**

Gentle to moderate slopes in the northernmost map area below 4,800 feet consist mainly of colluvial and residual soil from highly-fractured, deeply-weathered sandstone, siltstone and graywacke. Drainages are more developed and incised in this unit because of less resistant rock.



## SLOPE STABILITY

Because of steep slopes associated with Land Type B, existing slope failures occur mainly in this unit on north- to west-facing slopes. Landslides consist mainly of areas of active rockfall and translational movement of rocky material. Gradational into talus slopes, rapid movement and mass wasting are more characteristic of slides. Slopes most susceptible to failure in the area are steep ones (+75% grade) in Land Types B and C that are associated with concentrated surface runoff or springs. Additional information is provided for the following landslides [See Geologic Conditions map, III-5.]:

LS-1 (NE 1/4, SW 1/4, Sec. 15): A large slump block at the toe of this landslide indicates a rotational component of movement.

LS-2 (NE 1/4, Sec. 15 to SE 1/4, Sec. 10): Movement in Section 10 appears due to oversteepening of highly fractured bedrock slopes by downcutting action of the stream feeding Knuppenburg Lake.

## GROUNDWATER

Groundwater seeps and springs are most common on north-facing slopes in land Type B and at the contact of Land Types B and C. Permeable, north-dipping, scoriaceous or breccia zones between basalt layers in land Type B transmit groundwater in a northerly direction.

## MINERALS AND GEOLOGY

### MINERALS

The Forest Service encourages, facilitates and administers the orderly exploration, development and production of mineral resources on National Forest System lands. Forest Service management of minerals activities is carried out within the framework of objectives and rights granted by statutes, leases, licenses, and permits. Minerals are divided into three classes for management purposes: locatable, leasable and salable.

Locatable minerals are metallic and non-metallic minerals for which the 1872 Mining Law gives U.S. citizens the statutory right to prospect for, locate, and develop on public domain lands. Gold, silver, copper and zinc are examples.

Leasable minerals are those that can be leased under the Act of March 4, 1917, the 1920 Mineral Leasing Act, the 1947 Mineral Leasing Act for Acquired Lands, and the 1970 Geothermal Steam Act. Oil and gas, geothermal resources, coal, and phosphates are examples of these.

Salable minerals are defined in the materials Act of 1947. Examples include common varieties of stone, sand, gravel and clay.

Areas such as Wilderness and Wild Rivers are withdrawn from mineral entry, and other areas are withdrawn (e.g., administrative sites, recreation areas, natural resource areas) if they cannot be properly protected by regulation or otherwise. These areas may, however, be subject to valid existing rights to mine which were perfected prior to the date of withdrawal. The existing White Pass Ski Area was withdrawn in 1957 from all forms of appropriation under the public land laws, including mining, but not under the mineral leasing laws.

## GEOLOGY

The geology in the vicinity of the White Pass Ski Area consists of an uplifted block of the sedimentary Jurassic-Cretaceous Russell Ranch Formation which is dominantly overlain by various Pleistocene volcanics. [See Geologic map, III-6.] The Russell Ranch Formation is highly faulted and sheared, low-grade metamorphic, graywacke and argillite with minor interbeds of conglomerate and carbonaceous siltstone (Clayton, 1983). The Russell Ranch Formation has been interpreted to be part of a dismembered sea floor assemblage (Swanson, 1978). The Pleistocene volcanics, mostly lava flows, erupted from several small vents and are variable in composition, ranging from dacite and andesite to basalt (Clayton, 1983). Volcanic vents within the study area are at Hogback Mountain and Deer Lake Mountain. Other nearby volcanoes include Round Mountain, Spiral Butte and Tumac Mountain.

## ENERGY AND MINERAL RESOURCES

The White Pass area is classified as being prospectively valuable for geothermal resources but is not classified prospectively valuable for coal, oil, gas or other leasable mineral resources.

The project area has no known occurrences of locatable-type minerals and no known history of past mining (Hunting, 1956, 1960).

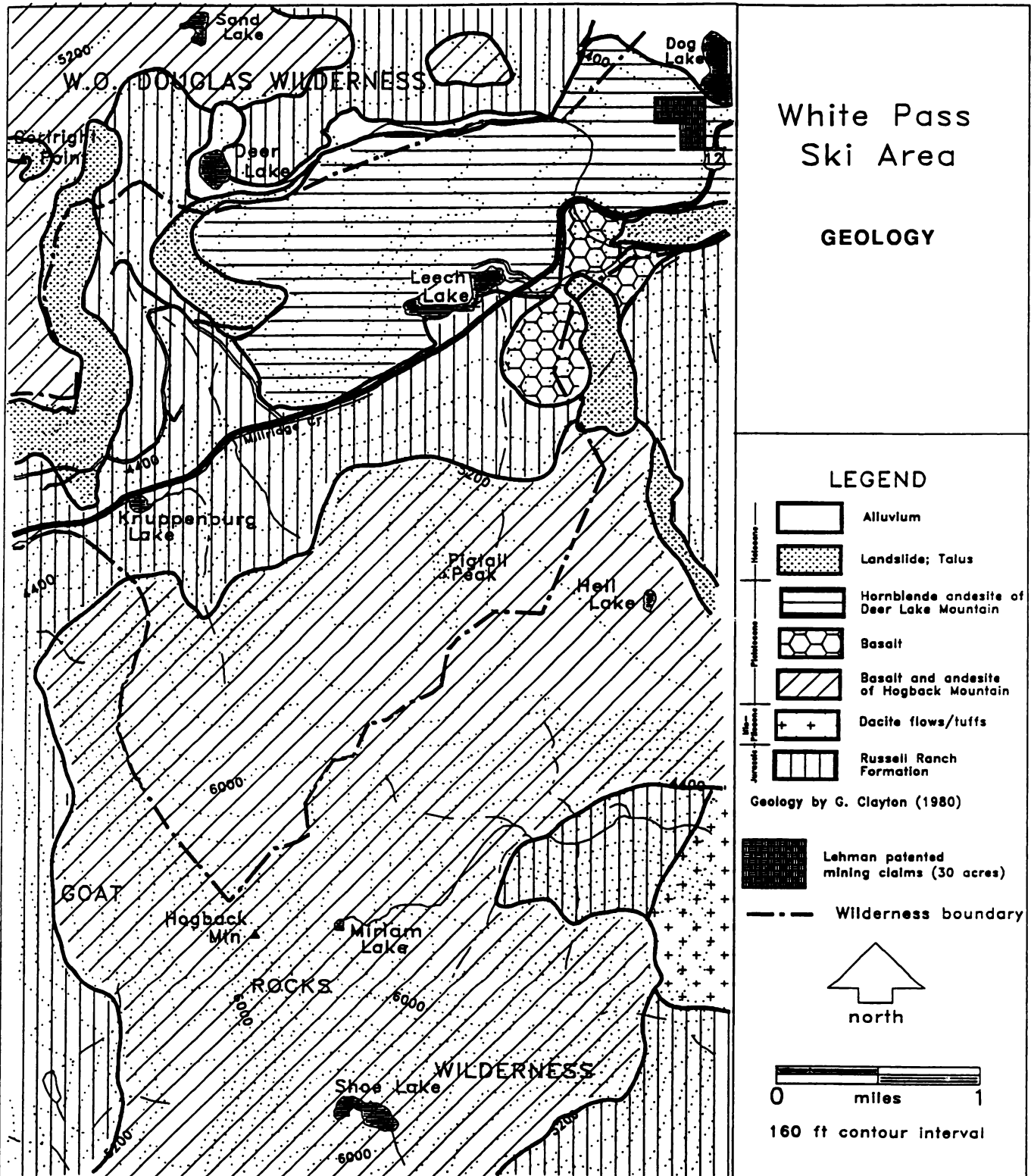
Within a few miles of the Ski Area there are three unpatented mining claims, "Up the Creek", "Spiral View" and "Cover All Bets" (T14N, R11E, Sect 36, SE 1/4) and the patented claims "Snoqueen" and "Ace in the Hole" (T14N, R11E, Sec. 36, SE 1/4; unsurveyed). These are owned by Burton Lehman and are for building stone. The patented land (private) covers 30 acres. Platy hornblende andesite (Deer Lake Mountain lava) from the Snoqueen claim is being marketed at Heatherstone. It has been estimated that even if the Snoqueen claim is allocated the entire Washington market for building stone, it contains reserves to satisfy the market for 175 years (Meschter, 1979). Likewise, the Ace in the Hole Claim contains estimated reserves to satisfy the market for 250 years (*ibid.*).

## POTENTIAL FOR MINERAL RESOURCE OCCURRENCE

The Ski Area does not lie within an area of critical mineral potential (Bee, 1983), and it has not been identified in the Forest Plan as having potential for the occurrence of locatable mineral resources.

A mineral potential survey of the Goat Rocks Wilderness identified three areas within the Wilderness as having probable mineral resource potential for base metals (Church, et al., 1983). One of those areas lies within about two miles southwest of the White Pass Ski Area, but none lie within the project area itself. In that area anomalous amounts of copper, cobalt, manganese, barium, molybdenum, lead, zinc, and nickel were found in stream sediment samples. In the panned concentrates from those samples pyrite was ubiquitous and cinnabar and barite were identified. Altered rocks from this area contained high values of zinc, manganese, lead, molybdenum and arsenic. Water samples contained high

FIGURE III-6



concentrations of chlorine, fluorine, molybdenum and copper. However, there is no evidence indicating the mineralization associated with these anomalies originates within the Ski Area.

The area from White Pass north to Chinook Pass contains mineralization associated with the emplacement of a granitic batholith and the intrusion of stocks, dikes, and sills of rhyodacite porphyry (Van Noy, et al., 1983). However, evidence indicating mineralization of a similar nature associates with the intrusion of granitics or rhyodacite porphyries is not known to occur within the project area.

Coal resources have been identified to the north and west of the Ski Area, but the coal-bearing unit does not crop out within the subject lands. Nor, based on the stratigraphy of the region, is coal likely to occur at depth underneath the Ski Area.

The Ski Area is included in an area that has been mapped as being prospectively valuable for geothermal resources (Renner, et al., 1979). Although there is no evidence to indicate the presence of geothermal resources in the Goat Rocks Wilderness and adjacent areas (Church, et. al.) the area is classified as "known or inferred to be underlain by low to high temperature thermal water" and is rated as "favorable for exploration and development of thermal water of sufficient temperature for direct heat applications" (National Geophysical and Solar Terrestrial Data Center, 1981). The state Department of Natural Resources drilled a shallow temperature gradient-heat flow hole a few miles to the east of the Ski Area in 1981. The gradient was reported to be 65.2 degrees C per kilometer for the 60–153.2 meter interval (Schuster and Korosec, 1981).

It is probable that deposits of rock similar to that found on the Snoqueen and Ace in the Hole claims may underlie a portion of the White Pass cross-country trail system (see geology map, Figure III-6). However, it is unlikely that the joint-spacing in those deposits is as ideal as that found on the Snoqueen and Ace in the Hole claims, and it is highly unlikely that a market not now served by those claims will develop.

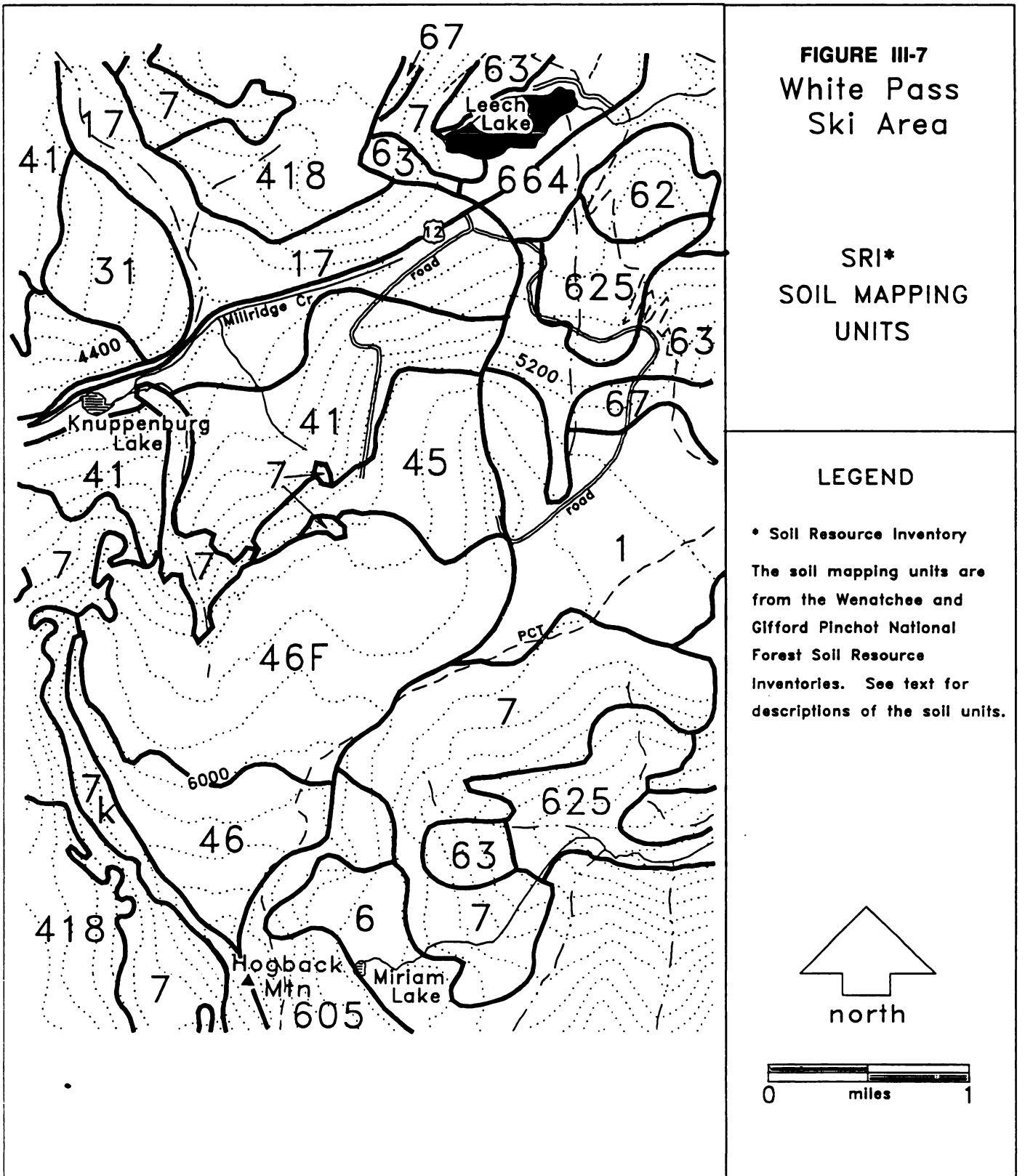
## SOILS

Soils at the White Pass Ski Area and the proposed areas for expansion are generally stable but subject to moderate to severe surface erosion once their protective duff and vegetation layers are removed. The soils can be difficult to revegetate because of site-specific climatic and soil fertility conditions.

The following is a discussion of soil units in the area. See Figure III-7, Soil Mapping Units. (Unit designations are from the Wenatchee [WNF] or Gifford Pinchot [GP] National Forests' Soil Resource Inventories [SRI]). [See also Table III-3, Soil Management Considerations.]

### SOIL UNITS 1 (WNF) AND 45 (GP)

Units 1 and 45 are high-elevation, benchy meadowlands with low-site timber on the slopes surrounding the upper terminals of Chair Lifts 1 and 2. They are generally well drained with the exception of the actual meadows, but potential for surface erosion is severe once the soils are exposed. That these soils are found on flat slopes precludes mass movement problems.

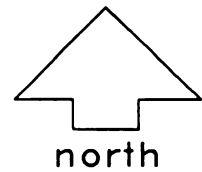


**FIGURE III-7**  
White Pass  
Ski Area

SRI\*  
SOIL MAPPING  
UNITS

**LEGEND**

\* Soil Resource Inventory  
The soil mapping units are from the Wenatchee and Gifford Pinchot National Forest Soil Resource Inventories. See text for descriptions of the soil units.





Revegetation is difficult because of the short growing season, low fertility, and cold soil temperatures. For re-seeding to be successful it is imperative that the grass species be compatible with the soil climatic conditions. Planting must be done when soil temperature and moisture content are at their optimums.

**SOIL UNIT 7 (GP)**

Found on rugged, rocky landforms with low-site timber, Soil Unit 7 consists of rock outcrop, talus and avalanche disturbances that occur on ridge tops, in cirque basins, and on upper side slopes generally west of the upper terminals of Chair Lifts 1 and 2. Potential for surface erosion is severe when the duff is removed. Revegetation of this unit is limited because of topography, climate and rocky conditions.

**SOIL UNITS 17 (GP) AND 664 (WNF)**

These are similar in that they both occur on the valley bottoms and gentle toe slopes at White Pass. Their locations on these gentle slopes relate to their moderate potential for surface erosion and mass movement. Climatic conditions and low soil fertility are major limitations to revegetation in these soils.

**SOIL UNITS 41 (GP) AND 63 (WNF)**

These are shallow, non-plastic soils derived from residuum and colluvium. They occur on the steep slopes in the upper portion of the existing Ski Area and on the slopes above Knuppenburg Lake. They are stable, well drained, permeable, and subject to moderate to severe surface erosion. The short growing season, low soil fertility and cold soils contribute to revegetation problems.

**SOIL UNITS 46 AND 46F (GP)**

These occur in Hogback Basin. They're shallow to moderately deep, non-plastic soils and are well drained and permeable. Soil Unit 46 occurs on the rough, rocky and irregular slopes of the Basin above 6000 feet. Unit 46F, similar to unit 46 in physical characteristics, is the predominant soil type in the Basin. Its limitations to regeneration are the short growing season of the area, cold soils and/or a high water table that leads to a park-like situation of meadows between clumps or stringers of established trees.

**SOIL UNITS 62 AND 625 (WNF)**

These units are generally shallow to moderately deep (commonly 1-4 feet), with local inclusions of very deep soils derived from glacial deposits. They occur on the eastern edge of the existing Permit Area. Once the duff and vegetation layers are removed these soils have potential for severe surface erosion. Their limits to regeneration are the short growing season and low soil temperatures.

TABLE III-3, SOIL MANAGEMENT CONSIDERATIONS

Soil Unit	Surface Erosion Potential	Natural Stability	Mass Movement Potential
1	severe	very stable—stable	unchanged
7	severe	stable—med. stable	increased
17	moderate	very stable—stable	unchanged
41	moderate—severe	stable	unchanged
45	severe	very stable—stable	unchanged
46	severe	very stable—stable	unchanged
62	severe	stable	unchanged
63	severe	stable	unchanged
67	moderate	very stable	unchanged
625	severe	very stable—stable	unchanged
664	moderate	very stable—stable	unchanged

**KEY: RATING EXPLANATION****SURFACE EROSION POTENTIAL**

**Moderate:** Some loss of surface soil material can be expected. Rill erosion and some small gullies or sheet erosion may be occurring. Sheet erosion can be determined by soil pedestals and observable accumulation of soil material along the upslope edge of rocks and debris. At a moderate erosion level fertility loss is possible.

**Severe:** Substantial loss of surface soil material can be expected. Rill erosion, numerous small gullies or extensive loss from sheet erosion may occur. Evidence of extensive sheet erosion is frequent occurrence of soil pedestals and considerable accumulation of soil materials along the upslope edge of rocks and debris. At a severe erosion level fertility loss is probable.

**NATURAL STABILITY**

**Very stable:** No evidence of failure

**Stable:** Occasional failures are observed.

**Moderately stable:** Several failures are observed.

**MASS MOVEMENT POTENTIAL** - Expected mass soil movement as a result of human activity.

**Unchanged:** Movement would leave the natural state relatively unchanged.

**Increased:** Movement would be greater than that of the natural state.

**WATER:NATURAL****WATERSHED CHARACTERISTICS**

Situated on the crest of the Cascade Mountains, The White Pass Ski Area has two watersheds. The western part of the Ski Area and the proposed expansion area lie at the headwaters of the Millridge Creek drainage, part of the Cowlitz River drainage. The eastern part of the Ski Area is in the Clear Creek and Tieton River drainages. Several springs are found flowing out of the slopes above the Ski Area base facilities at the geologic contact between very old sedimentary rocks and young overlying volcanics. These springs are

sources for several perennial and intermittent streams in the White Pass area that feed Millridge and Clear Creeks. The majority of streams in the area are Class II (natural streams important from a water quality standpoint for domestic use, public recreation, fish spawning or wildlife).

According to the Soil Conservation Service's Snotel gauge at White Pass (elevation 4500 feet), the pass's average annual precipitation for the years 1961 through 1988 is 45.9 inches. Table III-4 shows the monthly average precipitation and snow water equivalents for the pass since 1961.

**TABLE III-4, AVERAGE ANNUAL PRECIPITATION ,1961-1988 (in inches)**

	Precipitation	Snow Water Equivalent
October .....	3.2.....	0.0
November.....	6.9.....	0.0
December.....	8.3.....	3.3
January.....	7.8.....	10.3
February.....	5.5.....	17.2
March.....	4.1.....	22.0
April.....	2.8.....	25.3
May.....	1.8.....	24.8
June.....	1.8.....	15.2
July.....	0.5.....	0.0
August.....	1.4.....	0.0
<u>October.....</u>	<u>1.8.....</u>	<u>0.0</u>
TOTAL.....	45.9	

**WATER USES**

The Ski Area has tapped one of the springs, the easternmost fork of Millridge Creek, for their domestic water supply. Water from the White Pass area drains into Clear Lake, Rimrock Lake, and eventually the Tieton and Yakima Rivers on the east side of the Cascades. The water is used for irrigation, fishery, wildlife and recreation. Likewise, water flowing to the west enters the Cowlitz River system and is used for recreation, fishery and wildlife.

**WATER QUALITY**

**LAKES**

Water quality on lakes on National Forest land has been designated as Class AA by the State of Washington Department of Ecology. Table III-5 lists several lakes in or near the study area. No other information is readily available for the first six.

**TABLE III-5, WHITE PASS AREA LAKES [SEE MAP, FIGURE III 3.]**

Lake	Elevation	Size (acres)	Depth (feet)
Dog	4207	60.0	70
Hell	5414	3.4	50
Miriam	5789	2.0	20
Deer	5206	12.2	20
Sand	5295	7.2	4
Shoe	6112	15.8	26
Knuppenburg	4106	4.5	-
Leech	4412	41.0	15

The two lakes in the study area that could be impacted from activities at the White Pass Ski Area are Leech Lake and Knuppenburg Lake. Both lie downstream from and very near the Ski Area (Leech is within White Pass Company's northern Permit Area). Knuppenburg Lake is fed by Millridge Creek, with forks whose sources are both in the existing and proposed development area. Leech Lake is fed by intermittent streams with their sources on the slopes of the Ski Area. The following is a summary of the physical characteristics, uses and management of Leech and Knuppenburg lakes.

#### Leech Lake

County: Yakima

Location: T13N R11E SEC2, T13N R12E SEC1

Drainage: South Fork, Clear Creek

#### Physical Characteristics

Surface area: 41 acres

Elevation: 4,412 feet

Exposure: south

Normally ice-free: mid-May to mid-November

Mean annual water level fluctuation: maximum of 2 ft.

Bottom composition: ooze

Depth: range 15–2 ft.; 6 ft. common

Woody debris: fair number of snags recruited from lake shore

Amount of lake less than ten feet deep: approx. 95%

#### Inlets

Largest inlet enters from south side. Originates near Wildemess boundary

- 0.3 mile surveyed in 1988. Average width of 11 ft.

- 548 ft. from mouth to 1st fish passage barrier, culvert at U.S. 12

- 322 ft. from highway culvert to 2nd fish passage barrier at cascade/culvert for cross-country bridge and sewer line crossing

- Good fish habitat upstream of culvert at highway. Spawning possibilities if barrier problems resolved

4 or 5 springs enter on north side. Percent of total inflow from these is unknown.

Areas where springs enter may provide important over-wintering fish habitat by supplying oxygen-rich water sources.

**Outlet**

0.6 mile surveyed in 1988. Survey ended at waterfall over 100 feet high. 15 ft. average width - Slope is moderate. Large number of brook trout of all age classes indicates this is an important spawning area in spite of it being unusual for fish to spawn in an outlet stream.

**Remarks**

The revegetation class is CHC9. Predominant tree species are mountain hemlock, cedar, western hemlock and white pine. Understory species include big huckleberry, dwarf Oregon grape, rusty menziesia, pachistima, Cascade azalea, currents, bear grass, princess pine, queencup beadlily and bracken fern.

**Water Chemistry - Sampled 4/18/89 using Hach Analysis methods**

Test	Inlet at Lake	Outlet	
		County Bridge	at U.S.12 Below Ski Area
Total alkalinity, mg/1	20.5	27.4	20.5
Dissolved O <sub>2</sub> , mg/1	9	11	9
Total Hardness, mg/1	17.1	17.1	17.1
pH	6.5	7.0	6.0
Ortho-P, mg/1	0.3	0.6	0.1
Temperature, °F	33	36	36

**Biological Data**

**Aquatic Vegetation:** Unidentified aquatic plant over large portion of lake. Horsetails (*Equisetum arvense*) common along shallow banks (most of shore).

**Recreational Access and Use**

**Access:** Leech Lake is located immediately off Highway 12. It has picnic and camping areas on the north and east sides of the lake. These contain largely defoliated, compacted and eroding banks. There is also a horse camp located in conjunction with the Pacific Crest Trail, which has a culvert crossing on the outlet stream near the highway.

**Use:** Heavy as a fly fishery and for other recreation.

**Future Management**

Leech Lake has a long history as a popular fishing spot. Complaints in recent years about depletion of large fish are being examined. The lake's shallow topography and possible overbloomng due to pollutants reinforce the heavy fishing pressure and all these probably keep fish populations lower than the public desires.

Possible enhancement currently being considered includes a low check dam to raise the lake level. One program aims at improved fish passage from the inlet stream. The first phase of this project, a rehabilitation effort to mitigate damage from logging practices, was completed in 1988. Rocks and logs were placed in the inlet stream to channel water flow. Previously there were years when the stream went underground and/or dispersed through the timber between the highway and the lake.

**Eutrophication**

Eutrophication#(see Leech Lake) of Leech Lake has been a concern at least since 1966. Eutrophication is a natural process that results in increased productivity of plant growth in a lake with reduced ability to decompose the material.

The process can be accelerated by nutrient loading, i.e., by increasing nitrogen levels in the lake. One potential source of loading at Leech Lake could be sewage effluent from existing businesses and condominiums near it percolating through the soils into the lake. The drain field for these developments is located south, across the highway and above the lake's inlet.

Another possible cause for accelerated eutrophication is a drop in the level of the lake. In 1966, a proposal was made to build a dam in the outlet stream as a solution to reed growth. The dam was never constructed, even though the Washington Department of Fish and Game approved a hydraulic permit for it.

At this time it is unknown whether the eutrophication in Leech Lake is simply a natural process or whether it has been accelerated by development. No systematic study has been made of the Leech Lake Watershed. Three water samples taken by the Forest Service during the winter in 1988 from the inlet stream below the drain field, tested negative for coliform bacteria. One of two samples taken from the outlet stream and two samples taken from the western end of the lake, tested positive for coliform. Additional independent sampling by Gray and Osborne and water tested by Water Management Laboratories tested negative for human fecal coliform (a more complete test report). Continued monitoring is needed. Leech Lake

### Knuppenburg Lake

County: Lewis

Location: T13N R11E SEC10

Drainage: Millridge Creek; Clear Fork Cowlitz River; Cowlitz R.

#### Physical Characteristics

Surface area: 4.5 acres

Elevation: 4,106 feet

Exposure: north

Normally ice-free: mid-May to mid-November

Mean annual water level fluctuation: 0.5 ft.

Bottom composition: ooze

Woody debris: low number of logs protruding into lake.

Amount of lake less than ten feet deep: approx. 40%

#### Inlets

1. Low gradient stream with good gravel and cover; width 5 ft., approx. 100 ft. accessible; flow 2.5 cfs
2. Excellent gravel throughout; moderate slope for at least 0.25 mi.; width 4-6 ft.; 4.0 cfs flow
3. Discharge 5.0 cfs; moderate slope and excellent gravel
4. Marginal spawning stream; 1.0 cfs flow; 20 ft. of access

#### Outlets

One, large with fairly high velocities (ave. 3.0 ft/sec.). Stream is 12 ft. wide with 15-16 cfs discharge; slope moderate. Spawning potential limited due to high velocities and marginal spawning gravel.

#### Remarks

Lake is bordered by hemlock, cedar and fir.

### Water Chemistry

PH: 7.0  
Total alkalinity, ppm: 17.1  
Total Hardness, ppm: 17.1  
Temperature, °F: 46

### Biological Data

**Aquatic Vegetation:** Some unidentified vegetation on bottom, possibly *Nitella* (?)  
**Food Organisms Observed:** Fish stomachs contained predominantly chi-mad larvae and pupae; stonefly and mayfly nymphs plus beetle larvae were also present. With only a few fish in the lake, growth was exceptional compared to other brook trout lakes surveyed. Cutthroat planted in 1979 appeared in the catch in 1981 as 8–10-inch fish, but were rapidly fished out. With the high exchange rate of water, emigration out of the lake could also be a problem.

### Recreational Access and Use

**Access:** Knuppenburg is one of the most accessible high lakes in either Packwood or Randle Ranger Districts. It is immediately adjacent to Highway 12 and has a pull-out and a developed picnic area.  
**Use:** Heavy.

### Future Management

Because of the heavy fishing pressure on Knuppenburg, brown trout may be the best alternative for a sustained fishery. They should be more difficult to catch and might sustain the fishery for a longer period. Browns were planted in 1983, 1987 and 1988 but Knuppenburg needs to be surveyed to determine if these trout are providing a good fishery.

## STREAMS

Water quality data specifically for the streams at White Pass are not available. However, quality for the streams emanating from the area is high. All surface waters issuing from National Forests are designated Class AA (extraordinary) by the State of Washington Department of Ecology (WAC 173-201-070).

## FLOOD PLAINS AND WETLANDS

No floodplains exist within the study area. The streams are confined in narrow draws and do not spread out during flood periods.

The south side of Leech Lake and the inlet of Knuppenburg Lake would be classified as wetlands. Riparian vegetation including Alaska yellow cedar (*Chamaecyparis nootkatensis*) provide the vegetative cover. These areas have perennial, standing water. A portion of the Leech Lake wetland has been filled in the past by highway and parking lot construction.

## **WILDLIFE AND FISH**

Habitat in the project area ranges from thick coniferous forests to subalpine, with an array of riparian areas and natural openings such as meadows and talus slopes. Wildlife communities are rich and diverse. A wildlife inventory of White Pass Ski Area and vicinity identified 192 wildlife species that could be seasonal, casual or rare inhabitants of the area.

Individual wildlife species discussed below and elsewhere in the EIS, including threatened, endangered and sensitive species, are the subject of concerns expressed by some members of the public and by various agencies.

Included in particular are: the northern spotted owl (and the effects the project could have on the old-growth forest setting found in the northern end of the project area); the peregrine falcon and the bald eagle; deer and elk because they are important game species (economically as well as culturally to the Yakima Indian Nation); and, mountain goats because they offer an important hunting opportunity and, equally important, they have aesthetic value to those who prefer to watch them.

### **NORTHERN SPOTTED OWL**

The northern spotted owl is listed by the U.S. Fish and Wildlife Service (FWS) as being in threatened status pursuant to the Endangered Species Act as of June 22, 1990.

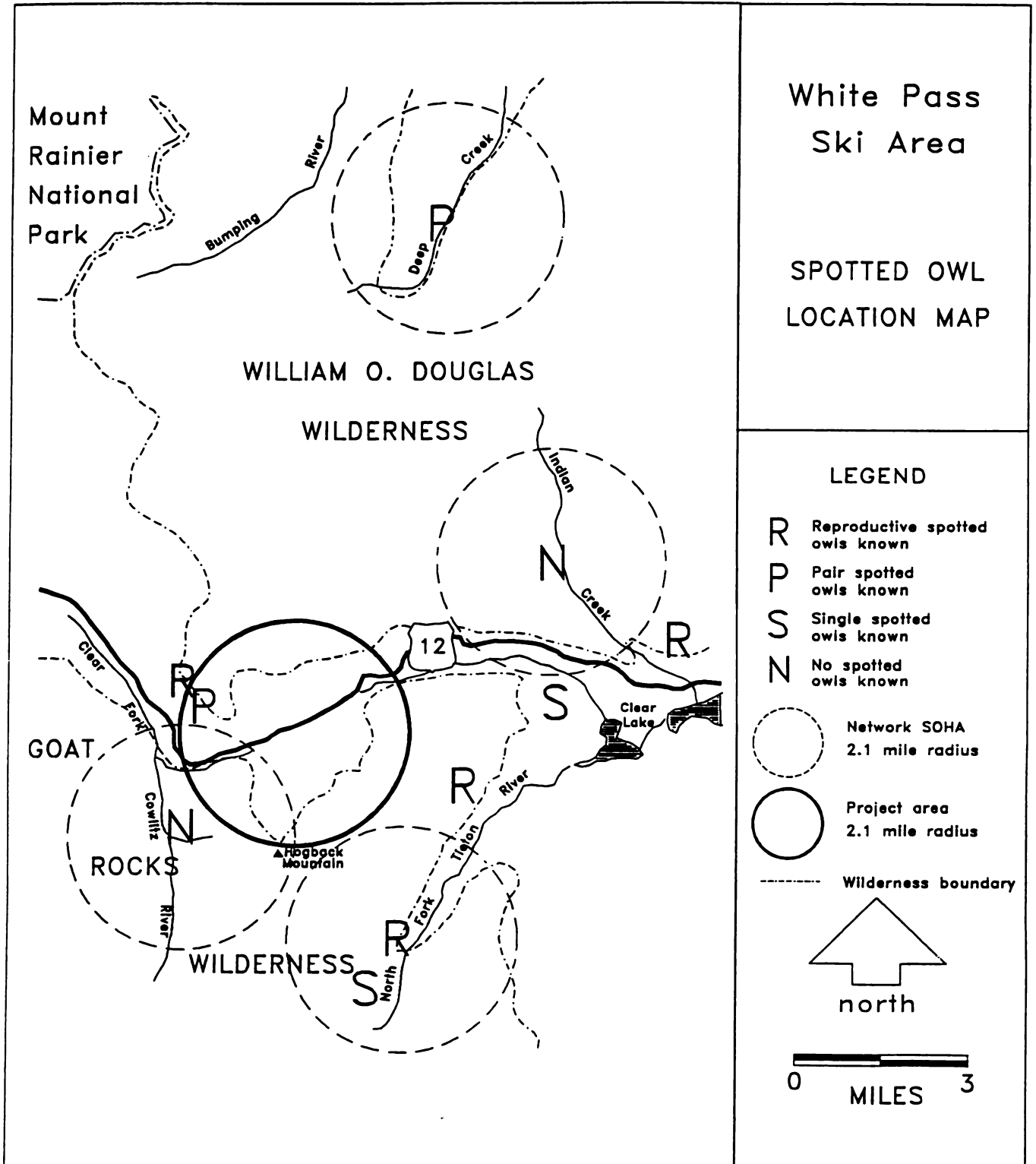
In addition to the ruling by the FWS, the Forest Service issued a Supplement to the Environmental Impact Statement for an amendment to the Pacific Northwest Regional Guide in July 1988. The Supplement established specific direction for the management of northern spotted owl habitat areas to be used in Forest planning. Using the direction in the Supplement, the Wenatchee and Gifford Pinchot National Forests have designated a habitat network (composed of spotted owl habitat areas [SOHA]) to provide viability for spotted owls. They have coordinated designation of spotted owl areas on both sides of White Pass to allow movement of the birds through potential owl habitat there.

The spotted owl generally utilizes mature and old-growth forests below 4,500 feet elevation. There are estimated to be 500 to 700 acres of suitable habitat below 4,500 feet, and stands of Pacific silver fir and western hemlock (18 to 22 inches in diameter at breast height, 100–240 years old) between 4,500 and 5,000 feet that have characteristics of spotted owl habitat. Spotted owls are known to use the higher elevation habitat on the Wenatchee National Forest. (See Spotted Owl Location map, Figure III-8.)

This project maintains spotted owl habitat to meet the Supplement. It will reduce approximately 100 acres of habitat within 2.5 miles of three pairs of spotted owls. The reduction in habitat will not be in a single block but will be lineal in clearings for ski runs. This will fragment their habitat. The fragmented habitat will increase the habitat for great horned owls, increase the potential for spotted owls to become prey for them, and reduce the potential for spotted owl dispersion. This reduction of dispersion will likely not affect dispersion of owls between the Gifford Pinchot and the Wenatchee National Forests.



FIGURE III-8



The project will increase year-round use by people in and around the spotted owl habitat. This may disturb foraging and roosting owls and reduce opportunities for the public to view owls.

The activities associated with removing spotted owl habitat will not affect the nesting pairs because the nest sites are more than one mile away.

Harvesting of future timber sale and other project activity near White Pass will have a cumulative effect on owls and their habitat. Those effects will be analyzed in the NEPA documents prepared for those projects.

A report on survey results, completed in July 1987 by Wendell Oliver, Wildlife Consultant, indicated there was no use of the study area by spotted owls. That report was in consultation with State and Wenatchee National Forest biologists. Biologists from the Gifford Pinchot National Forest and the State Department of Wildlife who are knowledgeable of the area, agreed that the likelihood of use by or presence of owls was very low. A letter from the Yakima office of the Department of Wildlife (11/23/88) says additional owl surveys may be needed because survey techniques have improved since that survey. Additional surveys are planned and further consultation with the Federal Fish and Wildlife Service is proposed. Implementation of any projects will comply with the Endangered Species Act (PL 93-208).

## **MOUNTAIN GOATS**

The Hogback Basin area is mountain goat summer range. Goats are frequently sighted in this area and evidence of use can be observed. Prime summer habitat and known heavy use areas occur away from the project area to the north, south and west. The impact of the existing summer activities that might have already displaced goats to other areas is unknown, but is not felt to be significant based on current use, and on sightings of the animals.

Estimates of the goat population are vague but indicate a small one at best. It is concentrated in the Goat Rocks Wilderness but is also scattered through other areas in the Gifford Pinchot National Forest and Mount Rainier National Park. The population is thought to be declining, possibly due in part to over-hunting. The Washington Department of Wildlife's 1983-89 objective for the GPNF is to maintain the population at 1970-79 levels, then increase the population by 5 percent per decade to the year 2050.

Winter range, besides being an important factor for determining mountain goat populations, is often the limiting factor controlling them. Their use of the project area in winter is non-existent or insignificant. It occurs in traditional areas much lower in elevation away from White Pass. The project area has no windswept open ridges, typical of some mountain settings, such as in the Rocky Mountains, where high elevation and dry snow conditions keep grasses and forbs exposed most of the winter. White Pass typically has wet snow and deep snow packs which bury feed sources.

## **DEER AND ELK**

Roosevelt elk and black-tail deer inhabit the project area for summer range only. The limiting factor overall for deer and elk herds is winter range. The Yakima Indian Nation is concerned with big game impacts in relation to this project although their concerns are not site-specific.

## **THREATENED, ENDANGERED AND SENSITIVE ANIMAL SPECIES**

The federally-listed threatened or endangered species that have been sighted in areas near White Pass are the northern spotted owl, the peregrine falcon, the bald eagle and the gray wolf. The habitat within this project was historically grizzly bear habitat. The grizzly bear habitat will not be discussed further because this area is not being considered for recovery and, therefore, has no potential for effects.

Species listed as sensitive by the Forest Service that need to be evaluated with the aim of preventing them from becoming federal threatened or endangered species are the Larch Mountain salamander, Townsend's big-eared bat, the California wolverine, and the North American Lynx.

Species listed by the State of Washington as threatened or sensitive include the northern spotted owl, the Larch Mountain salamander and Townsend's big-eared bat.

### **PEREGRINE FALCON**

There is potential nesting habitat in the Tieton River, Rimrock Lake and Cowlitz River areas near this project. The Wenatchee National Forest is participating in re-introduction efforts for this species. There is no nesting habitat within this project, but falcons may use the area for foraging.

There are no records of sightings within the project area.

### **BALD EAGLE**

There have been no documented eagle sightings in this area, though they must certainly have flown over. Bald eagles nest in lower elevations than are found in the study area, usually in locations associated with lakes and rivers. Nests exist at nearby Rimrock Reservoir.

Eagles might use the White Pass area for foraging in the late summer and fall when nesting is complete and small rodents and mammals are present, but there is no prey base during the majority of the season. This type of habitat is not a limiting factor.

### **GRAY WOLF**

The Washington Department of Wildlife has not verified that any of the listed sightings in this area are actually wolves.

Historically, the gray wolf was found throughout the Wenatchee and Gifford Pinchot National Forests. Human activities have had serious impacts on wolf populations through exploitation, habitat reduction and population control.

### NORTHERN SPOTTED OWL

See previous section on spotted owls.

### LARCH MOUNTAIN SALAMANDER

The Larch Mountain salamander relies on talus slopes composed of small rocks. It has a strong preference for steep (greater than 30 percent) slopes of lava talus, with other specific characteristics. The preferred micro-habitat is a dense canopy cover with sparse ground vegetation.

Until recently, the Columbia River Gorge was thought to be the sole habitat for this species. However, the salamander has also been found in an area near Packwood. This find represents significant range extension for the species and may indicate a distinct population. The Packwood site, at 2970 feet, is higher than any other recorded site in Washington.

The presence of this species in the project area is unlikely, based on research and field reconnaissance work done in 1987.

### TOWNSEND'S BIG-EARED BAT

Caves are essential to this species. The primary limiting factor is disturbance of its cave hibernation and roosting habitat. There are no known caves in the project area. Even if the bats use the area for their night foraging, impacts on the species would be minimal.

### CALIFORNIA WOLVERINE

Wolverine habitat is associated with true fir forest. This species is heavily impacted by man-caused disturbances and habitat alterations. Carrion provides a majority of the species' food (Hornocker, M.C. and H. S. Hash, 1981).

The habitat in the project area is low value because (a) part of it is in older stages and (b) there are heavily-used trails and a highway nearby.

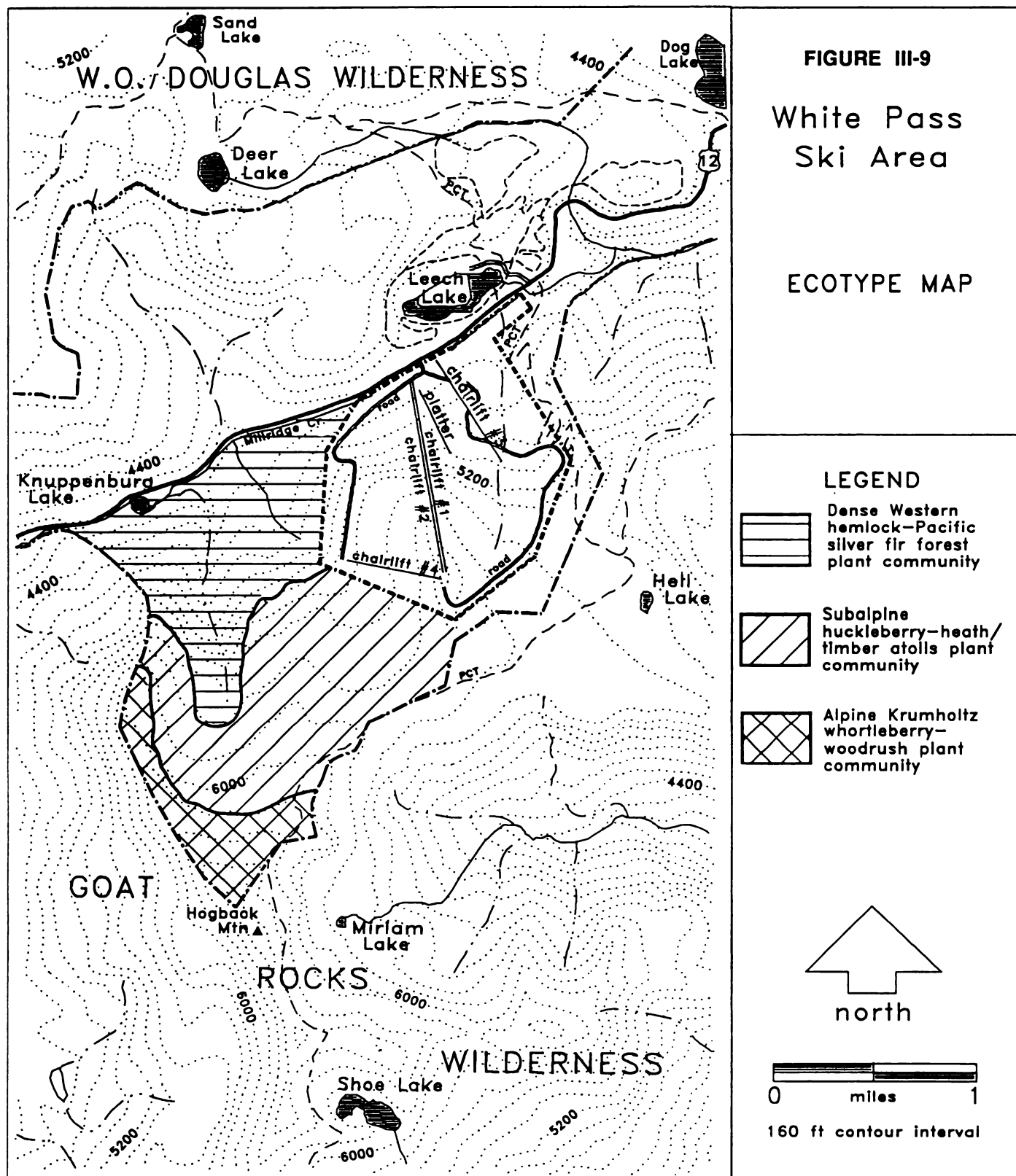
### NORTH AMERICAN LYNX

Lynx habitat varies from newly-harvested clearcuts to small sawtimber, with the key habitat being saplings and poles from one inch to 9 inches in diameter, measured breast high. Stands not managed for timber, such as Wilderness and unroaded areas, are generally lower quality habitat. Access to an area by roads also decreases the value of habitat for this species.

The habitat in the project area is low value because (a) part of it is in older stages, (b) it has no managed saplings and poles, and (c) there is a highway nearby.

## **FISHERIES**




Resident fisheries occur in nearby Knuppenburg Lake and Leech Lake. Both are stocked fisheries maintained by the Department of Wildlife. Potential threats to these fisheries would be from pollution from sewage disposal and from sedimentation caused by accelerated surface erosion.

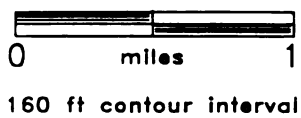
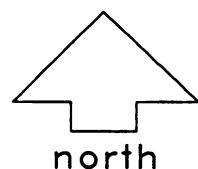


**FIGURE III-9**  
**White Pass**  
**Ski Area**

**ECOTYPE MAP**

**LEGEND**

-  Dense Western hemlock-Pacific silver fir forest plant community
-  Subalpine huckleberry-heath/timber atolls plant community
-  Alpine Krumholtz whortleberry-woodrush plant community



## **VEGETATION**

### **PLANT COMMUNITIES**

Three basic ecological settings (see plants) exist in the proposed ski expansion area. [See Ecotype Map, Figure III-9.]

#### **HEAVILY TIMBERED OLD-GROWTH**

This is a steep, densely timbered slope that parallels the highway west of the White Pass facilities. This plant community is characterized by old-growth western hemlock (*Tsuga heterophylla*), Engelmann spruce (*Picea engelmannii*) and Pacific silver fir (*Abies amabilis*) with understories of western hemlock, Pacific silver fir and Alaska yellow cedar (*Chamaecyparis nootkatensis*). The herbaceous vegetation consists of western rattlesnake plantain (*Goodyera oblongifolia*) and various mosses. The shrubs include big huckleberry (*Vaccinium membranaceum*), western prince's pine (*Chimaphila umbellata* var. *occidentalis*), low huckleberry (*Vaccinium myrtillus*), beargrass (*Xerophyllum tenax*), dwarf bramble (*Rubus lasiococcus*), rusty menziesia (*Menziesia ferruginea*), Alaska huckleberry (*Vaccinium alaskaense*), and sidebells pyrola (*Pyrola secunda*). Many of the more mature trees are over 400 years old. There is a great deal of decadence, with abundant fungal activity. Fires have played a very infrequent role in this ecosystem. Windthrow and snow break/avalanche appear to be the major disturbances. Shallow soil and rock outcrops are common on the area's steep topography. There are numerous Pacific silver fir snags in this setting. The trees on the upper slope are stunted in height due to the shortened growing season, shallow soil and adverse weather.

#### **SUBALPINE (HOGBACK BASIN)**

The second ecological community consists of a subalpine setting with atolls of stunted subalpine fir (*Abies lasiocarpa*), mountain hemlock (*Tsuga mertensiana*), Alaska yellow cedar and Pacific silver fir. Vegetation includes sedge (*Carex*), red mountain heath (*Phyllodoce empetriformis*), Cascade huckleberry (*Vaccinium deliciosum*), big huckleberry, and smooth woodrush (*Luzula hitchcockii*). This unique area has been characterized as open glades among clumps of stunted trees. The harshness of the environmental conditions, such as heavy snow accumulation, high winds with blowing ice, re-radiation, insolation, short growing season and snow creep, make tree life a struggle for survival. The groups of trees (atolls) shelter the young seedlings from the harshness. An atoll expands until snow creep or windthrow brings it down. This process of ecological succession is very slow. This ecosystem is a fragile environment.

### ALPINE (HOGBACK RIDGE)

The third ecological setting along the upper Hogback Ridge consists of a low shrub/forb layer of sedge, red mountain heath, smooth woodrush and grouse whortleberry (*Vaccinium scoparium*). Trees on the ridge have scattered clumps of Krumholtz (stunted) subalpine fir and mountain hemlock. Alaska yellow cedar and white-bark pine (*Pinus albicaulis*) are infrequently present. Growing seasons are very short. This plant community is very sensitive to physical disturbance, which remains evident for a long time due to the vegetation's slow growth.

### **THREATENED, ENDANGERED AND SENSITIVE PLANT SPECIES**

Dr. William W. Barker, Professor of Botany at Central Washington University, conducted a survey in 1987 for sensitive, threatened or endangered plants in the proposed expansion area. The area covered is shown in Figure III-10. His project included a literature search for listed species as well as a field survey of five general ecological areas: roadside, steep hillside, meadow-ridge, alpine Krumholz, and "Grand Couloir."

A list of plant species actually found is included as Appendix E. The plants mentioned above can be considered examples commonly found in such ecological settings. Particular species, even genera, actually in an ecotype often vary, as they do here.

Dr. Barker summarized the results of his survey:

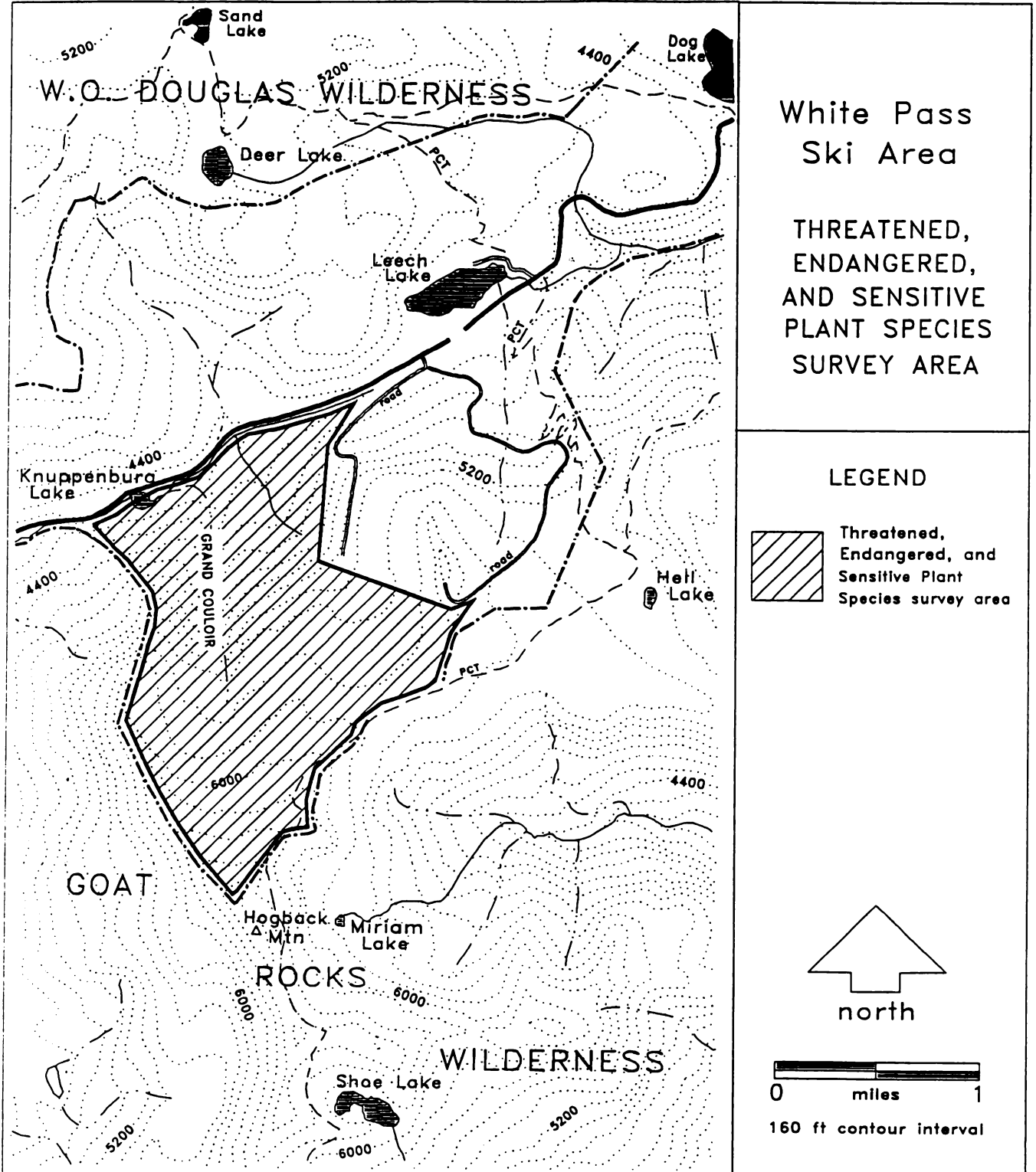
A thorough survey of the area proposed for the expansion of the White Pass Ski Area was conducted during June and July of 1987. No plants listed as endangered, threatened or sensitive in the June 1987 listing of such plants, published by the Washington Natural Heritage Program, were located in the course of the survey.

### **TIMBER**

The only merchantable timber stands potentially involved in the study area are in the area of Chair Lift 7 and the access road, along the catchline road, and where the parking lot would be expanded. These are old, mature stands of Pacific silver fir and western hemlock. Stand data are limited but trees are estimated to be typically 18-22 inches in diameter at breast height, 100-240 years old (majority about 120) and stand average net volume is about 35 thousand board feet per acre.

Most of the timber in the upper areas (Hogback Basin) is too small and scattered to yield any significant volume and is considered unmerchantable.

FIGURE III-10





## **SOCIAL AND ECONOMIC**

### **EXISTING SITUATION: WEST SIDE**

The people in Packwood can generally be described as falling into two diverse groups: the local population and the part-time recreationists.

Many of the local or traditional population are descendants of original settlers in the area, people working in the timber industry, or people who have retired to the area. Lewis County has a higher percentage of senior citizens than the state average, and this percentage is increasing due partly to the fact that much of the local population is growing older, and partly because many people have moved into the area to retire.

The other segment of the population are those people who have recently acquired recreational property for second homes or cabins. Many are attracted to the rural, low-key lifestyle and the year-round recreational opportunities ( e.g., hunting, fishing, skiing and sightseeing in National Forests, nearby Mount Rainier National Park, the Wilderness areas, and Mount St. Helens National Volcanic Monument).

In the past the economic base of the community was tied primarily to the timber industry and local mills. In recent years the service industry has become a more dominant economic influence. The importance of this industry should continue to increase in the future, making the local economy less dependent on the timber industry. This should result in a more diversified economic situation in the Packwood area.

Attitudes toward the growth of the service industry vary. Generally, the business people are in favor of the trend. So are others who benefit from the increased services. However, many members of the traditional population are opposed to this shift . (For example, because of the influx of people that would have resulted, a very vocal group opposed the State's proposal to develop a state park in the Skate Creek area outside of Packwood.)

Still, the majority of people in the Packwood area are either in favor of the service industry trend or are indifferent.

### **RECREATION SERVICE INDUSTRY**

The service industry is geared toward the recreational needs of the part-time residents and toward people travelling through the area. It typically involves restaurants, motels, gas stations, grocery stores, and specialty stores. The industry is relatively strong year-round, though a distinct low cycle does occur in the winter. April and May are the lowest time for recreational activities. The industry peaks in the summer, traditionally in July and August.

Summer recreation activities change to hunting activities in the fall, then to snow sports in the winter. Typically there is a steady flow of traffic through Packwood on Highway 12 from Friday through Sunday evenings.

Evidence of the growing service industry can be seen in the expansion and addition of local businesses in just the past three years. Major expansions have included a restaurant, a grocery store and a sporting goods store. Additions include a motel and restaurant. There is also talk of another motel coming into the area.

Another indication of service industry growth is the difficulty people encounter in finding houses to rent and in the rising cost of rentals.

### **PROPERTY VALUES**

In the 1970's property values in the area were on a constant rise, due primarily to the recreation property market. The eruption of Mount St. Helens had a significant impact on the value of local property. The area lost its attractiveness to many when the mountain erupted and consequently property supply exceeded demand and property values dropped. Mill closures in the late 1970's and early 1980's also contributed to this market condition.

In the mid-1980's land values began to recover. They are today about what they were during the peak in the 1970's. In the past, buyers were a mix of timber industry workers and retired people. Now the primary buyers are recreationists. The demand currently exceeds the supply and a seller's market exists. It is estimated that property values in the next five years without Ski Area expansion are expected by some to go up by as much as 25 to 50 percent, depending on the property location. The area affected by the increase in property values can be roughly defined as that between the Cora Bridge and the Forest boundary to the east. The prime areas are downtown Packwood and tract developments known as High Valley and Timberline.

Fueling the demand for recreational property are the development of Mount St. Helens as a National Monument; recreational pursuits mentioned previously; investment opportunities (primarily with commercial property); and, people who bought lots telling friends who then bought lots, who then.... Another factor is the talk of the future development of a state park in the area.

Even with these increases, property value costs are still relatively modest compared to other recreation areas and demand is expected to continue.

Opinions vary, but talk of the proposed expansion of the Ski Area appears to have had little impact on property values or the local economy as yet. However, businesses have used the White Pass Ski Area's current operation as a marketing tool, featuring the Ski Area's reputation of short lift lines, low cost, proximity, and consistently good conditions.

### **EXISTING SITUATION: EAST SIDE**

The population east of White Pass is much more diverse than that of the Packwood area. Some of the residents in the community of Trout Lodge commute to the town of Naches or the city of Yakima to work. Most of the local residents in the community, which lies within the Tieton River canyon about 22 miles from the pass summit, operate service businesses: two motels with trailer hookups, two cafes, a sports shop, and a gas station with a tow truck.

The sports shop in the Trout Lodge area opened about ten years ago and provided ski rentals. Since opening, both the ski rental and the sports shop parts of the business have increased their stocks of nordic and alpine equipment.

There are four resorts under special use permit in the Rimrock Lake area. One is currently a summer operation with saddle and pack stock. The other three lie on Rimrock Lake and, prior to the development of the Ski Area, closed down after elk hunting season. For a number of

years only two of the resorts remained open all winter, but winter use by skiers and snowmobilers has made it profitable for the third resort to operate on weekends.

There are a total of 268 recreation residences in the Rimrock Lake area within a half-hour drive of White Pass. In the past twenty-eight years winter use of the cabins has grown dramatically due to increased interest in winter activities, from snowmobiling to downhill and nordic skiing.

The town of Naches is approximately 40 miles from the White Pass summit. The local population is primarily dependent on either the fruit growing or packing industry or the timber industry, with one locally-owned sawmill and several logging operators. Residents who do not work in these fields commute to jobs in Yakima.

Two service businesses have opened in Naches in the past two years, a sport shop with ski rentals and a pizza parlor. Both of these rely heavily for their trade on recreationists using the White Pass Ski Area.

The general opinion of the local population in the Trout Lodge-Naches area is in favor of the expansion of the Ski Area since increased use there would greatly benefit the various service businesses in these communities.

The city of Yakima is about 55 miles from White Pass and has grown from a community oriented to agriculture and timber to an urban center with manufacturing and associated industries. Property values in that locality have remained static or dropped in the 1980's.

## **SKI AREA**

### **EMPLOYMENT**

White Pass Company has an annual payroll of about \$700,000, which includes 18-20 year-round positions. Employment also includes 75 seasonal full-time positions and 60 seasonal part-time positions. About 40% of the employees live on the east side and 60% live in the Packwood/Randle area.

### **REVENUE**

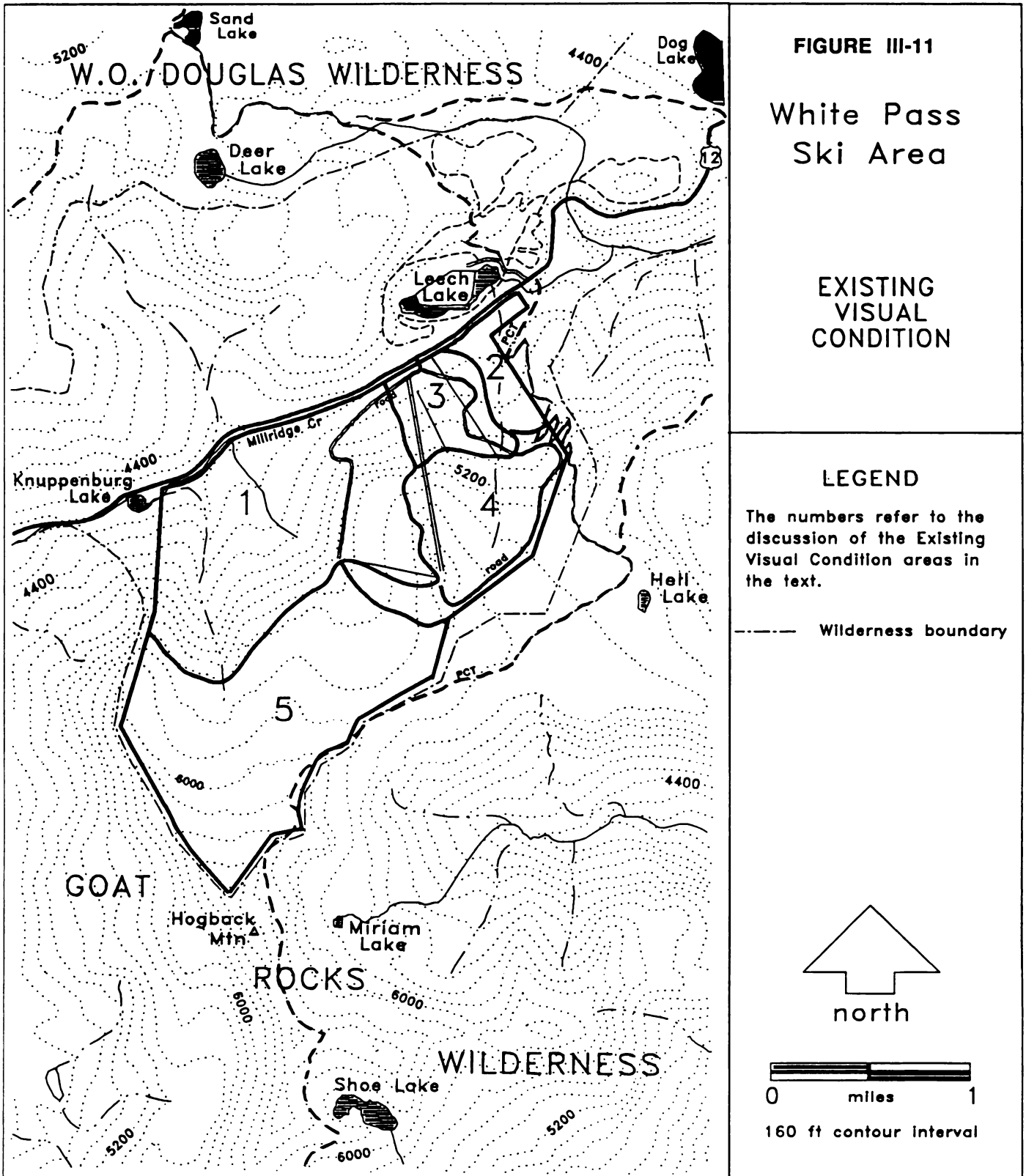
Current Revenue for White Pass Company is about \$2,000,000. Table III-6 shows the Company's revenue in average daily expenditure, by type of income and by skier type.

TABLE III-6, SKIER'S AVERAGE DAILY EXPENDITURE

	Alpine Skier	Nordic Skier
Daily Ticket.....	\$19.00.....	\$5.00
Ave. Daily Ticket*.....	12.23.....	4.43
Ski School.....	0.62.....	0.54
Food (Day Lodge).....	2.59.....	2.59
Groceries & Gas.....	1.85.....	1.85
Ski Rental.....	1.10.....	1.10
Retail Sales (Ski & Gift Shops).....	1.20.....	1.20
Day Care†.....	0.07.....	0.07
Skier's Average Daily Expenditure .....	\$19.66.....	\$11.78

(\* Average Daily Ticket less than full day because of 1/2 day passes, group rates and gratuities.

†First year for day-care. This should grow.)



## **OTHER RESOURCES**

### **VISUAL**

The visual resource in the study area has been modified by development in the White Pass area. The amount of change from the "naturally appearing landscape" is included in the sections below, with EVC and VAC keyed to areas 1-5 displayed in Figure III-11.

#### **EXISTING VISUAL CONDITION (EVC)**

##### **AREAS 1 AND 2**

These areas are characterized by continuous, uniform, dense stands of high-elevation conifers in a natural condition, including mountain hemlock, Pacific silver fir, Engelmann spruce and Alaska yellow cedar. With the exception of the access road on the west side of the existing Ski Area, they are unchanged. Area 1 has from 20% to near 100% slopes. Because of the heavy timber screen adjacent to the highway, very little of the area is exposed to sight from traffic along the White Pass highway. Area 2, although similar in character, is flatter and less exposed.

##### **AREA 3**

This area is the existing heavily groomed, lower slopes of the Ski Area. Essentially denuded of trees and supporting only a grass-forb ground cover, it is in a heavily altered condition. Several trails and access roads wind across this hillside. It is completely visible from the highway.

##### **AREA 4**

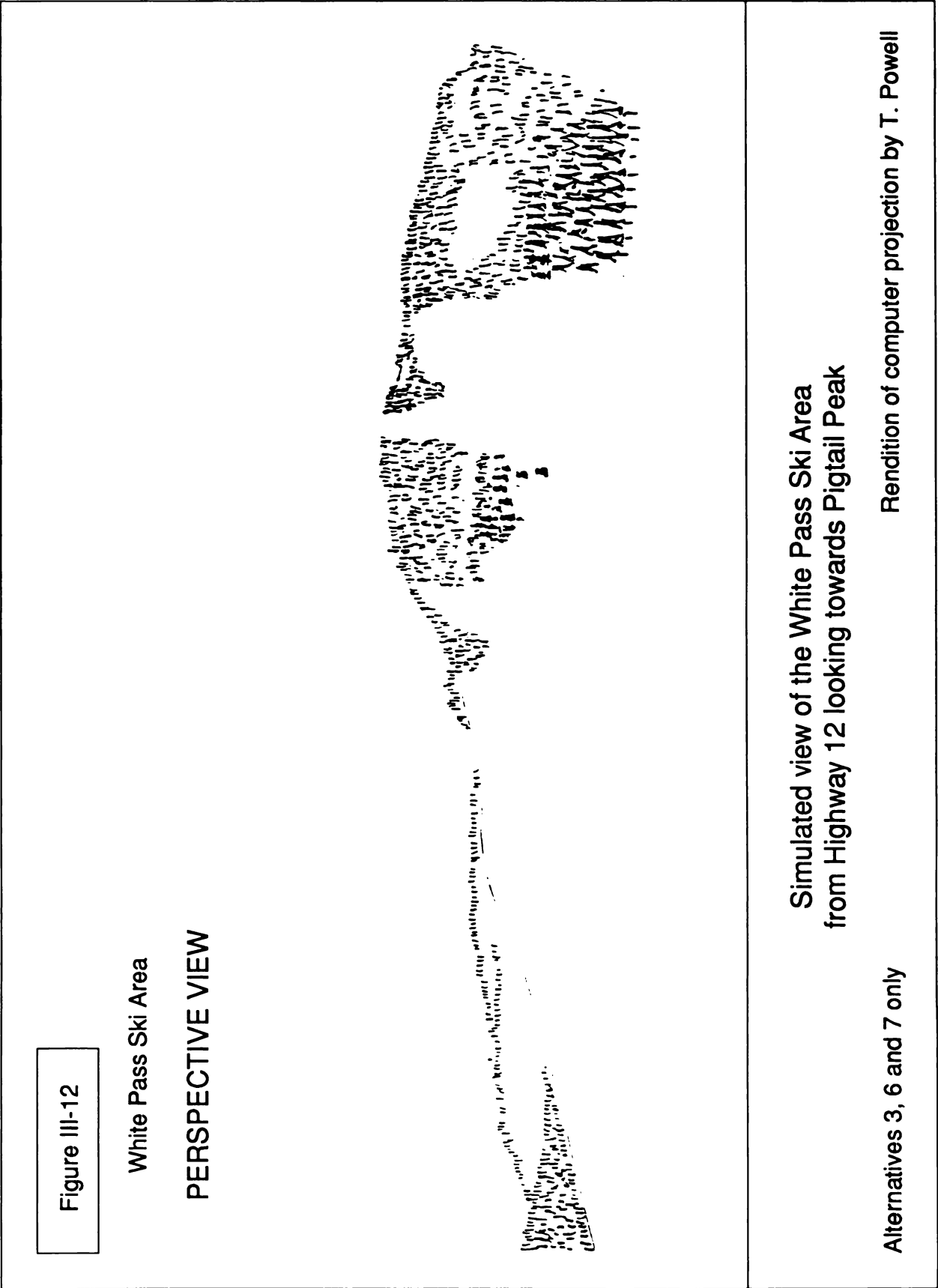
Though similar in slope and vegetation to Areas 1 and 2, Area 4 has been modified by construction and clearing of lift lines and ski runs. The upper portion is slightly more open than lower parts are, with scattered timber. Much of this area is not visible from the highway due to its gentler slopes and an intervening ridge.

Although most of the runs in this area are irregular, Chair Lift 4 lies in a very straight, vertical cut that is obvious. However, its location and orientation make it invisible from the highway and generally inconspicuous from other vantage points.

##### **AREA 5**

This is the currently undeveloped upper Hogback Basin. It is completely natural except for a few trails. It is fairly open with scattered small clumps of high-elevation conifers such as subalpine fir and mountain hemlock. Most of this area is not visible from the highway

The current condition of the existing area is indicated in Figures III-11, the Existing Visual Condition map, and III-12 a computer rendition of the existing area as seen from Highway 12.



**VISUAL ABSORPTION CAPABILITY (VAC)**

An area's VAC, its Visual Absorption Capability, is the degree it can accommodate change or alteration without affecting its appearance. The VAC of an area is based on physical factors inherent in its landscape. The VAC for the study area is indicated in Figure III-13 and described below.

**AREAS 1 AND 2**

Because of the dense, unmodified timber stand in these areas their capability to absorb visual changes is low. VAC is particularly low in Area 1 due to the slope which makes its entire face visible. Little of this area is seen due to the heavy timber screen adjacent to the highway. Area 2 is less exposed but is a smaller area bounded by Highway 12, the Pacific Crest National Scenic Trail, and the open, groomed slopes of Area 3. Very little could be done here which would not be visible and create an obvious change in natural conditions.

**AREA 3**

This area is completely modified from the natural condition and, therefore, discussions of VAC are largely academic. Since it is a uniformly denuded landscape, Area 3's ability to absorb additional change is low. However, the effect of changes would depend on their type, and may even be beneficial. Given that likely changes here would be recreational development, the visual impact of such development would depend on the design of the structures or facilities themselves, rather than their impact on the whole existing visual resource.

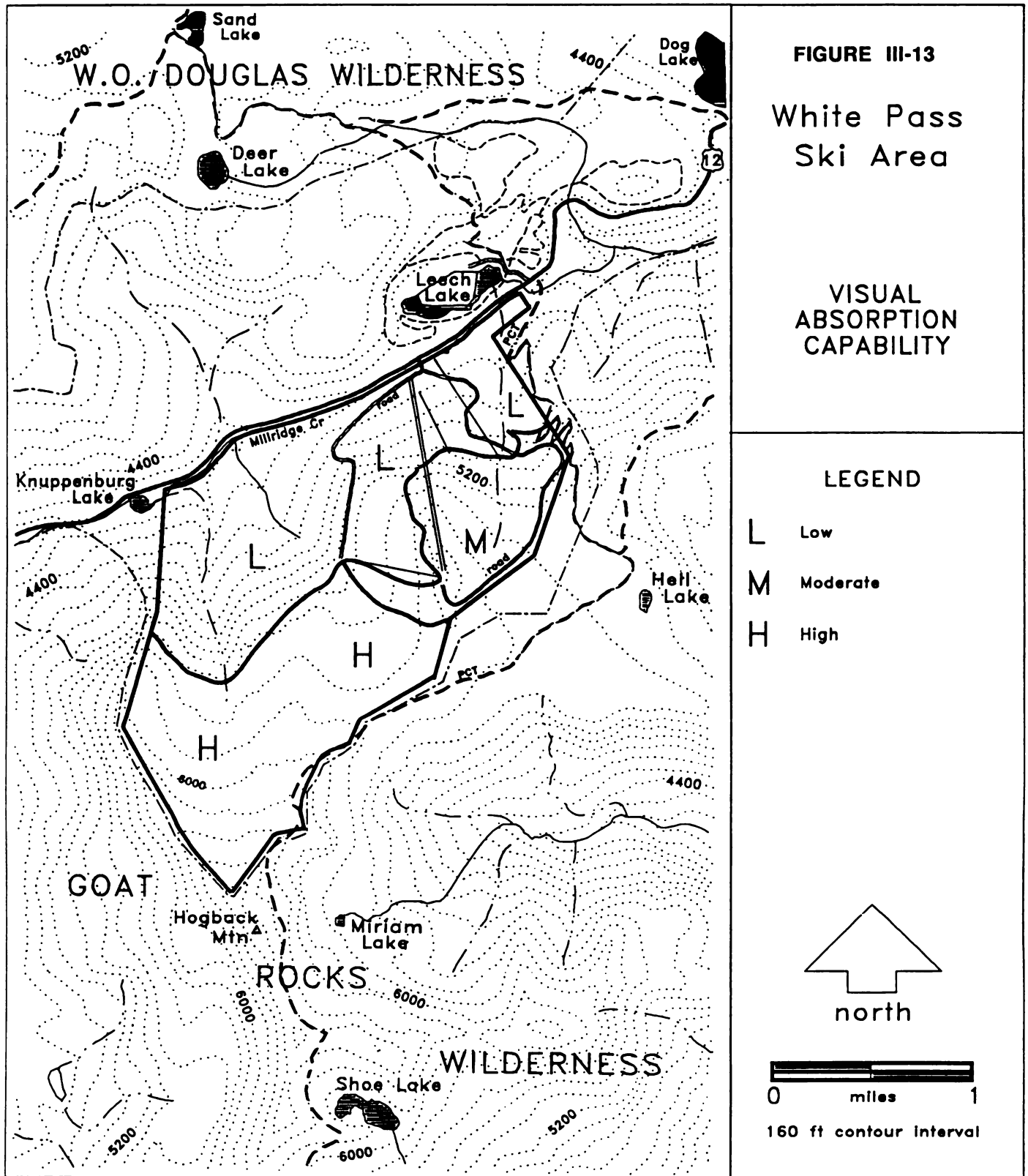
**AREA 4**

This area has been modified by the creation of lift lines and ski runs. Its ability to absorb additional development is moderate for that reason. Smaller (i.e., narrower) runs, possibly connecting existing runs with new ones, might fit in with little visual impact. This area provides a visual transition, from the heavily groomed slopes at the foot of the Ski Area to the upper Basin. The visual quality would be little changed by carefully planned location of lift lines and runs.

**AREA 5**

This area, which includes most of the area proposed for expansion, is composed of scattered clumps of trees and more gentle slopes. It is unseen from the highway and seen obliquely from higher viewpoints. From the PCT it is viewed downhill and at an angle which obscures many portions. Its VAC is high, at least for development of the scale necessary for properly placed lift lines and runs.





### VISUAL QUALITY OBJECTIVES (VQO)

Visual Quality Objectives are based on management objectives for an area, its distance from viewpoints, its visual character, and the significance of its scenic characteristics.

The primary viewpoints for the study area are from Highway 12, from the Pacific Crest Trail, especially as it enters the Goat Rocks Wilderness, and from the William O. Douglas Wilderness. The characteristic landscape is a continuous uniform stand of conifers at the lower elevations which changes at upper elevations (e.g., Hogback Basin) to scattered, thin clumps of trees with glades and larger openings.

Visual Quality Objectives for the study area are displayed in Figure III-14.

### TOTAL VISUAL CONSTRAINTS

Combining the VQO and the VAC the relative total visual constraints on the study area can be displayed. With this combination the ability of the areas to withstand modification are identified. Areas with a “retention” VQO and a “low” VAC are the most sensitive to vegetative modification.

### OBJECTIVES

The main visual objective for design consideration is to protect and enhance the natural landscape while accommodating skiing and related activities. This can be done by blending constructed alterations into the natural, established landscape in a way that achieves harmony during all seasons of the year. Another objective is to emphasize the natural setting in order to introduce the public to the more rustic resource-based recreation opportunities.

### DESIGN CONSIDERATIONS

Architectural style, building materials, color and siting must be considered when creating visually acceptable building designs. Harmonious colors, designs and vegetative screens which complement each other should be considered. Terminals, lift towers and chairs should be painted colors that blend with the site. The color that blends best with the area is dark olive in the 5GY/5/4–5GY/4/4 range using the Munsell Color Charts.

Ski trail layout concepts can provide a wide range of visual results. [See Figure III-15.] Existing runs at White Pass use several different ones. The “Open Parks” design is immediately visible along the main base area next to U.S. 12. Lift 4 has used the “Traditional” concept. Visual

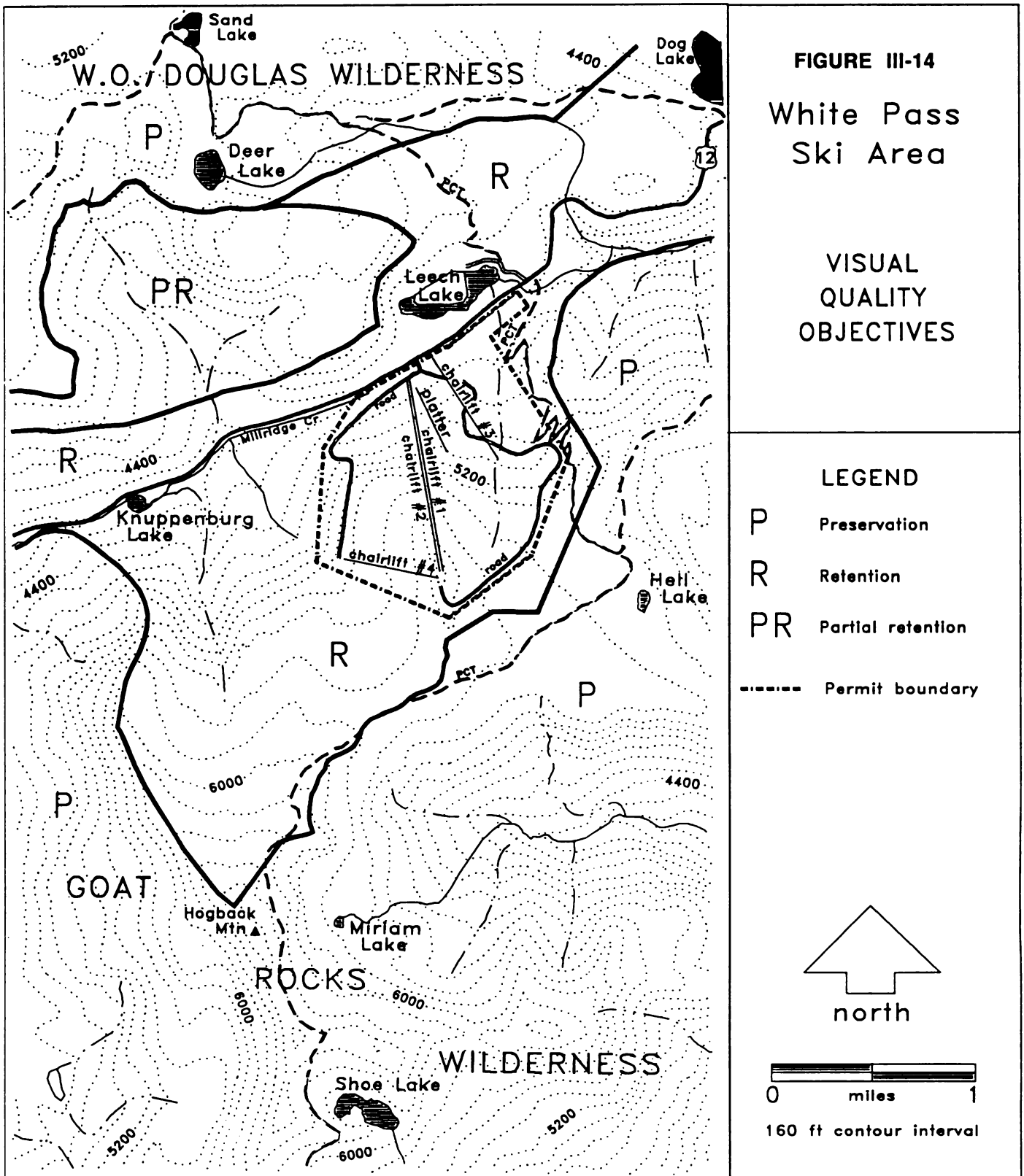
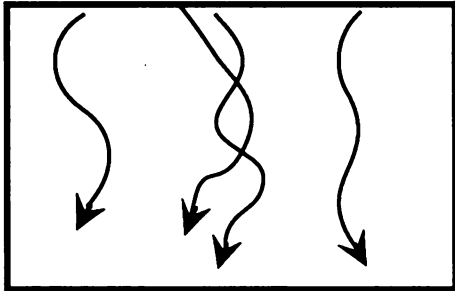
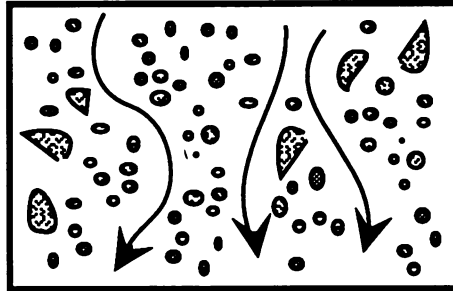


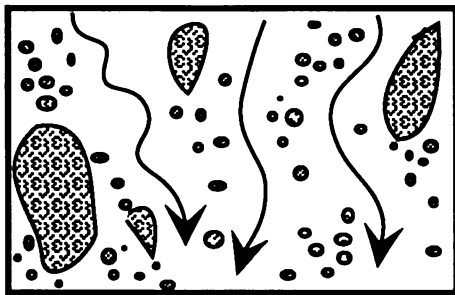
FIGURE III-15, SKI TRAIL LAYOUT CONCEPTS



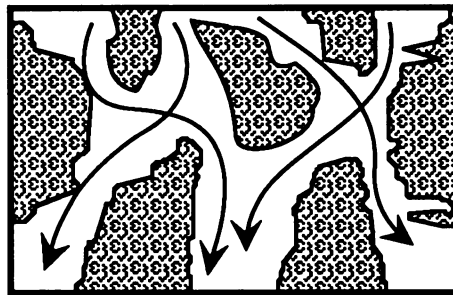
Open Parks  
100% open, 500 ft. wide



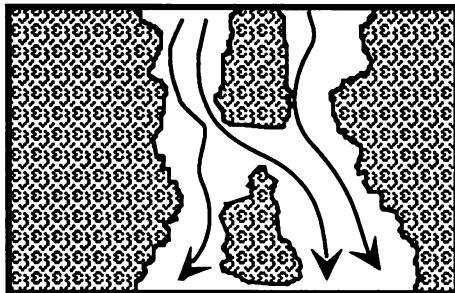
Gladed  
90% open, 300 ft. wide



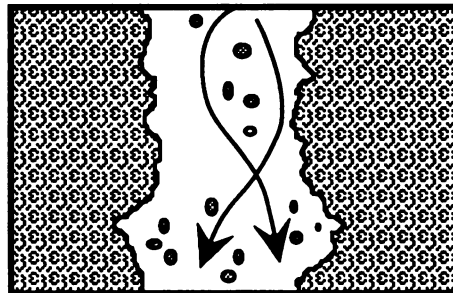
Semi-Gladed  
70% open, 300 ft. wide



Interconnected  
50% cleared, 500 ft. wide



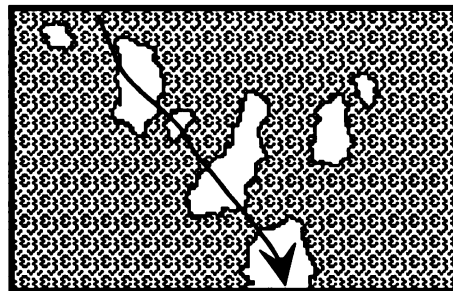
Large Islands  
40% cleared, 180 ft. wide



Tree Islands  
30% cleared, 150 ft. wide



Traditional  
20% cleared, 120 ft. wide



Forested  
Natural Openings

## WILDERNESS

Two Wildernesses are involved in the study area, The William O. Douglas Wilderness to the north of the highway and the Goat Rocks Wilderness south of the Ski Area. The majority of Wilderness impacts would be within the Miriam and Shoe Lake Basins of the Goat Rocks Wilderness.

### WILDERNESS RECREATION OPPORTUNITY SPECTRUM (WROS)

WROS classifications are described the *Wenatchee National Forest Land and Resource Management Plan*. (Published and on file with the Forest Service, Wenatchee National Forest Supervisor's Office, Wenatchee, and the Region Six Office, Portland.)

The area of Hogback Mountain and the upper Miriam Basin adjacent to the Pacific Crest Trail, is classified as Transition. Areas classified Transition are characterized by a predominantly unmodified environment; however, concentrations of visitors may be moderate to high at various times. There are a large number of day users, who often mix with overnight and long-distance travellers on trails near trailheads and Wilderness boundaries. Opportunities for exploration and isolation are reduced and visitors can expect to encounter the greatest number of people compared to other WROS classes.

The Miriam Lake area and Shoe Lake Basin are classified Semi-primitive areas, and areas so classified are characterized by a predominantly unmodified natural environment with the presence of trails, campsites and the evidence of other users. Concentrations of users will be lower than in the Transition areas, but the sight and sounds of other users will be present. A moderate to high degree of opportunity exists in this class for exploring and finding isolation and solitude.

The standards for the Limits of Acceptable Change within each WROS class are listed in the Wenatchee Forest Plan.

### VISITOR USE

#### TABLE III-7, WILDERNESS VISITOR ESTIMATES

##### Summer Use Estimates on Hogback Ridge/Miriam Basin (# of visits)

Entry Point	1985	1986	1987	1988	1989
Round Mt./other	48	51	57	56	58
White Pass S.	191	204	227	225	235
Chair Trail	622	663	738	731	744
PCT from South	96	102	114	113	121
<b>TOTAL for Area</b>	<b>956</b>	<b>1020</b>	<b>1135</b>	<b>1125</b>	<b>1158</b>

Winter Use Estimates (# of visits)

<u>Entry Point</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>
Chair Trail	634	615	759	1194	806
Other	33	32	39	63	164
TOTAL for Area	667	647	798	1257	970

(Source: White Pass Company records and USFS estimates.)

Discussion of Use and Use Figures, Hogback Area

Use counts for the four affected trailheads have been recorded for the years 1985–89. These figures, along with the annual Forest Service Recreation Information Management (RIM) statistics and the White Pass chair use records (supplied by White Pass Company) generate useful records. A review of these figures is qualified by:

1. Use statistics derived from trailhead counts are based on 65 monitoring visits recorded during summer use seasons. These 65 counts are hardly enough to justify broad statistical analysis either across trailheads or across years (1985-89).
2. Trailhead counts generate the following visitor use estimates per day for the high-use season.

Round Mountain	White Pass South	Chair Trail	Leech Lake Trailhead
0.777	4.9 (to 9.9)*	7.5	14.4 (to 23.3)*

(\* The variability of White Pass South Trailhead statistics results from this trailhead often being an overflow camping area for the White Pass Horse camp. This number is further skewed due to records collected on several extremely high-use days. Working toward averages, this use is estimated at 4.9 visits per monitored day. Horses (or horse tracks) are seldom encountered on the Hogback portion of the Pacific Crest Trail. The Hogback trail sidecut may be a factor in this trend. In addition, figures for Chair Trail are difficult to determine from trailhead counts.)

3. Use figures across years show basic trends. From 1984 to 1988 White Pass chair lift records show increases in use of 18% for summer and an 88% increase for winter. RIM data show a 27% increase over this time for summer use. Trailhead monitor counts, because of several individual, extremely high-use days, do not reflect useable data.
4. The user/day ratio derived from use counts compares very favorably with White Pass Company records for chair lift use. The Forest Service yearly trailhead count (averaged to 1986) is 675. The 1986 White Pass figures give chair use visits on the PCT as 663. This seems to confirm both estimates as the numbers represent less than 2% deviation.
5. Year-to-year trends are indicated by both RIM statistics and chair lift counts. White Pass chair data reflects a gentle increase in summer use from 1984 to a slight dip in 1988. RIM data show use dropping from 1984 to 1985 and increasing sharply to 1988. The general trend seems to be small increases in Wilderness use in summer months.

Considering sampling methods and field observations, it appears that narrow analysis of RIM use counts are probably not valid and that White Pass chair counts can be taken as much more reliable. In any case, year-to-year use is influenced by a number

of factors separate from any general, long-use trends. Pleasant weather during early summer months can stimulate use while early fall fire closures can restrict it.

6. Estimates of Shoe Lake visits by point of entry are: 65% (or more) of users enter by the Chair Trail, 20% enter from White Pass S. trailhead, 10% enter from the south PCT, and 5% enter from other sources.

#### LIMITS OF ACCEPTABLE CHANGE (LAC)

##### LAC INDICATORS

Because Shoe Lake Basin is closed to campfires, and camping, the improvements in site conditions there during the period 1974–1989 do not reflect use trends. District trail photo points established in 1986 have not been monitored, but visual inspection does not reveal noticeable trends in trail tread wear or other measurable physical impacts. The primary use indicator monitored within this area is the social impact represented by “encounters.”

Monitoring trips in this area indicate that, on less than 20% of the high-use season days, encounters exceed the five groups or individuals standard for areas classified Semi-primitive, or the eight groups or individuals standard for Transition WROS class. Emphasis on monitoring has been directed toward portal counts and these numbers do not constitute enough samples for a valid statistical conclusion. However, Wilderness Ranger impressions of past visits for the 1984–88 period confirm the above conclusion.

##### SHOE LAKE ISSUES

Shoe Lake presents the most intensely used and managed Wilderness lake on the Naches Ranger District. It is within the 1964-legislated Goat Rocks Wilderness but was managed before then as designated Wild Area.

Kenneth McCall ran sheep in this general area as early as 1916. Observations of the returning timber stands within Shoe Lake Basin leave little doubt that this was a forested basin within the last 150 years. Documentation of similar sites, such as Lake Basin and the North Fork of Union Creek in the Norse Peak Wilderness, includes records of complete basin burning by sheep herders. Lake Basin was burned after the turn of the century and today there is no trace of charred stumps or logs. Shoe Lake Basin’s recent history is probably similar.

##### Recreation

Records regarding recreation in Shoe Lake or conditions there do not precede the 1940’s but interviews indicate that by the late 40’s Shoe Lake Basin was heavily impacted by recreationists. This use was associated with the Pacific Crest Trail. The poor fish habitat at Shoe Lake indicates it was not a popular fishing spot within recent memory. Impacts during the 40’s and through the 50’s were primarily the result of very large horse user groups. Local residents remember visiting Shoe Lake in 1947 with more than 35 riders accompanied by support pack animals. This “expedition” type of outfitted recreation was

accepted as necessary to reach the deep backcountry when the nearest roads were often dozens of miles away.

At the time of the 1964 Wilderness classification Shoe Lake was little different from its condition in 1950. Though no monitoring exists, recreationists remember it as being "browned out" in the flatter areas of the "instep." This condition persisted into the 1970's, no doubt contributed to by increased national popularity of backpacking, increased public interest in the Pacific Crest National Scenic Trail, and the improved access from the White Pass highway. Later in the 70's the toilet was removed from Shoe Lake Basin.

#### Wilderness Management

In response to more stringent Wilderness standards Shoe Lake was closed to camping and campfires around 1972. During this period Goat Rocks was managed with a Wilderness Permit. Voluntary compliance was relied on for both Permit requirements and lake closure. In 1979 the Youth Conservation Corps program, working out of the Clear Lake camp and supervised by Wilderness Ranger Susan McGraff, completed an extensive lake shore rehabilitation at Shoe Lake. Areas were spaded, seed was collected and dispersed, plugs were transplanted, and jute netting was spread to protect bare areas. Rocks were placed to discourage use and define rehabilitation areas.

Enforcement of the lake closure was hampered during this time by both the wording of the Forest closure order and law enforcement emphasis. With the withdrawal of the Wilderness permit system in 1981, public contacts were decreased. The threat of losing valuable revegetative work increased Wilderness managers' emphasis on order compliance around the lake shore and the order was rewritten to include the "Basin" (approximately 265 acres). The first Notice of Violation (NOV) written for a Shoe Lake camping violation was issued sometime in the early 1980's.

The second revegetation project was completed at Shoe Lake in 1986. Under the direction of Wendy Asplin, volunteers rehabilitated a number of sites. Areas were stringed off, seed collected and re-spread, ground loosened, plugs transplanted, and fertilizer applied. And emphasis on law enforcement continued. Horse hitch racks were removed with the 1986 rehabilitation project because they contributed to concentrated impacts.

In 1987 the PCT was moved away from Shoe Lake and the heavily impacted abandoned sections were replaced with a new standard grade lake trail. This new PCT location offered trail users new vistas of Shoe Basin and the alpine Goat Rocks. Additional trail efforts included removing the Shoe Lake access trail from maps and encouraging PCT travel by signing. Public comments on this section of the trail have been favorable and the project has played a major part in lake rehabilitation.

Informal monitoring of Shoe Lake between 1979 and 1986 seemed to indicate the lake shore was making a comeback. However, in the summer following the latest revegetation effort numerous comments were heard regarding the return of vegetation. It is the impression of the Wilderness Coordinator that of the four factors contributing to successful rehabilitation of the lake shore, enforcement of the closure was the primary one. Trail relocation was second, time was third, and the actual projects were of limited effect. However, the education and information dispensed through the projects were instrumental



in gaining public support for the closure, and respect for this type of project. Though enforcement and time spent may contribute *more* to the ground, the public appeared to greatly appreciate the physical improvement projects.

Present plans to continue rehabilitation at Shoe Lake are centered around continued enforcement and annual maintenance of revegetative plots. Other management efforts include continued coordination with the Washington Department of Wildlife (DOW) to stop fish planting there. The lake was stocked only intermittently from 1960 to 1984. It offers a very poor fish habitat with no hiding cover and annual water inversions. Wilderness concerns which result in discouraging fish planting include fish trails, impacted fish spots and increased use. The DOW has been cooperative with the goals of this program. No concentrated project is planned until after 1995. While the lake shore revegetation conditions are improving and continued monitoring will encourage this trend, there are no plans to remove the Lake Basin fire and camping closure. These restrictions were instituted in response to heavy use and physical damage caused by easy access and the attractiveness of the basin. As these causes would not be changed by improved sites around the lake, the closure will probably continue after rehabilitation.

#### CHAIR LIFT IMPACTS TO THE HOGBACK AREA

No doubt user patterns at Shoe Lake would be different without the easy access provided by summer use of Chair Lift 1 at White Pass; it eliminates 3.3 trail miles and 1200 vertical feet from the hike to Shoe Lake. The chair ride is a special experience in itself and contributes to a very desirable day hike with open views, an easy grade and an attractive destination.

Social impacts along the PCT between the chair lift trail and Shoe Lake are a separate issue from physical impacts. If 20 % of the chair lift riders use the PCT and if these numbers represent 65%-plus, of the total use within this area, then separate percentages of increased use created by the chair should be generated for day hikers and overnights.

If an average for all users were estimated (by guards with long-term familiarity with the area), it would be that more than 35% of present use on the Hogback is "generated" by the chair lift operation, separate from use originating at the White Pass trailhead.

Physical impacts at Shoe Lake and along the PCT can be inferred from use and ratios described above. Guards have the impression that chair lift users do not contribute physical impacts proportionally in excess of their numbers. Overnight visitors within Shoe Lake Basin (illegal) tend to disperse to margin areas to avoid confrontations. The majority of lunching day visitors tend to group at the point of the peninsula, making that area hard to revegetate. Sites identified as hardened picnic sites do not exceed Forest Service standards for physical impacts and were intentionally not treated in 1979 and 1986.

It is estimated that a larger proportion of day hikers than touring backpackers utilize the chair, though of course some backpackers do prefer to use the chair simply because of the weight they carry. Most long distance backpackers approach White Pass from the south and do not include the chair lift ride in their plans. This is the result of many factors, including cost and an ethic of "walking every linear foot of the trail." Guards issuing

Notices of Violation at Shoe Lake for camping have no impression that the violating campers used or did not use the lift.

Operation of the White Pass chair lift alters use and management in nearby Wilderness. Its use affects Shoe Lake Basin and the Pacific Crest Trail in the Hogback area. Impacts are both physical and social. To date, effects on Wilderness associated with operation of the chair lift have been manageable and within acceptable limits.

## **CULTURAL RESOURCES**

### **FIELD SURVEY**

Two archaeological reconnaissance surveys by Jacqueline M. Cook and Guy F. Moura have not located any historic or archaeological sites in the area proposed for expansion. Their project included a literature search. In November, 1986, corridors for two proposed lifts, the mid-mountain warming hut location, and the Knuppenburg Lake area were surveyed. In July, 1987, that field survey was supplemented to comply with the Cultural Resources Sample Design for the Wenatchee National Forest (Carter, 1983) and with specific suggestions of the Wenatchee Forest Archaeologist (Carter, 1987). [See Figure III-16 for the survey area.]

### **CONCLUSIONS**

Cook and Moura reported the following conclusions:

No archaeological sites were located in the project area. This does not negate the possibility of their existence. It does indicate that if sites do occur they are indeed not in abundance.

Uebelacker (1980) states that there are indeed sites occurring in what he terms as the "crestal uplands" of the Naches Basin, however, this appears to be speculation since he gives no locational data for these sites. Rick McClure, of the Gifford Pinchot National Forest, has recorded several sites in the Goat Rocks region (personal communication, 1986). This data is currently in the process of write up. Rice (1969) also notes a source of opaque obsidian on [Old] Snowy Mountain in the Goat Rocks. The Goat Rocks Wilderness area is adjacent to and south of this project area. However, these sites are approximately ten miles to the south, ten miles of extremely rugged country, it might be added.

It is reasonable to assume the project area was utilized in the normal course of the seasonal round cycle in both pre-historic and historic times. The area abounds with flora such as huckleberries and mosses, and fauna such as mountain goats, elk and deer. Also, McClure is asserting there is an obsidian source for tool production. At this point in time, there is no physical evidence in the project area to confirm usage.

Cook and Moura recognize that the South Central Cascades of Washington have "received less archaeological attention than other comparatively-sized areas in the state." They give the following overview statement:

The settlement and subsistence pattern of the Sanpoil and Nespelem, based on Vern Ray's ethnographic work (1933), is the major framework for both archaeological and ethnographic interpretations throughout the Columbia River Basin (Uebelacker, 1980).

This ethnographic pattern refers to a seasonal exploitative subsistence pattern. Briefly, winters were spent along the rivers in either semi-subterranean pit houses or in mat lodges. Early spring would allow small groups to move to temporary sites, gathering early root crops and small game and shellfish. In early summer, the fishing locations would be occupied. Anadromous fish are present in the Columbia River from May until November. Between the summer and the fall salmon runs, various berry crops would be harvested in the high mountains by the women. In the fall and early winter, large game hunting would take place in the mountains.

Distribution of the ethnographic tribal groups in the general vicinity of the project area would include the Yakimas on the east side of the Cascades and the Taidnapam on the west side of the mountains. Schuster (1975) reports, "The home of people known aboriginally as Yakima consisted of the territory drained by the river of that name, from the tributaries rising in the Wenatchee Mountains on the north to the Simcoe Mountains and Horse Heaven Hills on the south, and from the summit of the Cascades on the west to the territories of the Columbia-Sinkiuse and Wanapams along the Columbia on the east."

This ethnographic pattern refers to not only an exploitative subsistence pattern but also to a network of established social relationships through intermarriage with Wenatchi, Wishram, Skin, Klickitat, Walla Walla, Umatilla, Wayam-Tenino, Nez Perce, Palous, Spokane, Wanapam, Columbia, and Coast Salish such as the Snoqualmie. Co-utilization of resources such as fishing sites and root and berry grounds further strengthened intergroup activities and allowed a great deal of movement throughout the region (Jermann, 1976).

Taidnapam is a linguistic designation for Sahaptin speakers living west of the Cascade divide and who were found principally along the upper Cowlitz and Lewis Rivers. The Taidnapam were Cowlitz in culture and ecological adaptation while speaking an interior language (Jermann, 1976). While the Taidnapam also employed a seasonal subsistence pattern similar to the Yakimas, major differences would include year-round hunting and occupying cedar plank houses most of the year.

#### INDIAN NATION CONCERNS

In "A Cultural Resource Overview: Prehistory and Ethnography, Wenatchee National Forest," 1986, Jan L. Hollenbeck and Susan L. Carter noted:

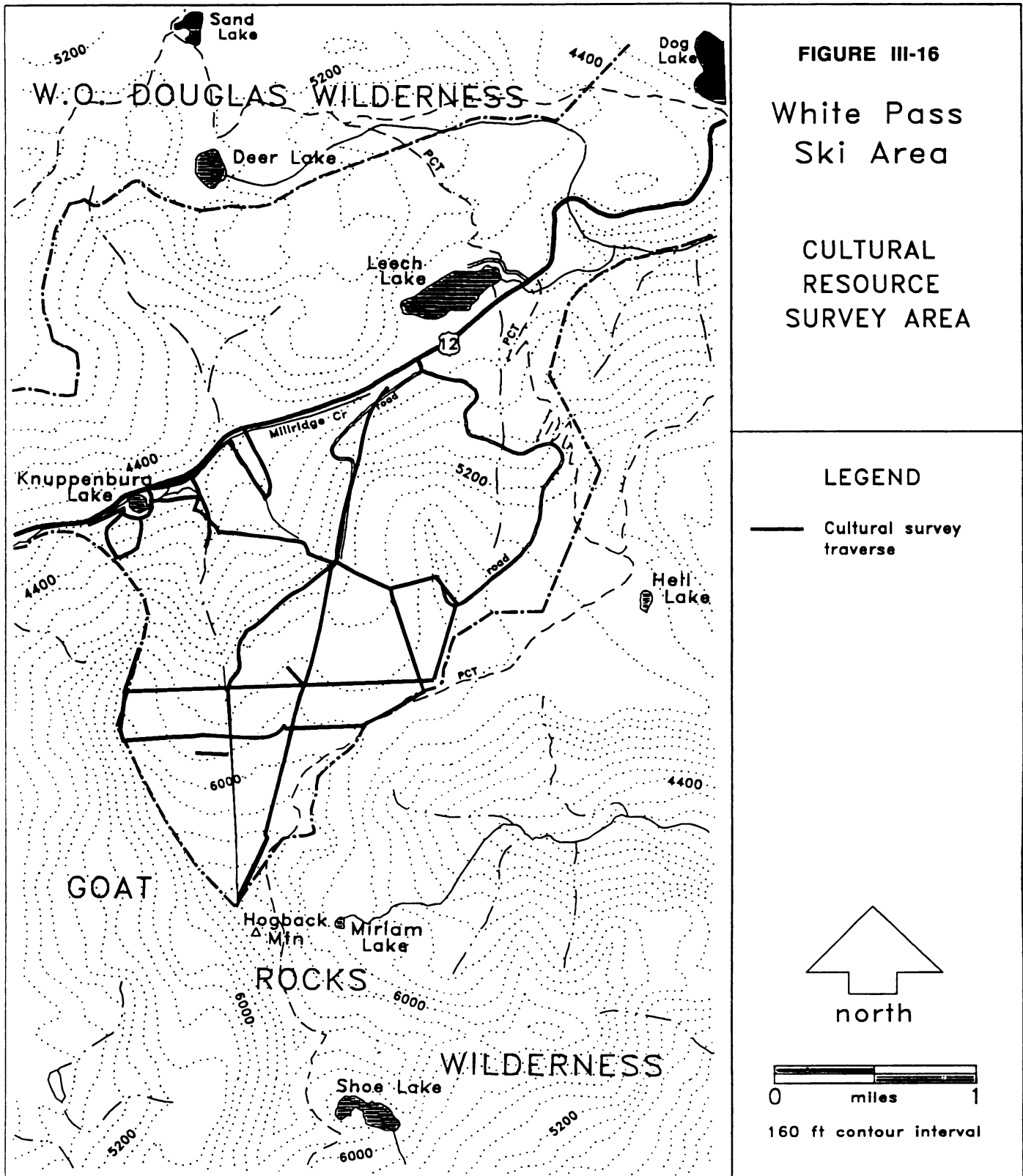
For the American Indian there [are] no sharp divisions between religion and daily life. The traditional resources—fish, game, berries and roots—

played a vital role in the religious beliefs and ceremonies. Naming ceremonies, births, weddings and funerals all included traditional foods in the associated feasts and gift giving. These resources were also an integral part of the annual first foods feasts that heralded the first appearances of the food resources in the spring....

Religious traditions continue to be a part of contemporary American Indian lifeways. Traditional resources, including roots, berries, fish, game and medicinal plants, play an integral role in the first foods feasts and other ceremonies. They are collected from many of the same localities as they were formerly, although the methods of collection may have changed....The Forest remains an important component of these ceremonies, rituals and religious beliefs.

The Yakima Indian Nation has expressed concern and is opposed to the expansion of White Pass Ski Area into Hogback Basin. The Hogback Basin Area is at the western edge of the lands ceded to the Yakima Indians in the 1855 treaty with them [see Appendix G]. It is also within the traditional territory of the Taidnapum, or upper Cowlitz, tribes. No formal treaty for these lands was ever consummated. Use of the Goat Rocks area by the Taidnapum is well documented by Jacobs (1934). Traditional use of the general area by both the Yakima and the Taidnapum Nations is recognized, however, present use is minimal.

Yakima Indian tribal members have said that there are burial sites in the Hogback Basin and that the Basin was a retreat area for Chief Kamiakin during the Yakima Indian War. Further conversations indicated the Kamiakin Band probably used the general area from the Goat Rocks north—which may have included Hogback Basin as well as most of the other similar basins in the vicinity of White Pass. They have also indicated in general terms that all of the mountains surrounding White Pass were used for burial grounds and there are bones and other evidence of historical occupation throughout the area.



## LAND USE AND REGULATIONS

The study area is entirely National Forest System Land. The only private land in the vicinity is 30 acres of patented mining claims owned by Burton Lehman. Road and water transmission special use permits associated with these claims are the only other permits in the area

Management of the National Forest land is currently directed by the *Wenatchee National Forest Land and Resource Management Plan* and the *Proposed Gifford Pinchot National Forest Land and Resource Management Plan*. Management actions are coordinated through an agreement last revised in 1987.

Management direction provides for emphasis on recreation and Wilderness with no planned or programmed timber harvest.

The Lewis County Planning Department states that the White Pass Ski Area is not included in their Comprehensive Plan nor has it any special requirements. Only normal permits would be required (e.g., building permits).

White Pass Company occupies National Forest administered land under the Special Use Permit authority. The Special Use Permit is a legal document with the specific uses permitted listed on the face of the permit. There are clauses in it that control the actions of the permittee and are agreed to by both parties. If the decision is made to issue an amended Permit to include additional land for Ski Area expansion, other documents would be required before any development can occur. The specifics of these documents would be outlined in the Special Use Permit clauses and in the Master Development Plan that becomes a part of it.

## RECREATION

### RECREATION OPPORTUNITY SPECTRUM

White Pass is a popular year-round recreation area. Recreation opportunities there vary due to setting, activity and experience opportunity, all of which differ from winter to summer. White Pass recreation opportunities have been inventoried using a system called the Recreation Opportunity Spectrum (ROS). [See Figure III-17.] The range of recreation opportunities present indicates the types of experiences that can be expected in different areas. An explanation of categories can be found in the ROS Users Guide, USDA Forest Service.

### WINTER ACTIVITIES

While many activities do take place, snowshoeing, camping, and skiing are the primary winter activities in the White Pass area. It is not regularly used for snowmobiling and the White Pass Company discourages such sports as "tubing." Additional information about winter recreation at White Pass can be found under "Skiing Characteristics" (pages 302, ff.).

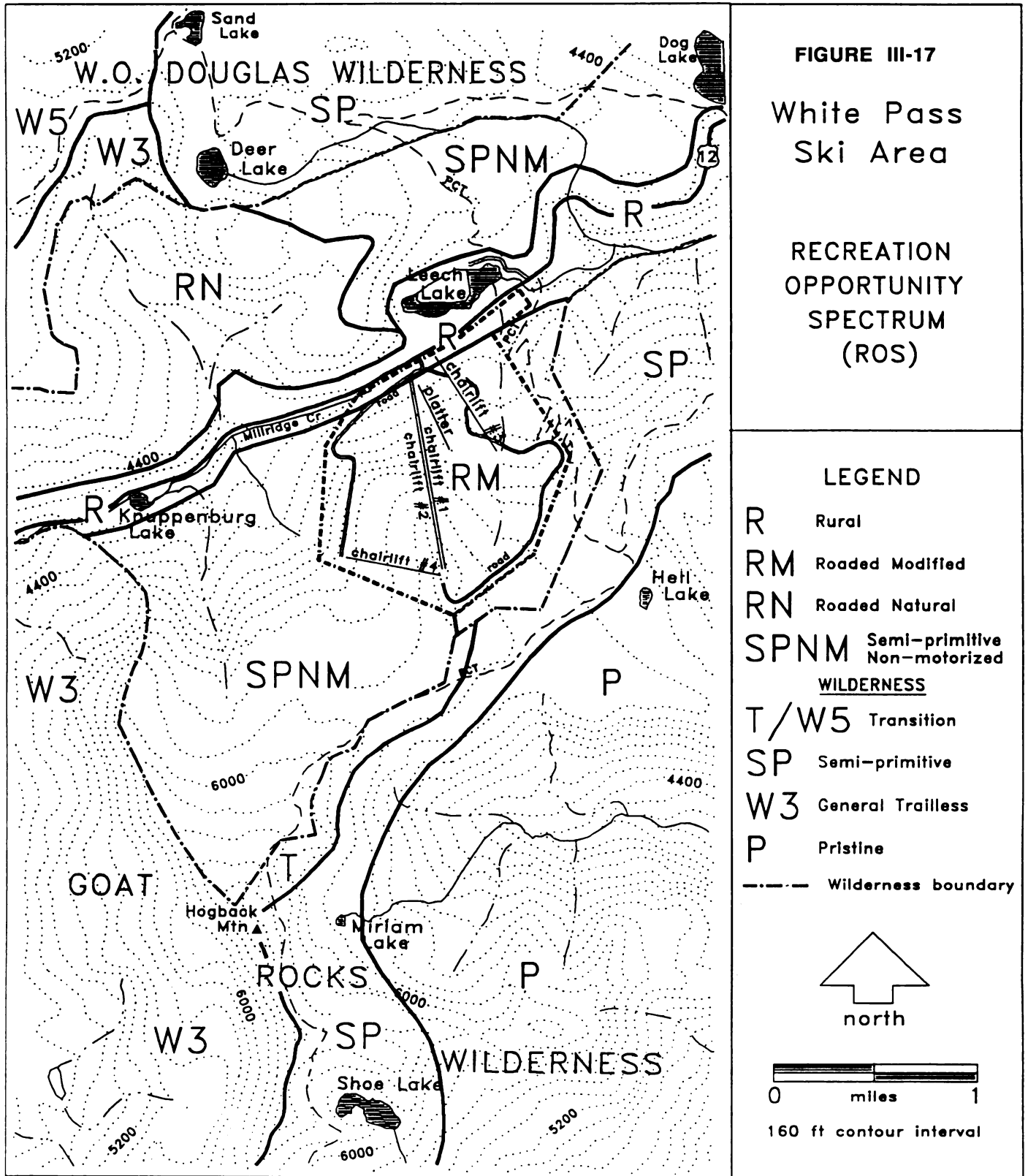
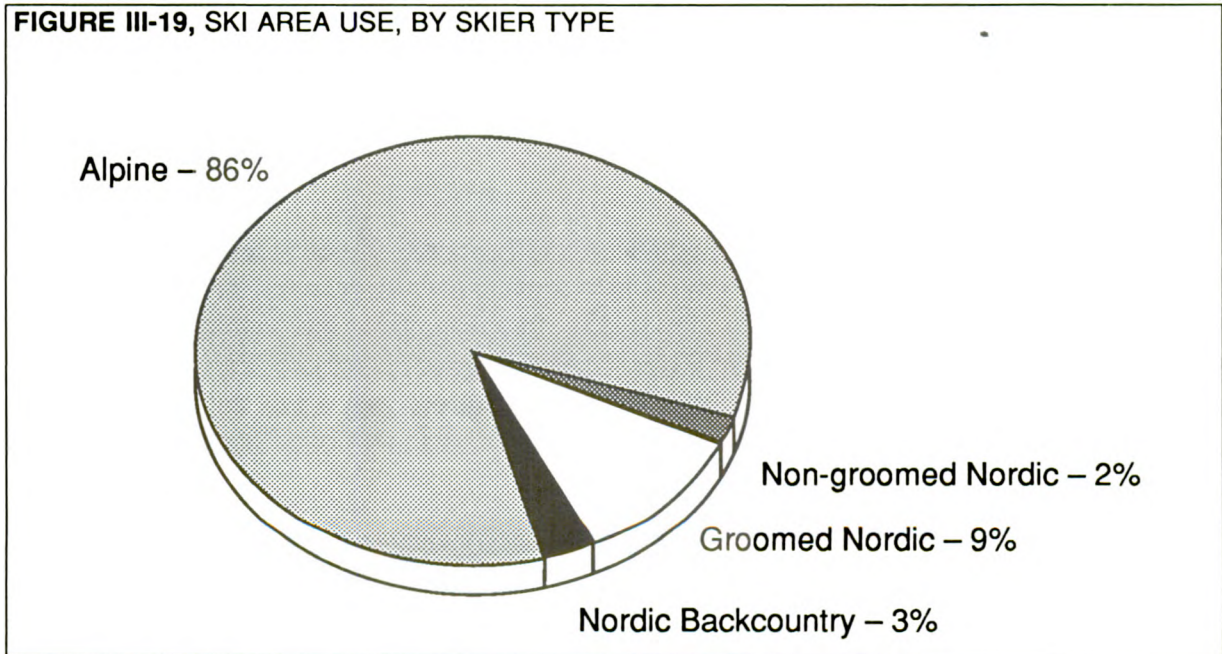


FIGURE III-18, MIRIAM BASIN, LOOKING SOUTH FROM HOGBACK RIDGE



FIGURE III-19, SKI AREA USE, BY SKIER TYPE





### WINTER RECREATION OPPORTUNITIES - WHITE PASS AND VICINITY

This information was compiled from a variety of sources, including Naches and Packwood Ranger Districts recreation reports, Mt. Rainier National Park recreation reports, and *Cross Country Ski Tours 2*, a text published by The Mountaineers in 1988. (The skill level ratings are generally from this publication.) [See also Figure III-20.]

#### GROOMED CROSS-COUNTRY SKI TRAILS

Currently, only the White Pass Ski Area is providing groomed cross-country ski trails on the Naches, Packwood and Randle Ranger Districts. At White Pass there are nine miles (15 km.) of groomed trails through rolling terrain which offers variety and challenge to skiers of all abilities. Their elevation ranges from 4,400 to 4,800 feet. As more trails are groomed, more use will occur on those trails. Groomed trails tend to provide easier and safer skiing, which many nordic skiers prefer.

#### NON-GROOMED, NON-PAY CROSS-COUNTRY SKIING (CLOSED TO SNOWMOBILES)

##### Pleasant Valley

Elevation: 3,200 – 3,600 feet. This trail system includes four designated Sno-Parks on Highway 410 with a total of 46 spaces for vehicle parking: at the Crow Lake Way trailhead (8 spaces); at the Hells Crossing Trailhead (20 spaces); Union Creek trailhead (12 spaces); and, at the Pleasant Valley trailhead (6 spaces). The area offers 14 round-trip miles of marked trails for skiers of all skill levels. The trail is a loop paralleling Highway 410 along both sides of the American River between the Hells Crossing Campground and the Pleasant Valley Campground. With the construction of an additional mile of trail, the Pleasant Valley trail system could gain access to additional cross-country skiing terrain in the vicinity of Morse Creek and Mesatchee Creek. Feelings of remoteness and solitude may be difficult to achieve since the trail system parallels Hwy 410. There are some good views of Fifes Peak from natural openings along the trail.

##### Goose Egg

Elevation: 2,600 feet. This is a designated Sno-Park area on Forest Service Road 1200 about one-quarter mile from Highway 12 with room to park 20 vehicles. There are approximately 4.2 round-trip miles of marked trail. The terrain is level and the skiing is rated "easiest," or beginner. The trail follows the Tieton River for two miles. This area is not remote; it follows a power line for a short distance and is just across the river from Hwy 12. Views are of the Wildcat area, Bethel Ridge and Goose Egg Mountain.

##### North Fork Tieton/Clear lake

Elevation: 3,100–6,000 feet. There is parking for 15 vehicles at the state-designated Sno-Park. The road to the trailhead, FS Rd 1200, is plowed. There are three loops, south east and west, and access to the Clear Creek and Round Mountain roads. The marked trails offer about six miles of easy cross-country skiing. The advanced-basic skier can ski up to the end of the Round Mountain road (9 miles, round-trip). From there the mountaineer can

take the Round Mountain summit tour, an additional nine-mile round-trip from the trailhead at the end of the road.

#### Tumac Plateau

Elevation: 4,500–6,000 feet. The Tumac Plateau is within the William O. Douglas Wilderness and is accessible from the White Pass and Dog Lake areas. This large plateau offers a Wilderness challenge, relatively safe topography, and possibilities for ski touring tied through to the Bumping River drainage. Some excellent views of Mt. Rainier and craggy peaks from wide-open meadows are present in the area, as well as opportunities for feelings of solitude and remoteness. Telemarking off the Tumac Mountain cinder cone is also good. Though use is not high, this area is unique and is consistently used by a few enthusiasts.

#### Bumping Lake

Elevation: 3,460 feet. Although the trails as yet are not marked, this area receives heavy use. Access from Highway 410 is along the Bumping River Road 1800, which is plowed to Goose Prairie. The parking area is also plowed, even though it is not an officially-state-designated Sno-Park. Many people think this area provides some of the best cross-country skiing on the Naches Ranger District. It offers good views of the surrounding peaks in the William O. Douglas Wilderness. The terrain around the lake and campground offers about 13 miles of beginner/basic-skill-level skiing. Opportunities for intermediate skiers exist with a 17-mile round-trip to Miners Ridge and Granite Lake. There is potential for a concessionaire to provide ski rentals and grooming. Currently, Whistlin' Jack's Lodge on Highway 410 rents skis.

#### Hogback Basin

Elevation: 6,000–6,700 feet. This area offers high-elevation cross-country skiing (telemarking) and backcountry skiing. Access is through the White Pass Ski Area, either on the snow or by chairlift to the top of Pigtail Peak. It offers open meadows, gentle terrain, easy access, deep, cold snow, a long season, and outstanding winter panoramic scenery with views of Mount Rainier.

#### Road 1284

Elevation: 4,300–4,800 feet. This area, also known as Yellowjacket and/or White Road, is near the Ski Area. The State Highway Department plows the road to their maintenance shed and provides space for about 20 cars. This parking area provides access to an area with good views of Mt. Rainier and excellent beginner skiing, but also offers some good telemark skiing in adjacent clearcuts. The route is seven miles round-trip. This area currently receives considerable use.

#### Chinook Pass and Naches Peak

Elevation: 4,600–6,360 feet. These areas offer early season skiing, before Hwy 410 is closed for the winter, and late spring skiing, once the road is opened for the summer. It has about four round-trip miles of intermediate terrain with outstanding views of Mt. Rainier. In the spring, Cayuse Pass is usually opened in mid-April, but Chinook Pass remains closed

for weeks due to the heavy snowpack. Consequently, there is about a four-week window of opportunity for cross-country, backcountry and telemark skiers to use the bowls and glades in this area. A large parking lot is plowed at the summit of Cayuse Pass (the junction with Chinook Pass) and an estimated 50–80 cars jam into the parking area on weekends to take advantage of these opportunities. The Park Service is considering installation of toilets at the site. A similar situation occurs in the fall when Chinook Pass is closed by heavy, early snowfalls and Cayuse Pass remains open typically for another 2–4 weeks.

#### Crystal Mountain Ski Area and Vicinity

Elevation: 4,000–6,000 feet. There are opportunities for mountaineering level (advanced-expert) cross-country skiing off Chair #7 at the Crystal Mountain Ski Area. Routes go to the Bullion Basin and Norse Peak areas. These routes also provide access into Lake Basin and Big Crow Basin, backcountry with a variety of terrain which is recommended for experienced mountaineers due to the remoteness. Road access to the Crystal Mountain Ski Area is from Enumclaw, but access can also be gained from the Crow Lake Way trailhead on Hwy 410.

#### Sand Lake/Cowlitz Pass (north from the White Pass Ski Area)

Elevation: 4,400–5,600 feet. The route to Sand Lake along the Pacific Crest Trail is approximately seven miles round-trip. It is presently used by snowshoers and backcountry skiers. It is recommended for intermediate-skill-level skiers. The area is within the William O. Douglas Wilderness and its trail touring is characterized by easy access and open meadows protected from the wind. Views are generally closed in.

The Cowlitz Pass trail traverses terrain recommended for advanced skiers and is the dropping-off point for more tours into the Tumac Mountain area. It is approximately 16 miles round-trip.

#### Ohanapacosh Entrance, Mt. Rainier National Park

During the winter, Highway 123 is closed at the entrance to Stevens Canyon or at Ohanapacosh. Limited Parking is available at the end of the plowing and at the Ohanapacosh Ranger station. Information, restrooms and telephone are available at the Ranger Station. Popular ski routes in this area include:

**Grove of the Patriarchs:** The trailhead is a quarter mile up the Stevens Canyon Rd. (The Stevens Canyon entrance is two miles from the Ohanapacosh Ranger Station.) The trail may be difficult to follow, but it generally parallels the Ohanapacosh River. It offers excellent winter scenery.

**Ohanapacosh Campground:** The unplowed, but often-tracked campground loop roads near the Ohanapacosh Ranger Station are popular and suitable for non-groomed trail skiing.

#### West Side of Mount Rainier National Park

**Mowich Lake:** Elevation: 3,600–5,000 feet. The minimum skill level recommended for this trail is advanced basic. The trip to Mowich lake is 11 miles round-trip. Access is from

**Buckley.** The area is not recommended until spring or when the roads are snow-free to at least the park boundary.

**Seattle Park:** Elevation: 2,800–6,400 feet. Sixteen miles round-trip, it usually requires 2–3 days snow camping to make use of this excellent telemark skiing area. Minimum skill level recommended is advanced to mountaineer. Access is from the Carbon River entrance to the park.

**Paradise:** There are several popular areas for nordic skiing near Paradise, within the park:

*Reflection Lakes:* Elevation: 4,600–5,700 feet. Access is from the Nisqually Park entrance. Ski from the Narada Falls Viewpoint along the road to Stevens Canyon and the meadows around the Paradise picnic area.

*Mazama Ridge:* Elevation: 4,800–5,700 feet. Access is from the Nisqually entrance. The route is along Mazama Ridge from Paradise to Reflection Lakes. It's six miles round-trip for the advanced skier.

*Camp Muir:* Elevation: 5,500–10,000 feet. From Paradise this is a 9-mile round-trip for the mountaineer. A shorter trip is the 3-mile round-trip to Glacier Vista.

#### Tatoosh Range

Elevation: 4,600–6,000 feet. Access is from White Pass along the Pacific Crest Trail and is generally easy. There are excellent views of Mt. Rainier and the White Pass Ski Area.

#### Twin Peaks

Elevation: 4,500–6,000 feet. Access from Highway 12 at White Pass is south along the Pacific Crest Trail to the Round Mountain Trail, or downhill east off the White Pass chairlifts. Views are not spectacular and the skier has to ski uphill to get back to the upper part of the Ski Area. This area does not serve mainstream backcountry skiers.

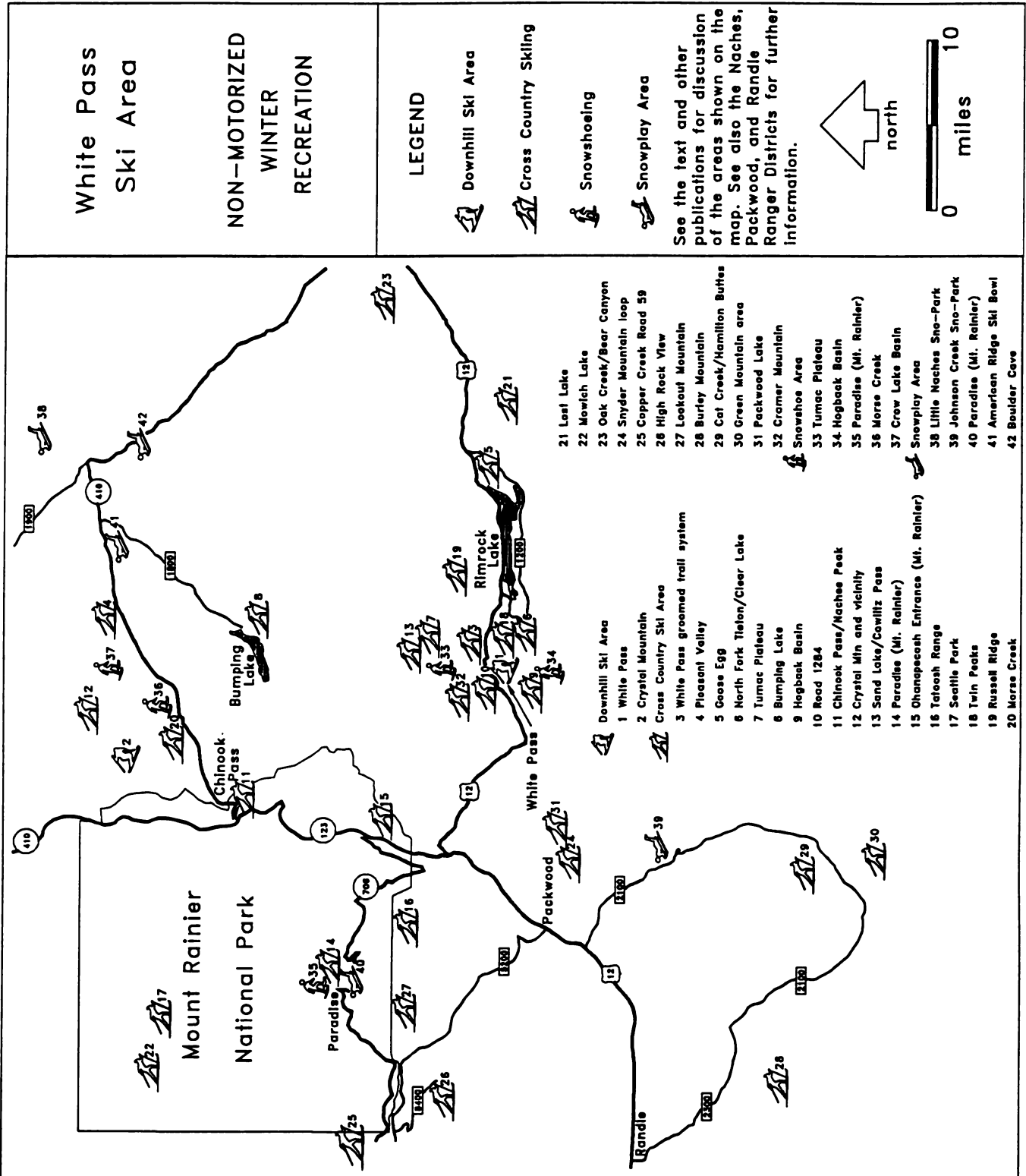
#### Russell Ridge

Elevation: 4,000–5,000 feet. This area generally has short runs. Access is difficult, but the views are good of Mt. Rainier, Mt. Adams and the Goat Rocks and William O. Douglas Wildernesses.

#### Morse Creek

Elevation: 3,900–6,000 feet. This is an open basin area especially good for telemarking and intermediate to advanced ski touring, with some areas good for beginners. It usually receives early snow, but also has areas of potential avalanches (mostly on the steeper slopes). Though used heavily by Yakima outdoor organizations, feelings of remoteness and solitude can usually be experienced. The area is reached from the parking area at the gate on Highway 410, just west of the Morse Creek Bridge (skiing along the road corridor beyond the gate is not allowed). The basin is generally closed in, but the upper basin slopes offer some views of the east slopes of the Cascades and adjacent Wilderness areas.

FIGURE IV-20



## OTHER AREAS

These have good opportunities for cross-country skiing but snowmobiles may be encountered.

East Side of Mt. Rainier (partly open to snowmobiles)

**Along Highway 123 Toward Cayuse Pass:** The road is unplowed, climbs gently to Cedar Flat, is generally flat for two miles, and then climbs gradually towards Cayuse pass. Skiing beyond the Shriners Peak trailhead, 3.5 miles from the Stevens Canyon entrance, is not recommended due to the avalanche hazard. Snowmobiles are allowed on the unplowed portion of Hwy 123 to the Stevens Canyon entrance.

**Stevens Canyon Entrance Toward Box Canyon:** Ski along Hwy 123 to the Stevens Canyon entrance, then up the Stevens Canyon Rd. toward Backbone Ridge, then down to Box Canyon. The trip may require overnight camping as it is about 20 miles round-trip from the entrance. Snowmobiles are allowed on the Stevens Canyon Rd. to Box Canyon.

**Lost Lake:** Elevation: 2,600–3,800 feet. On the Naches Ranger District, this area offers advanced basic skiing with round trips up to ten miles. Campsites are available at Lost Lake. Parking is at the Goose Egg Sno-Park or along FS Road 1201, which is usually plowed to Camp Ghormley.

**Oak Creek Wildlife Area:** Elevation: 2,500–3,600 feet. The road is plowed to the area where elk are fed every winter. Beyond there, skiing is on unplowed logging roads. It's recommended for intermediate skiers and is four miles or more round-trip. The tour begins just beyond the elk feeding station on FS Road 1400.

**Bear Canyon:** Elevation: 2,000–4,200 feet. Off highway 12 near the Oak Creek Wildlife Area, it offers intermediate skiing and is ten miles round-trip.

**Snyder Mountain Loop:** Elevation: 2,800–4,560 feet. This tour is near Packwood, offers intermediate skiing and good telemarking in clearcuts along the way, and is ten miles round-trip. From the top of Snyder Mountain the view of Mt. Rainier is excellent.

**Copper Creek Road 59:** Elevation: 1,900–5,600 feet. This is an outstanding area for ski touring located about five miles from Ashford. Intermediate skill level is recommended for this 14-mile round-trip. It features views of Mt. Rainier, Mt. St. Helens and Mt. Adams.

**High Rock View:** Elevation: 2,300–4,300 feet. Take FS Road 84 from the Skate Creek Road (FS Road 52) for round-trips of 3 to 20 miles of basic, beginner-level skiing near Ashford.

**Lookout Mountain:** Elevation: 2,600–5,500 feet. Access is from the Skate Creek Road, is advanced basic skiing, and is 7–13 miles round-trip.

**Burley Mountain (Randle Ranger District):** Elevation: 1,400–5,300 feet. South of Randle near the Cispus Center, intermediate skill level is recommended. Up to 18 miles round-trip, it is an excellent area for telemarking and snow camping.

**Cat Creek Road:** Elevation: 2,600–4,400 feet. This has intermediate skiing and is up to 12 miles round-trip.

**Hamilton Buttes:** Elevation: 2,600–5,500 feet. This is a round-trip tour near Cat Creek Road of 20 miles recommended for the skier with advanced skills.

**Green Mountain Area:** There are two potential tours here. One is an advanced basic skill level tour of about six miles round-trip to a viewpoint. The other is an eight-mile loop of the mountain recommended for advanced skiers.

**Packwood Lake:** Elevation: 2,700–3,200 feet. From the trailhead to the lake is about nine round-trip miles for the advanced skier. If the road is not plowed to the trailhead, add six miles of road skiing.

### OTHER WINTER RECREATION

#### SNOWSHOEING, SKI-MOUNTAINEERING, SNOW CAMPING

There are no areas specifically designated for these activities. Snowshoers are generally directed to high-elevation trails. Areas currently being used for these activities include:

- Pacific Crest Trail both north and south from White Pass (Blankenship Meadows/Mosquito Valley/Tumac Plateau in the William O. Douglas Wilderness and Shoe lake and Miriam Basin in the Goat Rocks Wilderness),
- Gold Hill Cabin (near Morse Creek off the Chinook Pass Highway, under special use permit, listed in the Cascadian Newsletter 2/89),
- Crow Lake Way, and the Bald Mountain Sno-Park.

Snowshoers reach the Norse Peak Wilderness from both the Crow Lake Way trailhead (Naches Ranger District) and from the Crystal Mountain Ski Area into Bull Buck Cabin, a hunter's cabin built in the 1950's (it is listed for removal from the Wilderness in the next couple of years).

Mount Rainier sponsors naturalist snowshoe walks from Paradise during the winter on weekends and holidays. The park is also a popular area for winter backcountry camping.

#### HELICOPTER SKIING

There is no demand or suitable terrain for helicopter skiing, although there have been discussions about Divide Ridge as having potential for it.

#### SKI-HUT TOURING

There is currently none in the area. However, potential exits in the Blankenship Meadows area (William O. Douglas Wilderness), along the Pacific Crest Trail, in the Bumping Lake area, and in the Bethel Ridge/Cash Prairie area. Access to set up portable huts outside the Wilderness may pose a problem, i.e., the huts would have to be carried into the areas in the fall and back out again in the spring. In the Cash Prairie area, snow cats could take skiers to the top of the ridge along FS Road 1500 and the skiers could ski down along any number of routes. Views of Mt. Rainier and the William O. Douglas Wilderness are spectacular from Bethel Ridge.

### **SNOW CAT TOURING**

Whistlin' Jack's Lodge on Highway 410, about 26 miles west of Naches, is currently advertising snow cat rides in their vicinity. They have the Spring Creek Road 1705 loop under Permit for that use and apparently they have also been taking skiers up into the woods to ski back down to the lodge.

### **SNOW PLAY**

The only area specifically designated for snow play (tubing, sledding, tobogganing) is the groomed tubing area at Paradise in Mount Rainier National Park, however, the old American Ridge Ski Bowl is currently being used for snow play. Other areas reported good are the Boulder Cave parking lot (Sno-Park), the Nile Feeding Station (Sno-Park), Bumping Dam, and the clearcuts reached from the Little Naches 1 Sno-Park. Also noted as a good area for snow play and sledding is the State Department of Game land in Oak Creek. It has a short season, but its easy access makes it popular. The Packwood Ranger District reports that there are several areas suitable for snow play, including the Johnson Creek Sno-Park and adjacent FS Roads 2110 and 2120. [See map, Figure III-20.]

### **SUMMER/FALL ACTIVITIES**

The study area offers hiking, horseback riding, camping, boating, fishing, mountain biking, chair lift rides and general sight-seeing, photography, and enjoyment of the outdoors in a mountainous setting. Following is a short discussion of specific recreational activities available at White Pass.

#### **HIKING/HORSEBACK TRAILS**

White Pass offers hiking in the Goat Rocks and William O. Douglas Wildernesses on several maintained trails, including the Pacific Crest National Scenic Trail. Activities typically associated with hiking include photography, picnicking, sight-seeing, fishing and camping. Table III-8 (next page), from the Naches Ranger District Trail Guide, is a brief description of the trails in the vicinity of White Pass. Refer to Figure III-21.

#### **CAMPING**

There are three developed campgrounds in the vicinity of the White Pass Ski Area. They are Dog Lake Campground, White Pass Campground, and White Pass Horse Camp. [See summer map, Figure II-7S.]

Dog Lake Campground is at 4300 feet elevation on the south shore of Dog Lake adjacent to Highway 12. It has eleven camping units.

White Pass Horse Camp, elev. 4500 ft., is adjacent to Leech Lake and the White Pass Lake Campground. It has six camping units, eight hitch rails, a loading ramp and a watering area. On high-use weekends overcrowding is a problem as large horse groups converge on the site. Several solutions have been discussed for dealing with this problem. They include initiating a permit system, altering the sites to physically limit parking and/or camping, providing alternate sites to disperse the use, and enforcing the 6 site/18 vehicle capacity of the horse camp.



TABLE III-8, WHITE PASS AREA HORSE AND FOOT TRAILS

Trail Name	Number	Mileage	Uses	Notes
Chair Lift	1112	0.3	hiker, horse	Short tie trail between White Pass chair lifts and the PCT. Hard to follow downhill from chair lifts.
Hog Back	1144	5.5	hiker, horse	Ties between the Round Mountain trailhead and the PCT. Not recommended for horses. Good view. Two difficult sections.
Pacific Crest (south)	2000	13.3	hiker, horse	Pacific Crest National Scenic Trail. White Pass south to Old Snowy Mt. Camping and fires prohibited at Shoe Lake. Alternate camping at Hidden Springs.
Pacific Crest (north)	2000	27.6	hiker, horse	White Pass to Chinook Pass. Scenic forest canopy with some outstanding views. Heavily used. High-level trail maintenance. Dispersed Campsites encouraged. Northern 10 miles shared by U.S. Park Service.
Dark Meadows	1107	1.8	hiker, horse	Ties PCT to Cramer Lk. Trail and Dog Lk. Campground for loop hike. Party size restrictions in the Wilderness.
Sand Lake	60	4.1	hiker, horse	Climbs steeply through dense forest from road 1284 trail, enters W.O. Douglas Wilderness, continues level past Cortright Point to PCT, and terminates.

Camping in the Goat Rocks and William O. Douglas Wildernesses is generally unrestricted. No camping is allowed within 200 feet of the PCT nor within 100 feet of Wilderness lakes (200 feet for horses). Shoe Lake Basin is closed to camping.

#### PICNICKING

Picnicking is available at all of the campgrounds listed above, at Knuppenburg Lake, and at the Clear Creek Overlook just east of Dog Lake. All have restroom facilities.

#### MOUNTAIN BIKING AND RUNNING CAMP

Trails in the White Pass area outside Wilderness can be used by the mountain bike rider, with the exception of the Pacific Crest Trail. The road system within the current White Pass Company Permit Area is used by mountain bikers, though their use of the ski slopes is discouraged by White Pass Company personnel. For the past few years the White Pass Company, along with other corporate sponsors, has staged mountain bike and running races on its groomed nordic trail system. The company encourages use of the

nordic ski trail loops by these bikers. Because of Wilderness and PCT restrictions, opportunities for developing additional bike trails is limited at White Pass.

Running camps, where people train for cross-country skiing and long-distance runs, also use the White Pass area. These groups cover a lot of territory and have used the Pacific Crest Trail and at times some of the Wilderness trails. They also use areas around Clear Lake.

#### CHAIR LIFT RIDING

Summer operation of Chair Lift 1 began in 1957. The 45-minute round-trip ride offers users an outstanding view of Mount Rainier and adjacent Wilderness. Use averages 4,000 people per summer season. White Pass Company plans to let transporting mountain bikes on the chair lifts continue.

#### BOATING

Boat landings are provided at Dog and Leech lakes. Motorized boats are not allowed on Leech Lake.

#### FISHING

Of the lakes in the White Pass study area, Leech, Dog and Knuppenburg lakes provide the best fishing. Leech Lake is limited to fly fishing. With the exception of Hell and Deer lakes, none of the Wilderness lakes in the study area are known to have a fishery.

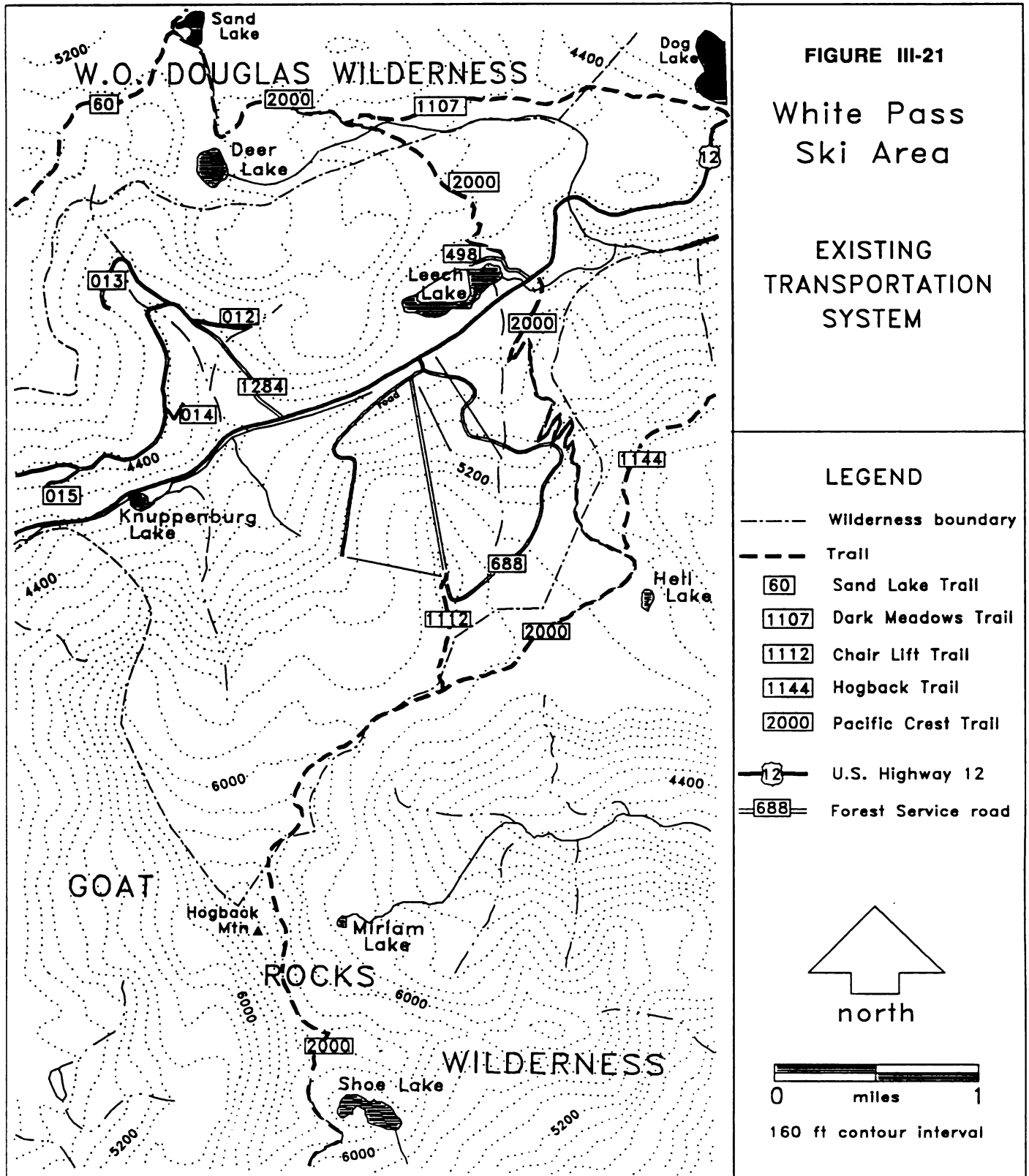
#### ROADED TOURING/SIGHT-SEEING

Connected to Chinook Pass via State Highway 123 (Cayuse Pass), White Pass is part of a popular sight-seeing route considered for designation as a Scenic Byway. This "Sunday drive" loop is a favorite for people from both sides of the Cascades in spring, summer and autumn. (Highway 410 is closed at Cayuse Pass and Morse Creek during the winter months.) Campground and dispersed camping opportunities are available along the way. Unique sightseeing opportunities of this route are on the White Pass highway, e.g., at Oak Creek Game Reserve feeding station, Kloochman Rock, Rimrock Lake, and the White Pass Ski Area. On highways 123 and 410 unique locations include Mt. Rainier National Park, the Grove of the Patriarches, the CCC-constructed trail bridge and overlook at Chinook Pass, the Mather Memorial parkway corridor, and Edgar Rock. A geological road log is available for this loop written by Newell Campbell and distributed by the Washington State Department of Natural Resources (information circular #54). Developed viewpoints include the Clear Creek Overlook and the Palisades Overlook, both just outside of the White Pass study area. Both sites offer outstanding views, the former to the east towards Clear Lake, the Palisades north to Mt. Rainier and down to (looking over) an interesting geologic formation in a lava flow.

Many bicyclists use the White Pass highway each season on cross-state tours.

#### HUNTING

The area is open to hunting for deer, elk and grouse. Hunting pressure is currently light.



### SKI AREA SUMMER OPERATIONS

White Pass Company intends to continue a summer operation which has spanned more than three decades, an operation encouraged by the Forest Service. The past and present summer chair lift operation has made the summit of Pigtail Peak accessible to sightseers and hikers, including some who would be unable to reach it due to their physical condition. Future summer operation, as proposed by the company, would still only use Lift 1 or 2.

Besides the Chair Lift 1 or 2 rides, the summer operation includes services near the highway. The Krackerbarrel General Store and Service Station is open every day and, besides providing gas, minor car repair and groceries, is a registered drop site for PCT hikers. The Village Inn Condominiums and the Ski View Restaurant are also open to the public every day. The Day Lodge is not open daily to the general public during the off-season, but may be open and/or reserved for special events, such as meetings, camps, and reunions. For instance, the Clear Lake Running Club uses lodging, food service, meeting rooms, nordic trail system and chair lift for two-weeks in the summer. The Company plans to actively promote use of the facilities in the off-season, May–October. Mountain bike races and trail runs are established events that White Pass hosts on the nordic trail system. By providing legal mountain bike use the trail system helps alleviate pressure to control mountain biking in the adjacent Wilderness during the summer, plus it provides groomed track nordic skiing in winter. Thus the trail system is used year-round.

### UNIQUE SETTING OF HOGBACK BASIN

Many people consider Hogback Basin important and unique. Its setting is examined for both winter and summer in three parts: physical, social and managerial.

#### WINTER

Hogback Basin's high elevation contains excellent snow conditions for all types of skiing. When it is icy or rainy at White Pass Highway, there are usually good snow conditions at the 5,800- to 6,700-foot elevations. The north exposure of the Basin, along with its high elevation, further assures that good snow conditions are common. Snow comes earlier and stays longer. Because of its location on the Cascade Crest, it gets a good snow pack, and frequent coatings of good snow rejuvenate the skiing surface. The slopes are diverse, interesting and relatively avalanche-free.

The winter physical setting is a predominantly unmodified natural landscape of moderate size and unique visual diversity. The full 360-degree scene holds dramatic views of Mount Rainier, Mount Adams, and Hogback Ridge and the Goat Rocks Wilderness. Hogback Ridge and Basin are a high alpine setting with rich diversity in open, natural meadows, glades, angular openings, and snow-covered trees. It seems to be a natural extension of the Goat Rocks Wilderness and this makes it feel larger than it really is. With its open and gentle terrain Hogback Basin contrasts distinctly with the surrounding forested areas. It possesses a special combination of topography and accessibility. [See cover and Figures III-22 and 23.]

Conditions may be harsh, with visibility limited at times due to snow and fog, which makes travel difficult. Snows are relatively deep and remain well into the spring. When the

snow is “crusty” with ice, skiing is a challenge, but in spring there is usually plenty of sunshine.

The Basin currently can be used by alpine and nordic skiers and by snowshoers, but back-country skiing (day touring and telemarking) is the main activity. It can be used for a one day “tour-out.” From the social setting standpoint, it offers an opportunity to get away from crowds and though there may be evidence of other users (e.g., tracks), interactions with them may be low, and the possibility of experiencing untracked snow in a mountain environment is there. From the managerial perspective, users have relatively little feeling of controls and restrictions.

Winter campers and skiers, in general, have the chance to feel totally alone and away from others while having reasonably safe access to the lodge and transportation. This is similar to European ski areas which offer groomed runs and backcountry skiing accessible from common lifts. Families enjoy this relatively easy access to the area’s semi-primitive setting, and that access, using the present ski lifts, makes the Basin more usable than if the Ski Area were not there.

Hogback Basin’s winter setting offers a high probability of experiencing isolation from the sights and sounds of others, independence, closeness to nature, tranquility, and self-reliance on one’s own winter survival and nordic skiing skills, all in a high-elevation setting with a panoramic view of mountain peaks and Wilderness. And though this semi-primitive experience is somewhat moderated by access from chair lifts, this accessibility is part of the area’s uniqueness. There are no adjacent substitute areas for backcountry skiing that have the same mix of characteristics as Hogback Basin.

FIGURE III-22, WINTER IN HOGBACK BASIN



## SUMMER

The opportunity to get away from the sights and sounds of humans may be even greater during the summer. The setting is similar to winter. The meadows are full of a lush variety of low-growing vegetation contrasted against groupings of sub-alpine fir. Distant clear cuts are not as dominant as when filled with snow during the winter. However, while magnificent and beautiful, the summer setting is not considered “unique,” as it is matched in other nearby alpine locations.

**FIGURE III-23, SUMMER IN HOGBACK BASIN**



## **TRANSPORTATION**

### **HIGHWAY**

U.S. Highway 12 provides access to White Pass. This is a two-lane, paved highway operated and maintained by the Washington State Department of Transportation (WDOT). It splits the Ski Area, with condominiums on the north side of the highway and the downhill Ski Area facilities on the south side. Its traveling surface is 24 feet wide, with paved shoulders 38 feet wide on each side. These shoulders are used for parking (also see Parking section, below).

WDOT traffic counters near Naches and Packwood indicate peak hourly traffic flows occur during the summer months. [See Figure III-24.] In 1988 the summer peak near Naches was 542 on August 21 and the winter peak was 489 on January 24. Likewise, the summer peak near Packwood was 513 on September 3 with the winter peak 364 on January 1.

A WDOT summary of highway accidents within two miles of White Pass during the last nine years, 1980 through 1988, lists 101 accidents. The accident rate for this stretch of highway is double the state average for this class of road. Within a half mile on either side of the pass (milepoints 150.5 to 151.5 – the Yakima-Lewis County line is at milepoint 151.0), during the same period, there were 42 accidents, 35 of which were during the ski season, November to April. Of these, six were injury accidents, with 13 people injured. There were no fatalities and no pedestrian-involved accidents reported. Most of the accidents near the Ski Area involved parked vehicles and vehicles entering and leaving the highway. The speed limit through the Ski Area is 35 mph.

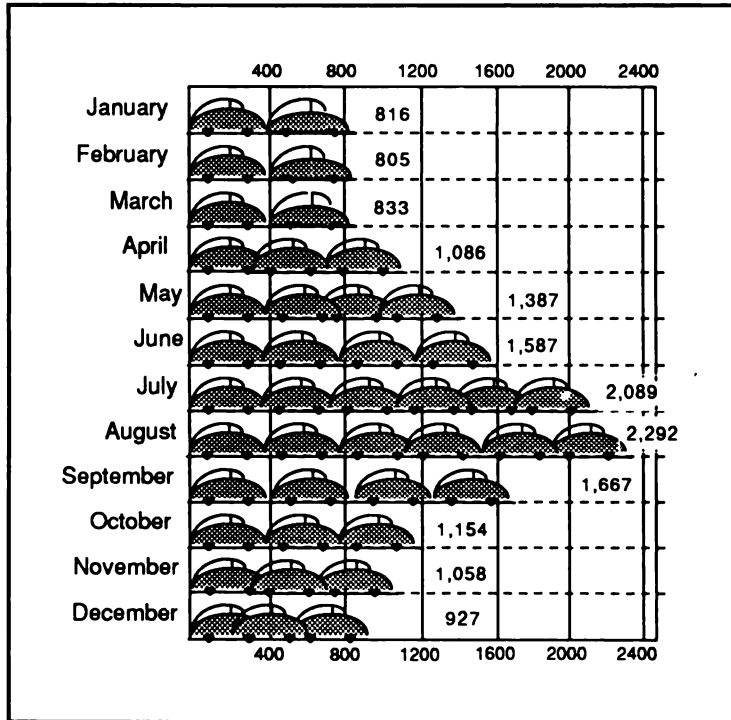
Bus parking causes poor visibility and thus safety problems, as drivers of smaller vehicles can't safely see around the buses before entering the flow of traffic on the highway. This uncontrolled situation is a major concern of the WDOT.

There are four chain-up areas on the west side of the pass summit and three on the east side. WDOT maintenance personnel report that the chain-up areas have, at times, been used to capacity.

### **ON-SITE ROAD SYSTEM**

Within the Permit Area two work roads exist: one, #688, to the east and south, circling to the top of Pigtail Peak, the other to the west to the bottom of Chair Lift 4. See Figure III-21 for locations. Both of these are single-lane and unsurfaced and are essentially 4-wheel-drive roads. They are closed to public travel.

FIGURE III-24, AVERAGE DAILY TRAFFIC, U.S. 12, WHITE PASS SECTION



(Source: WDOT)



## **TRAIL SYSTEM**

### **PACIFIC CREST NATIONAL SCENIC TRAIL (PCT)**

The Pacific Crest Trail, established as a National Scenic Trail by the National Trails System Act of 1968 (PL-90-543), passes through the study area. It enters the area from the William O. Douglas Wilderness to the north, passes around the east end of Leech Lake and crosses the highway to the east of White Pass. It then climbs through dense timber on a series of switchbacks and crosses into the Goat Rocks Wilderness northwest of Hell lake. From there it follows the main ridge and leaves the Wilderness in several places. It re-enters the Wilderness where it crosses the saddle near Hogback Mountain and travels south towards Shoe Lake.

The Comprehensive Management Plan for the Pacific Crest National Scenic Trail was approved by the Chief of the Forest Service January 18, 1982. This plan was prepared by the USDA Forest Service Pacific Northwest Region. The Secretary of Agriculture has assigned planning responsibility for the trail to the Forest Service, which serves as the lead managing agency. Actions affecting the PCT are overseen by the PCT Advisory Committee, established by the National Trails Act.

### **PCT CHARACTERISTICS**

On May 16, 1980, the following characteristics of the trail were adopted by the PCT Advisory Council.

The Pacific Crest National Scenic Trail...

- ...is a continuous recreation facility extending from Canada to Mexico and consists of the trunk trail, designated connecting and side trails, trailheads, campsites, signing, interpretive devices, and related public use facilities.
- ...is located, designed, constructed, and maintained to a standard commensurate with its national significance, while reflecting the type and volume of traffic planned; limited by the standards established for special legislated areas (national parks, national monuments, wilderness, state parks) through which it passes.
- ...is a linear interpretive facility that: displays throughout its length a changing landscape reflecting a diversity of land and resource management objectives from preservation (national parks and wilderness) to industrial, agricultural, and urban development; and affords opportunities to reflect on the history of the development and growth of the Nation and its people by identifying and interpreting nationally significant cultural and historic sites.
- ...across segments of private land, is primarily a travel route to provide continuity of the trail and safe and enjoyable passage for the traveler.

...provides for a diversity of appropriate outdoor recreation opportunities limited principally by the carrying capacity of the area and the Congressional restriction on motorized use.

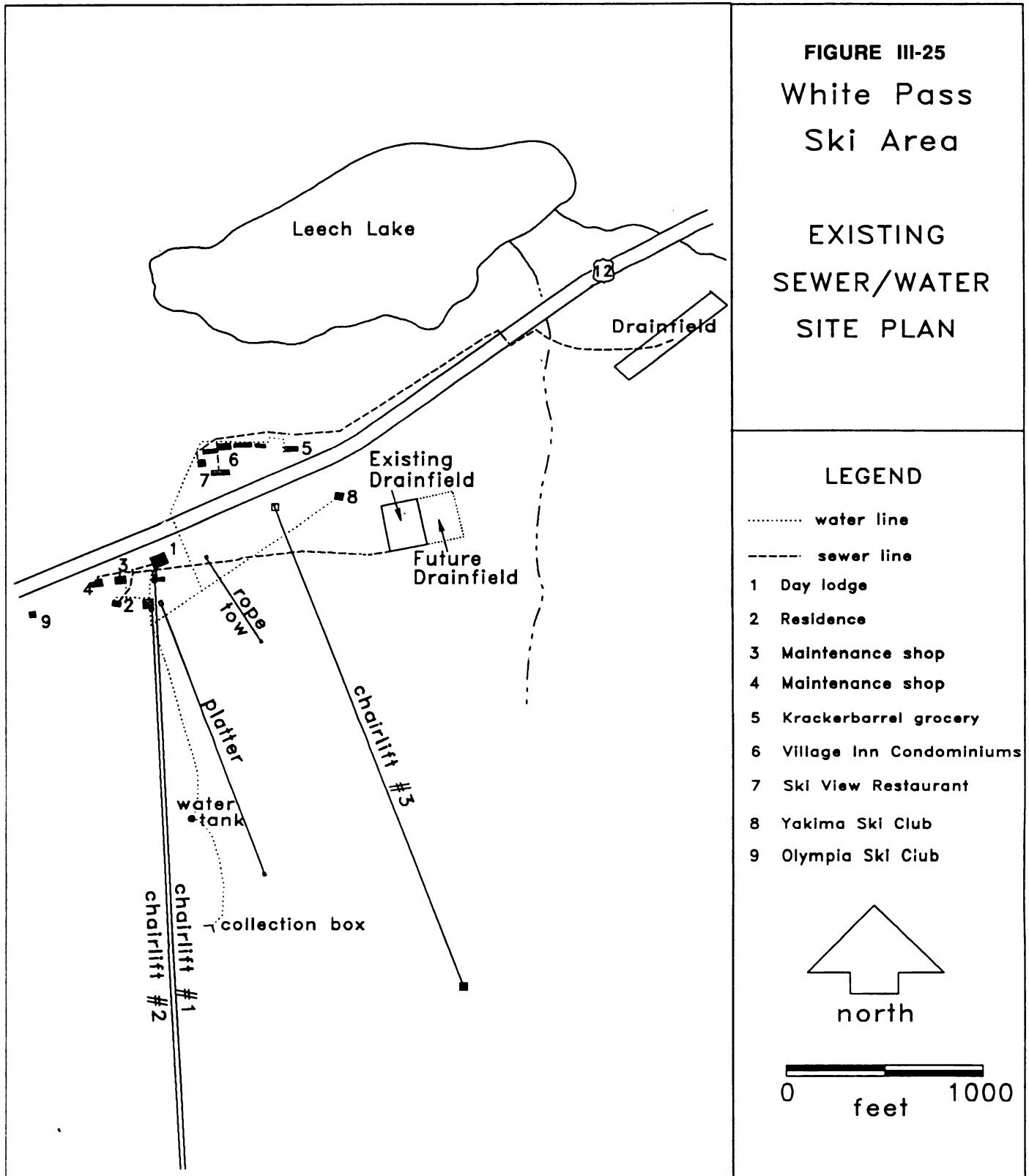
Also, contained in the Comprehensive Plan is a section titled "Effects on the management of Adjacent Public Land." An excerpt states:

The trail will cross a mosaic of areas differing in primary management emphasis. This could be grazing, key wildlife habitat, special interest such as scenic or geologic, developed recreation, unroaded recreation, research natural, or intensive timber management. Viewing and understanding this array of resources and management is one of the primary recreation opportunities to be made available over those portions of the trail. Some activities such as road construction, logging, prescribed burning, herbicide application, mining, etc., will require considerable informational and interpretive skills to be placed in a positive perspective from the standpoint of the user. The agencies should look at this as an opportunity to explain the multiple-use concept.

It is anticipated that even though some resource activities may occur immediately adjacent to or across the trail, the agencies will protect the integrity of the trail proper by modifying management practices as needed.

#### **OTHER TRAILS**

The other trails in the study area are discussed in the "Summer Recreation" section. [See also Figure III-21, Existing Transportation System, and Table III-8, Trails, page 368.]



## **PUBLIC AND SUPPORT SERVICES**

### **WATER SYSTEM**

The water system for the White Pass Ski Area is a Class 3 system reviewed by the Lewis County Health District. Water is taken from a spring (which is also the source for the easternmost South Fork of Millridge Creek) at cliff line about 300 feet east of Chair Lifts 1 and 2. [See Figure III-25.] It is piped underground from there to a 50,000-gallon water tank located on the slopes above the lodge. Water flow is estimated at 400 gallons per minute (gpm) (USFS estimate from 1965). No treatment of the water is required prior to use.

### **WASTEWATER DISPOSAL**

Wastewater disposal at the White Pass Ski Area consists of several independent systems under the jurisdiction of the Yakima County Health District. The day lodge is served by a 15,850-gallon septic tank for the men's restroom and the kitchen, an 8,150-gallon septic tank for the women's restroom (no splitter box is used), and 16,000 square-feet of drain field trench bottom area (30 laterals, 180 feet long and 3 feet wide). The Olympia Ski Club, the residence, and the shop building each have a separate septic tank, but use the same drain field as the day lodge. The Yakima Valley Ski Club has a separate septic tank and drain field. The condominiums, restaurant and service station/grocery in White Pass Village use a common 12,900-gallon septic tank, with effluent piped across Highway 12 to a drain field near the eastern boundary of the Permit Area. [See Figure III-25.]

The size and capacity of wastewater systems needed at ski areas is difficult to determine due to the extreme fluctuations in usage. It is important, however, to have a system that is able to handle peak flows so there is no failure or overflow.

### **DAY LODGE**

The present wastewater system for the Day Lodge appears to be adequate for current peak flows using the following evaluation:

#### **Daily Flow Rate Method:**

Size of System = 24,000 gallon septic tank  
 Required detention time = 1.5 days  
 Therefore: maximum daily flow = 16,000 gallons

Use per person = 6.3 gallons (from '83/'84 flow study)  
 Then: Capacity = 2540 people per day

For the peak use period (Christmas season, 12/26/88-1/1/89)  
 Ave. visits (including non-skiers) = 2081 people/day  
 Peak day = 2,485 people (compare to cap. of 2,540 people)

The present day lodge system has a design flow rate of 16,500 gallons per day (Davis/Scheible Engineering Report 7/6/84). From the above analysis, it appears that the present septic tank is adequate to handle the maximum 24-hour and the current peak uses.

#### OTHER BUILDINGS

The wastewater disposal system for the Village Inn Condominiums is a 12,900-gallon septic tank and a 10,800-square-foot drain field. At a detention time of 1.5 days (as required by State of Washington DSHS Standard), the maximum flow rate capacity is estimated to be 8,600 gpd. The septic tank, built in 1965 (to the standards of that year), is about 150 feet behind the Krackerbarrel Grocery/service station. The drain field is south, across Highway 12 between the inlet stream to Leech Lake and the outlet stream from Leech Lk. (Clear Creek). It also serves the Krackerbarrel and the Ski View Restaurant, but the restaurant has a 150-gallon grease trap as well.

The condominiums average 80 percent occupancy during winter weekends. There are 55 rooms, with kitchens, that can accommodate between two and eight people each. Using an average occupancy of four people per room, total occupancy is 220. The EPA design manual shows typical water usage for motels to be 52.8 gallons per person per day total wastewater flow. 220 people, each using 52.8 gallons a day, equals 11,600 gallons per day total wastewater flow. On a busy winter weekend day, the restaurant serves as many as 350 meals – breakfast, lunch and dinner. For restaurant wastewater systems, the EPA manual recommends a design based on a typical flow of 2.6 gpd/meal. 350 meals at 2.6 gpd/meal is 910 gpd. In terms of volume, wastewater produced by the Krackerbarrel is considered insignificant for this analysis. The total wastewater produced by the condominiums and the restaurant on a peak use winter weekend is estimated to be 12,510 gpd. With a maximum flow rate of 8,600 gpd, it appears that the septic tank is operating at 145 percent of capacity by current standards on peak winter use days.

At an estimated peak flow rate of 12,510 gpd and 0.75 gpd per square foot of drain field, the drain field should have a minimum of 16,680 square feet. It is operating at 154% capacity by current standards on peak winter use days. (This situation will be corrected with the upgrading of the sewer system.)

#### **ELECTRICITY**

The Benton Rural Electric Association supplies electricity to the White Pass Ski Area. The transmission lines to the vicinity of the Ski Area are underground. Lines in the Ski Area itself are above ground. Existing chair lifts are powered by electric motors and are backed up with diesel generators. To handle an increased load from additional chair lifts and user facilities, existing lines would need to be upgraded.

## **BASE AREA AND SUPPORT FACILITIES**

### **DESCRIPTION**

The Day Lodge has recently been expanded and now is about 20,000 square feet. This includes approximately 6000 square feet of restaurant seating, 4400 on the second floor and 1600 on the mezzanine level. The Ski View Restaurant, across the highway from the Day Lodge, has an additional 850 square feet of restaurant and bar seating.

Other base area facilities include the Yakima Valley and Olympia Ski Clubs buildings (3000 square feet each), the Krackerbarrel service station and grocery store (2,200 sq. ft.), and the Village Inn Condominiums. Service facilities include a single family residence for the Mountain Manager, a shop building, a garage, and lift terminal structures.

### **SPACE REQUIREMENTS**

Ski industry standards suggest that day use restaurant seating be 20% of the SAOT (skiers at one time) design capacity, with three square feet per seat (Uniplan Associates, 1981: *Social and Economic Effects of the Proposed Ski Development at Early Winters Ski Area*; and, Farwell, Ted, 1979: *A Manual for Preparing Break Even Analyses*). This would indicate a present need for 500 seats and 1,500 square feet of restaurant space for the 2,500 SAOT comfortable capacity at White Pass.

To figure the space required to serve "skier needs for food, beverages, warmth, toilets, safety equipment, repair, instruction, and social interactions," Uniplan and Farwell (ibid.) suggest multiplying the Ski Area design capacity by 7.14 square feet. With 2,500 SAOT capacity at White Pass, this would mean a need for 17,850 square feet for all these services. Total base area facilities would then need 19,350 square feet. The present base area facilities, summarized below, are ample for the current comfortable capacity.

Day lodge.....	20,000	sq. ft.
Ski View Restaurant .....	850	
Yakima Ski Club .....	3,000	
Olympia Ski Club .....	3,000	
<u>Krackerbarrel .....</u>	<u>2,200</u>	
TOTAL .....	29,050	sq. ft.

### **PARKING**

Parking currently covers approximately 9 acres. About 600 vehicles can park along Highway 12 and about 600 vehicles can park off-highway in parking lots adjacent to the condominiums. At three skiers per vehicle and parking capacity at 1,200 vehicles, approximately 3,600 skiers can be served.

Parking areas are shared with users of the nordic facilities. On peak use days, such as during the Christmas holiday season, parking space is adequate to handle the demand, although skiers may have to walk farther to reach facilities. (Because everyone seems to want to park as close to the Ski Area as possible, parking sometimes appears inadequate.) During high-use periods and weekends, White Pass Company directs skiers where to park, at other times there is no control of traffic.

The company plows the off-highway parking lots. The WDOT plows the on-highway parking.

## **TRANSPORTATION-RELATED FACILITIES**

Minor mechanical repair facilities are available at the service station in White Pass Village. Vehicles requiring towing and wrecker service are taken to Trout Lodge on the east side and Packwood on the west side. There are no secure storage areas for towed and/or impounded vehicles at White Pass, but this has not created problems in the past.

## **OVERNIGHT LODGING**

On-site lodging is available at the Village Inn Condominiums, where 47 rooms are reserved for overnight use by skiers. There are 55 units plus an office and Manager's quarters. Of the 55 units, two are owned by White Pass Company and are used for their employees and/or guests, two are used for employees of the Village Inn, and four are reserved exclusively for the owners. Weekend occupancy during the winter is 80 percent, weekday occupancy about 19%. Use by owners is about 19% of occupancy and public use about 80% of occupancy. (These figures were submitted in response to a USFS request in 1985 and are felt to represent the years 1980–1985.)

Other commercial lodging is available at Packwood, 25 miles to the west, where 87 rooms are available. Twenty miles east in the Rimrock Lake/Trout Lodge area 34 rooms are available. And the Yakima metropolitan area 50 miles east counts 1600 rooms for overnight use.

It is currently estimated that 25–35% of the skiers stay overnight in either the Packwood and Randle areas or on the the east side down to Yakima (65–75% of skiers are day skiers).

## **PUBLIC SAFETY**

Police protection in the White Pass area is provided by the Washington State Patrol and by the Yakima and Lewis Counties Sheriffs' Departments.

Fire protection for the general forest area is provided by the Forest Service. White Pass Company has the following equipment and capabilities to suppress building fires:

- Pumper unit
- Sprinkler system in Day Lodge
- Hydrants and hoses around base area.

- 50,000 gallon water storage tank sized for fire protection.

## **HAZARDS**

Three terrain-related public safety situations exist in the proposed expansion area.

### **"Grand Couloir"**

This is a steep, unskiable, rocky chute between proposed Chair Lift 6 and Knuppenburg Lake. To prevent skiers from inadvertently entering this area, White Pass Company proposes installation of a "catch road," a permanent fence and "Ski Area Boundary" signs.

### **Slopes East of Hogback Basin**

These are east of the proposed Chair Lift 5. Skiers could glide into this area, lose their way and get into trouble in the steep, rugged terrain of Hell and Miriam Creeks. White Pass Company proposes posting the new boundary with "Ski Area Boundary" signs and providing maps at the main lodge or warming hut.

### **Avalanche Hazard.**

This situation is described earlier in this chapter. White Pass Company plans to control avalanches within the Permit Area as in the past. Signing can also be used to manage the danger. Avalanche hazards in the Goat Rocks Wilderness (Miriam Basin, Shoe Lake Basin) can be moderate to high. The Company proposes to sign the permit boundary but considers the Forest Service and the counties to have responsibility for managing access to the Wilderness.

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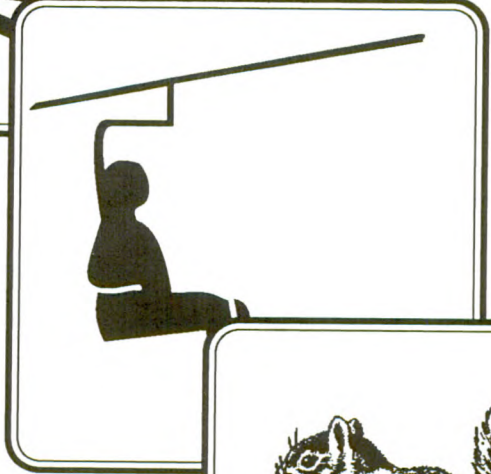
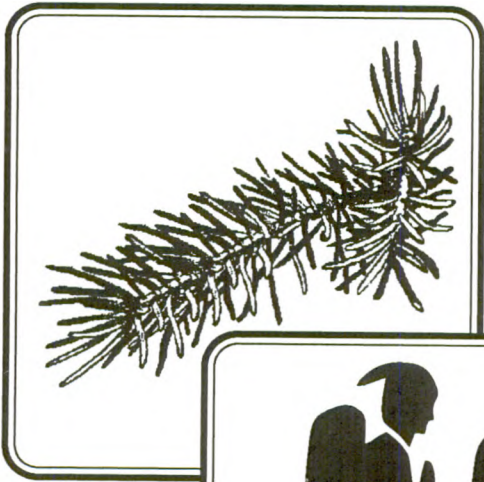




# CHAPTER IV

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## ENVIRONMENTAL CONSEQUENCES



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## CHAPTER IV

# ENVIRONMENTAL CONSEQUENCES

This chapter discusses the direct, indirect and cumulative environmental consequences of implementing the alternatives described in Chapter II and is the basis for comparing them. It includes adverse environmental effects which cannot be avoided, the relationship between short-term uses of the environment and long-term productivity, and any irreversible or irretrievable commitments of resources.

### CHANGES MADE BETWEEN THE DRAFT AND FINAL

Most of the changes to Chapter IV were minor. Mitigation was moved to Chapter II. Added to the Final EIS are air quality impacts and water use by alternative sections. The consequences of implementing Alternative 3 have been modified to include the addition of nordic development in Hogback Basin.

### INTRODUCTION

#### EFFECTS DEFINED

An effect is described as any change in social, economic, physical or biological factors which results from direct or indirect effects of an action. It may be adverse or beneficial. The following definitions are used:

**Short-Term Effect:** One which occurs during construction and/or for one or two years thereafter. It may also occur after brief activity associated with operation and maintenance.

**Long-Term Effect:** One which continues for an extended period of years. It may be permanent.

**Direct Effect:** One which occurs as the direct result of development activity, including construction, operation and maintenance.

**Indirect Effect:** One which develops as the result of a direct effect but which would not have occurred otherwise. This type tends to be gradual and is generally off-site and secondary.

The environmental consequences described in this chapter are grouped under the same headings used in Chapter III, "Affected Environment." As applicable, each section includes discussion of on-site and off-site effects. For analysis purposes, 1990 is assumed to be the starting date for construction of facilities, if approved. It is recognized that any construction would be phased in over a number of years; however, this would cause no significant changes in the environmental effects as presented and may even be beneficial.

## **MANAGEMENT**

The Forests' Management Directions, as published in the *Wenatchee National Forest Land and Resource Management Plan* and the *Proposed Gifford Pinchot National Forest Land and Resource Management Plan*, and the mitigation requirements listed in Chapter II, "Alternatives," are assumed to be implemented, for the purposes of this analysis. These measures are intended to eliminate or reduce negative impacts and to implement positive ones. The extent to which the mitigation measures should be used must be determined for each project.

The study area is defined in the Introduction to Chapter III, "Affected Environment." [See Study Area map, Figure III-3.]

ID Team members contributing to the analysis in this chapter, as well as to the rest of the document, relied on field work, literature reviews, published research findings, consultation with other experts and specialists, and their own training and experience. Some specific references are cited within the text. Related sources not specified or cited in the text are included in the analysis file.

## **PHYSICAL AND BIOLOGICAL RESOURCES**

### **AIR QUALITY**

Short-term air quality effects resulting from construction would include increased vehicle and equipment emissions and increased amounts of suspended particles from grading and other site preparation activities. With appropriate dust control measures, such as sprinkling with water, the short-term air quality impacts would not be significant.

In the long-term, air quality impacts within the Permit Area would be caused mainly by increased vehicle emissions (more skiers means more vehicles, which means more emissions). Outside the Permit Area they would be the result of both vehicle and wood stove emissions.

### **REGIONAL**

On a regional basis, the development would not lead to a significant increase in traffic volumes (and resulting vehicle emissions) in either the Puget Sound or Yakima Valley airsheds. The traffic to White Pass is an extremely small percentage of the total traffic in each area.

**CLASS I AREA**

The Clean Air Act (PL88-206) as amended requires that existing air quality for Class I areas be protected. The only Class I area in the vicinity of White Pass is that part of the Goat Rocks Wilderness originally designated Wilderness in 1964. Project-related pollutants would originate within the Permit Area and along the Highway 12 corridor, but with the prevailing east and west airflows and the resulting exchange and dispersion, these pollutants are not expected to impact the Wilderness.

The remainder of the study area, including the William O. Douglas Wilderness, is Class II area. (Wilderness created by the 1984 Washington Wilderness Act is Class II air quality area.)

**CARBON MONOXIDE (CO)**

Alternative 7, the maximum development alternative, would have the greatest effect on air quality in the vicinity of the White Pass Ski Area. This alternative would approximately double the use at the Ski Area by the year 2000, assuming that total development would be complete by then. Using assumptions similar to those under the existing reasonably foreseeable scenario [Chapter III, pages 309–313] with the exception that the number of vehicles leaving the area at the end of the day would be doubled, the carbon monoxide concentrations as modeled by SCREEN at the four Pacific Crest Trail sites are less than the results obtained under the modeled existing conditions (1990). However, the one-hour CO standards would still be exceeded in the parking area and in the area within about 100 meters of the center of the parking lot. More efficient engines would result in a future overall reduction in CO emissions. All other alternatives would result in lower CO concentrations than Alternative 7. The estimated one-hour concentrations for the year 2000 at the four PCT sites are:

	Alt. 1 (No Action)	Alt. 7 (Full Development)
PCT at Goat Rocks Wilderness boundary.....	2600 µg/m <sup>3</sup> .....	4134 µg/m <sup>3</sup>
PCT at Miriam Basin* .....	655 µg/m <sup>3</sup> .....	1588 µg/m <sup>3</sup>
PCT at W.O. Douglas Wilderness boundary .....	2785 µg/m <sup>3</sup> .....	4407 µg/m <sup>3</sup>
Shoe Lake Basin* .....	655 µg/m <sup>3</sup> .....	1131 µg/m <sup>3</sup>

(\* Class I airshed)

All are well below the ambient one-hour CO standard of 40,000 µg/m<sup>3</sup>.

**PARTICULATE MATTER (PM)**

No additional wood burning devices are planned with the proposed Ski Area expansion, so expansion would cause no increase in PM emissions from them. As mentioned under “Air Quality” in Chapter III, the trend in the condominium complex in recent years has been to remove fireplaces.

## **GEOLOGY**

No alternative would adversely effect the geology of the study area. Typically, the greatest potential for an adverse effect from development activities is related to construction of roads. None of the roads required for any alternative would traverse ground known to be particularly sensitive, geologically, to road construction.

One 100-foot segment of the extension catchline road (in Alternatives 3–7) would traverse SRI Mapping Unit 7 identified in the Gifford Pinchot Soil Resources Inventory as having an increased potential for mass movement as a result of man's activities. A study of the road's proposed location (*A Geotechnical Assessment of the White Pass Proposed Expansion*, by James P. Brazil and Richard M. Wooten, November, 1985), found that with proper design, including outsloping of the road, rock stream crossing, etc., the road would not increase the slope's potential for failure.

Existing landslide areas (shown on the Geologic Conditions map, Figure III-5) would not be adversely impacted by any of the proposed alternatives.

## **MINERALS**

### **ALTERNATIVES 1 AND 2**

The existing withdrawal from mineral entry would continue except that additional land would be proposed for withdrawal to protect the cross-country trail system north of U.S. 12.

### **ALTERNATIVE 3**

Hogback Basin, the land east from Knuppenburg Lake to the existing withdrawal, and the cross-country trail system north of U.S. 12 would be proposed to be withdrawn from locatable mineral entry, but not from the mineral leasing laws.

### **ALTERNATIVES 4 AND 5**

Hogback Basin and the cross-country trail system north of U.S. 12 would be proposed for withdrawal from locatable mineral entry, but not from the mineral leasing laws.

### **ALTERNATIVES 6 AND 7**

Hogback Basin, the land east from Knuppenburg Lake to the existing withdrawal, and the cross-country trail system north of U.S. 12 would be proposed to be withdrawn from locatable mineral entry, but not from the mineral leasing laws.

## **SOILS**

### **SOIL DISPLACEMENT - (SOIL PARTICLES MOVED FROM THEIR NATURAL LOCATION)**

Acceleration of the natural rate of soil erosion would occur as a result of all alternatives except 1 and 2. Cut and fill slopes from the construction of roads are the biggest contributor to increased erosion. Soil displacement estimates were made based on a logical, systematic process developed by Phillip McColley, Wenatchee National Forest soil

scientist. Mr. McColley thinks the values developed by his model are maximums, i.e., displacement at its worst. The values shown below are based on successful mitigation of impacts that would disturb the soil. Cut and fill slopes are assumed to be immediately seeded and mulched and/or covered in a manner to attenuate the effect of water on bare soil. The soil displacement values for cut and fill slopes assume 80% cover and 20% bare soil after construction and subsequent mitigation. [See Figure IV-1, Soil Displacement and Sedimentation charts.]

**ALTERNATIVES 1 AND 2**

Soil displacement for the existing condition is estimated to be:

Existing roads.....	137.4	tons/year
Existing cleared runs.....	42.5	
Permit area - forest background .....	11.2	
Hogback Basin - background.....	20.4	
<u>Knuppenburg - background.....</u>	<u>15.0</u>	
TOTAL displacement.....	226.5	tons/year

Average soil displacement is 0.12 tons/acre/year (about 240 pounds or 3 cubic feet) based on 1820 acres within existing and proposed areas.

**ALTERNATIVE 3**

Additional soil loss from construction of Chair Lift 7 and its associated runs is estimated to be:

Existing clearing and background .....	226.5	tons/year
Warming hut road.....	4.5	
<u>Chair Lift 7 and runs.....</u>	<u>9.7</u>	
TOTAL.....	240.7	tons/year

Average soil displacement is 0.13 tons/acre/year. This alternative represents a 4% increase over existing soil displacement levels.

**ALTERNATIVE 4**

Additional soil loss from construction of Chair Lift 5, a road to the proposed warming hut, and a catchline road to the bottom of chair 5 is estimated to be:

Existing clearing and background .....	226.5	tons/year
Chair Lift 5 and runs .....	1.7	
Warming hut road.....	4.5	
<u>Catchline road extension.....</u>	<u>23.8</u>	
TOTAL.....	256.5	tons/year

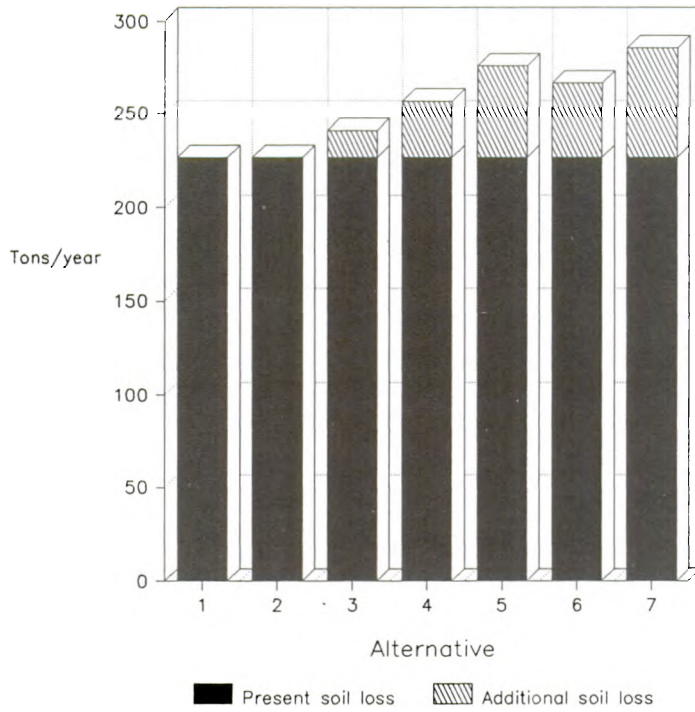
Average soil displacement is 0.14 tons/acre/year. This alternative represents an increase in soil displacement of 13% over the existing condition.



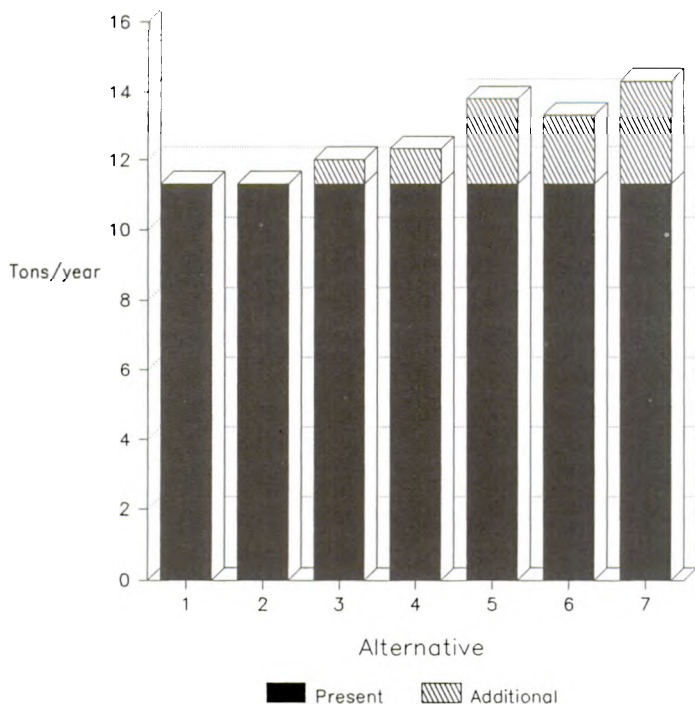
**FIGURE IV-1, EFFECTS ON SOIL**

White Pass Ski Area

**a.**



**b.**



**ALTERNATIVE 5**

Additional soil loss from construction of 2 chair lifts in Hogback Basin, an extension of the catchline road, and a road to the proposed warming hut is estimated to be:

Existing clearing and background .....	226.5	tons/year
Chair Lift 5 and 6 and runs .....	2.8	
Warming hut road.....	4.5	
<u>Catchline road extension.....</u>	<u>41.5</u>	
TOTAL.....	275.3	tons/year

Average soil displacement is 0.15 tons/acre/year. This alternative represents an increase in soil displacement of 22% over existing condition.

**ALTERNATIVE 6**

Additional soil loss from adding Chair Lift 5 in Hogback Basin and Chair Lift 7, extending the catchline road, and constructing a road to the proposed warming hut is estimated to be:

Existing clearing and background .....	226.5	tons/year
Chair Lift 5 and runs .....	1.7	
Chair Lift 7 and runs .....	9.7	
Warming hut road.....	4.5	
<u>Catchline road extension.....</u>	<u>23.8</u>	
TOTAL.....	266.2	tons/year

Average soil displacement is 0.15 tons/acre/year. This alternative represents an increase in soil displacement of 18% over existing condition.

**ALTERNATIVE 7**

Additional soil loss from adding Chair Lifts 5 and 6 in Hogback Basin, adding Chair Lift 7, extending the catchline road, and constructing a road to the proposed warming hut is estimated as follows:

Existing clearing and background .....	226.5	tons/year
Chair Lift 5 and 6 and runs .....	2.8	
Chair Lift 7 and runs .....	9.7	
Warming hut road.....	4.5	
<u>Catchline road extension.....</u>	<u>41.5</u>	
TOTAL.....	285.0	tons/year

Average soil displacement is 0.16 tons/acre/year. This alternative represents an increase in soil displacement of 26% over existing conditions.

**DELIVERED SEDIMENT**

Delivered sediment is the soil that reaches local streams. Research by the Intermountain Research Station in Boise, Idaho, suggests that delivered sediment associated with timber harvest activities is generally less than 10 percent of the soil eroded (5-10% in roaded

watersheds and 2-6% in unroaded watersheds). Assuming 5% of the displaced soil reaches the streams in the area, delivered sediment estimates by alternatives are:

Alternatives 1 and 2 .....	11.3 tons/year	Alternative 5.....	13.8 tons/year
Alternative 3.....	12.0	Alternative 6.....	13.3
Alternative 4.....	12.8	Alternative 7.....	14.3

## **WATER**

### **QUALITY**

The alternatives would not adversely effect the long-term water quality of the study area. Some short-term impacts could occur during construction of the roads, lift lines, towers and ski runs. There is also the potential with all development alternatives for fuel spills during construction.

### **SURFACE RUNOFF**

Created openings for roads and ski runs would allow more snow to accumulate in them and, theoretically, because of greater accumulation, surface runoff would increase. This could result in increased erosion and soil displacement. These effects are summarized in the preceding section.

Cumulative effects to the watersheds would be very minor. There might be a small incremental effect on the Cowlitz drainage, but an insignificant one compared to the logging, agricultural and development impacts downstream. The same would be true of the Tieton River drainage.

### **FLOOD PLAINS AND WETLANDS**

There would be no adverse effects on flood plains or wetlands. There are no floodplains and no activities are proposed in wetlands or in areas that will effect them.

## **WILDLIFE AND FISH**

An important concept in wildlife management is critical, or limiting, needs, which influence species viability. All wildlife have them. For example, for deer and elk the area available during the winter and its quality are more limiting than their summer range needs. Calving or nesting seasons are other examples of critical needs.

At the same time, certain habitats are more vulnerable to management activities than others, and habitat effectiveness can be reduced or eliminated. On the other hand, some management activities improve certain kinds of habitat and mitigating measures can be prescribed to reduce negative impacts.

**MOUNTAIN GOATS**

The mountain goats in the White Pass area can be separated into two groups by their behavior: native goats and those that have been transplanted. Behavior varies considerably between them and is a function of disturbances, such as hunting. The transplanted goats came from protected areas and the native goats have been subjected to hunting pressure. In time, populations can adapt to increasing disturbances by humans, if these disturbances are kept down and the goats' needs, such as hiding and escape cover and resting or mineral lick areas, are provided for.

Introduction of additional foot traffic/hiking trails should be negligible for Alternative 1 as hiking and off-trail travel already occur in the area with no known adverse effect.

There may be a long-term effect to mountain goat summer habitat with Alternatives 2–7. This would occur through the introduction of hiking trails to the Hogback Basin area, which would in turn increase the number of people passing through. Any expansion would increase overall use of the Ski Area, and even more people would be expected year-round, with or without additional trails.

**DEER AND ELK**

The main impact to deer and elk would be from the introduction and use of this area by more people. The level of effect would vary by alternative. Alternative 7, which calls for full development, would result in a bigger name for White Pass and would increase summer use in general. Alternatives 2–7 would involve construction of trails in Hogback Basin, allowing easier access to that locality. Deer and elk would acclimate to increased numbers of people if there is a no-firearms-shooting restriction implemented, and more animals could be viewed. If hunting with firearms continues, deer and elk will avoid the increase in people and a reduction in their use of the area might occur.

Alternatives 3, 6 and 7, which involve the construction of Chair Lift 7, would remove forested areas, but would create additional foraging areas for deer and elk. These areas would be maintained as ski runs, creating a beneficial long-term impact by increasing forest edge and foraging value.

An additional effect for any development alternative would be short-term, involving the actual construction of facilities, including construction noise and traffic. The disturbances would likely effect the area for entire summer seasons.

**DEER AND ELK WINTER RANGE - (LEWIS COUNTY)**

One indirect impact of Ski Area expansion and the resultant increase in use would involve overall winter range conditions in eastern Lewis County. Winter range could be diminished by development of summer homes, businesses and services that cater to the increased visitor needs. This impact would be greatest in the area around Packwood.

Increased development of recreational lots is now occurring in the area and has already impacted the winter range. Expansion of the Ski Area would add to this pressure. However, much of the winter range in the east end of the county is under Forest Service management rather than private ownership, which tends to lessen some of the overall impacts to winter range.

Tacoma City Light is considering the acquisition of lands in the Packwood/Skate Creek area to mitigate impacts on winter range lost through construction of the Mossyrock and Mayfield dams on the Cowlitz River. This would help maintain winter range in the eastern end of the county. Their acquisition plans could be affected by increased land value which is partially, but not entirely, due to the Ski Area expansion proposal.

### FISHERIES

Construction of Chair Lift 7 and resultant ski runs would increase the potential for additional sedimentation into Knuppenburg Lake. Of particular concern are the base of Chair Lift 7 and the small turnaround area. In 1987 the Department of Wildlife reviewed the project on-site and determined there would be minimal impact on the lake fishery, based on the following assumptions: the chair base would be one-quarter mile from the lake; the chair would be located out of the flood plain; a buffer zone of trees would be left standing between the lift base and the lake; and, there would be minimum development of parking.

Most of the proposed development is in the Millridge Creek drainage. There would be little impact to Leech Lake except for impacts that could result from additional demands on the sewage system. (This is discussed in the Physical Impact section.)

Increased fishing pressure during the summer months would likely occur with additional summer visitors associated with the Ski Area expansion.

### THREATENED, ENDANGERED, AND SENSITIVE ANIMAL SPECIES

#### BALD EAGLES

Bald Eagles have never been sighted in the project area, and habitat for this species has not been identified in the project area.

The increase in human activity and the reduction of 100 acres of old growth habitat will have not effect on potential nesting or on recovery of this species.

#### PEREGRINE FALCONS

Short term effects (if these raptors are present) would include the construction activity that would likely make portions of the area unattractive for foraging. Long-term impacts would be the presence of additional humans, which would occur to some extent with or without a trail system, resulting in disruption or elimination of these feeding areas.

This project is not expected to affect any potential nest sites or the potential recovery of this species.

#### GRAY WOLF

As a result of increased interactions between people and wolves (if they exist in this area), the population of wolves in the vicinity could decrease and stay at a low level. This project alone will have little effect, but the accumulation of projects could affect the viability of the species locally.

#### NORTHERN SPOTTED OWL

This project maintains spotted owl habitat to meet the Supplement. Further consultation with the Fish and Wildlife Service is planned. Project implementation will comply with the Endangered Species Act (PL 93-205). It will reduce approximately 100 acres of habitat within 2.5 miles of three pairs of spotted owls. The reduction in habitat will not be in a single block but will be lineal in clearings for ski runs. This will fragment their habitat. The fragmented habitat will increase the habitat for great horned owls, increase the potential for spotted owls to become prey for them, and reduce the potential for spotted owl dispersion. This reduction of dispersion will likely not affect dispersion of owls between the Gifford Pinchot and the Wenatchee National Forests.

If at some future point owls were to move into the area, only alternatives 3, 6 and 7 involving construction of Chair Lift 7 and the resulting cut in mature timber for the runs might impact their use of that forested habitat. Even then, much of the habitat would remain and could be used for foraging. Ski run clearings would be from 100 to 150 feet wide. These widths can be crossed by foraging or migrating owls. Their foraging need is not limiting in the White Pass situation, given the amount of old-growth habitat in the adjacent Goat Rocks Wilderness, particularly in the Clear Fork of the Cowlitz River drainage, an undisturbed, low-elevation habitat. In addition, suitable habitat for movement of birds exists on the north side of Highway 12.

The project will increase year-round use by people in and around the spotted owl habitat. This may disturb foraging and roosting owls and reduce opportunities for the public to view owls.

The activities associated with removing spotted owl habitat will not affect the nesting pairs because the nest sites are more than one mile away.

Harvesting of future timber sale and other project activity near White Pass will have a cumulative effect on owls and their habitat. Those effects will be analyzed in the NEPA documents prepared for those projects.

#### LARCH MOUNTAIN SALAMANDER

The greatest impact to potential habitat would occur with the catchline road that provides access to Chair Lifts 5 and 6. Additional impacts to the potential habitat could be the removal of mature timber adjacent to talus slopes that fit the salamander's preferred habitat.

#### CALIFORNIA WOLVERINE

Increased human activities will decrease the potential for wolverines in the area. This project alone will have little effect, but the accumulation of projects could affect the viability of the species locally.

#### NORTH AMERICAN LYNX

As access in winter and summer is improved, the number of people in this area will increase. Opportunities for disturbing, trapping or shooting lynx are likely to occur. Lynx will use the project area less.

## CONCLUSION

Potential and occasional use of the area by these species is most likely to occur in the late summer or early fall and would primarily involve foraging or travelling activities. The presence of additional people in the summer might make this utilization less frequent. However, these proposed, threatened, endangered, and sensitive species appear not to be significantly affected by the proposed development.

The phased-in nature of the proposal would tend to lessen disruption from construction activities, giving species time to acclimate themselves, rather than face major changes all at one time.

## GENERAL WILDLIFE CONCERNS

The presence of structures such as lift towers and support buildings is not a major wildlife concern. In fact, the towers could provide some "high tech" habitat in the form of perches for birds and raptors.

The cutting of timber for Chair Lift 7 and runs near Knuppenburg Lake would add an element of diversity to the vegetative composition, thus increasing habitat diversity. This, in combination with the increased "edge effect," would have a positive overall impact on habitat, as the ski runs would be kept between 100 to 150 feet in width with some narrow necks not over 90 to 100 feet wide.

There would be slight reduction in mature forest habitat with the construction of Chair Lift 7. This would result in the displacement of small mammals, cavity nesters, etc.

The project proposal has no direct effect on winter habitat needs for the wildlife species discussed. Deer and elk winter range would be affected indirectly by development pressure in eastern Lewis County, though it is not considered significant. Minor impacts could occur on summer habitat for all species because of the introduction of a hiking trail and additional people. However, these impacts are thought to be not significant.

There is little relative change in effects by alternatives, except those involving the construction and development of Chair Lift 7, which results in minor displacement to species dependent on mature forest settings and freedom from human predation. Development of Chair 7 would have beneficial impacts to deer and elk populations exploiting the grass/forbs vegetative stage.

## VEGETATION

Implementing the various alternatives would impact the three identified plant communities:

### Heavily Timbered Slopes of Old-Growth Trees

Alternatives 3, 6 and 7, which include construction of Chair Lift 7, would have the greatest impact. After cutting the ski runs the potential of windthrow to the timber edges would be real. The runs would need to be kept at right angles to the saddle in the pass, and the openings kept as narrow as possible. Opening these runs would spill a great quantity of cold air from the upper Basin down the treeless slopes. The result would be an increase in the plants that compete

better in a cold environment, such as beargrass and Cascade huckleberry. The dwarf bramble, rusty menziesia and Alaska huckleberry would most likely be eliminated from these openings.

#### Subalpine Setting (Hogback Basin)

The consequences of implementing an alternative for development in Hogback Basin (Alternatives 3–7) have mainly to do with the acreage of snow groomed and the significance of ground disturbance. Snow grooming would hold snow longer in the spring, thus shortening the growing season for the low-lying vegetation. Cascade huckleberry, red mountain-heath, smooth woodrush, and sedge would begin to successfully dominate the open glades. Big huckleberry would slowly lose its competitive edge. Ground disturbance would create an environment where revegetation would be slow due to the fragility of this area's ecosystem. Sedge would be the first to respond in revegetated disturbed places.

#### Alpine Setting (Hogback Ridge)

This is a setting of low shrubs and forbs where impacts would be similar to those in the subalpine setting but would be even more long-term. Revegetation would be extremely slow and difficult.

#### THREATENED, ENDANGERED AND SENSITIVE PLANT SPECIES

Based on the biological evaluation for sensitive species completed by Dr. William Barker, there are no threatened, endangered, or sensitive plant species in the project area to be altered by any expansion of the Ski Area. Consequently, none of the alternatives will result in any effects to any known sensitive plant species.

#### TIMBER

Only alternatives 3, 6 and 7, which include construction of Chair Lift 7, involve removal of significant quantities of commercial timber. Lift line, ski runs and access roads would require removal of about 100 acres of old-growth timber. At 35 thousand board feet per acre this would be 3.5 million board feet of material. Much of this is on steep hillsides and soil disturbance would cause adverse impacts (see Soils section, above).

Lesser amounts of timber would be removed for expansion of the parking lots, with full development (Alternative 7) eventually resulting in removal of 300 mbf. Scattered and isolated trees would be removed with development in Hogback Basin (Alternatives 3–7). These trees are not considered to have commercial value.



## **SOCIAL AND ECONOMIC**

The proposed expansion of the White Pass Ski Area would result in social and economic impacts to the east end of Lewis County, particularly to the community of Packwood, on which this section will primarily focus.

### **IMPACTS AND TRENDS**

Any impacts would be directly related to the numbers of skiers attracted to the area and the extent of expansion. The level of impact would be partially determined by additional access that might be developed to meet some of the additional demand created by day skiers. At the same time, better access would make a one-day ski trip feasible for a greater number of skiers.

There would be a definite increase in demand for overnight accommodations, particularly during week-ends and holiday periods. (White Pass is planning to cater to the "mini-vacation" market, which should increase weekend and overnight use if successful.) It is anticipated this demand would be satisfied by the construction of new and/or the expansion of existing, lodging facilities in the Packwood/Randle areas, as well as along Highway 12 and in the Naches area. The weekday occupancy rate of the condominiums would also increase.

Effects would vary by the expansion alternative selected and the percentage of demand that is created in either day or overnight ski use. In addition, expansion in any alternative would be phased in over time, spreading out and possibly lessening, the impacts.

These variables, combined with ongoing changes in the present economic situation, make the time frame and magnitude of impacts difficult to determine but the level of change would be greatest with Alternative 7. It calls for the most development. The change would be least with the "No Action" alternative, Alternative 1.

A positive impact to the area would involve increasing demand for service-related businesses in the winter. This should smooth out the current cyclic nature of this demand which historically has been greatest in the summer. Such a stabilizing effect would attract more businesses and investors into the area.

To a certain extent, expansion of the service industry would have a ripple effect. It would create more demand for services and thus more jobs, which more residents would move in to fill and these people would in turn demand more services.

In this way the local economy would continue to shift away from timber-related industry.

### **PROPERTY VALUES**

The effect on property values is an impact to be considered. Overall, values would probably increase, but any increases would be highest in the tract areas closest to White Pass and for riverfront, view and commercial property.

This change will have both beneficial and adverse impacts on the traditional population and its members' lifestyles. On the positive side, land would be more valuable if owners sold or otherwise used their equity. On the negative side, people could be displaced because of rising

land values and increased taxes. This segment of the population may get shifted down the valley to areas where property values aren't as high and the lifestyle remains passive.

With expansion of the Ski Area, the hubbub of activity typical of the summer would continue to a certain extent into the winter. This includes additional vehicles, pedestrian traffic, littering, sanitation needs, and an influx of people with different backgrounds and expectations. These effects may be considered negative by some yet positive by others.

In essence, the pace of activity would be maintained year-round rather than being relatively cyclic and peaking during the summer.

Citizens of Packwood have already expressed concern regarding the amount of traffic during certain times of the year. Commercial activity is centered along U.S. 12. It is the main route through town and has only two lanes. At some point this highway situation may have to change, which could involve establishing four lanes or left turn lanes, or possibly re-routing through traffic.

Requirements for public services such as law enforcement, emergency services, and water use and sanitation, would also increase. Some costs associated with this would be offset by direct and indirect revenues to the local community generated from additional local spending and rising property values.

The balance between anticipated public sector revenues and costs is difficult to determine. It is also difficult to define what impacts would be attributable to Ski Area expansion, especially considering the existing situation of growth. In addition, impacts would vary by alternative and would be affected by marketing strategies used by the Ski Area and the skiing industry.

Another variable adding to the complexity of social and economic impact analysis is that revenue and cost comparisons are subject to government policy, which has a certain flexibility. Local government units can take a number of actions to assure that development of public services pay their way. These include transient room taxes, local sales taxes and development assessments (additional charges for water, sewer and road improvements).

## **SUMMARY**

Change toward a service-industry-oriented community is already occurring in Packwood. This has resulted in rising land values and changes in overall lifestyle.

Implementation of an action alternative would contribute to these changes. Some residents would view this as positive, some as negative. Overall, the community seems to favor (or is indifferent to) such change as no formal opposition has arisen. A petition circulated by an ardent skier was signed by 535 pro-development citizens.

Increasing winter service activities would contribute to economic stability by eliminating the relatively cyclic economic situation and creating a balanced business climate.

The level of impact would vary by alternative. This along with all the other variables makes the magnitude of impact difficult at best to measure. Phasing in Ski Area expansion would spread most impacts out over time. Tools are available for local governments to foresee these

changes, and to avoid or mitigate negative impacts such as the costs of additional public services.

Expansion of the Ski Area would make the area more marketable during all seasons. This would even out summer and winter demands on services. If summer demand continues its current growth alone, the service industry might grow anyway to meet this need, and incidentally be able to meet an increased winter need. In either case, the cumulative effect could be a full-season community, with a changed lifestyle, dependent on the service industry.

The above conclusions are also applicable to the Rimrock-Trout Lodge community and to a lesser degree to Naches. Slight impacts are anticipated for Yakima, but these would be negligible considering its size and diversity.

**ECONOMIC EFFECTS ON COMMUNITIES**

Economic effects on communities were analyzed using the 1982 IMPLAN Model, incorporating data for Yakima and Lewis counties. The following expenditures were developed from estimates originally developed for the Early Winters Ski Area proposal, and adapted for White Pass using information gathered from the local Ski Area operation and area motel/hotel operators.

**TABLE IV-1, AVERAGE SKIER EXPENDITURE**

<u>IMPLAN Sector</u>	<u>Sector Name</u>	<u>1982 Dollars</u>
502	Amusement and Recreation.....	\$ 11.50 (Alpine)
		.....5.00 (Nordic)
471	Hotels and Lodging Places.....	11.05
491	Eating and Drinking Places.....	5.51
—	Groceries and Food .....	2.97
493	Auto Repair and Service.....	1.57
462	Rec. Related Retail Trade .....	0.65
460	Rec. Related Wholesale Trade.....	0.53
506	Medical and Health Services.....	0.34
448	Motor Freight Transport.....	0.23
454	Communications.....	0.20
521	<u>State and Local Gov't.....</u>	<u>0.13</u>
	TOTALS .....	\$ 35.90 (Alpine)
		.....\$ 29.40 (Nordic)

Using these expenditures per skier, the IMPLAN model was used to project additional employment and personal income that would occur when an alternative would be fully implemented, represented by the annual numbers of the skiers in the year 2000. The present 35% of destination (overnight) skiers was projected to increase to 45% with full development (Alternative 7).

TABLE IV-2, ECONOMIC EFFECTS IN YEAR 2000, YAKIMA AND LEWIS COUNTIES

Alternative	Change in Employment from Baseline Alternative (Number of Jobs)	Change in Personal Income from Baseline Alternative (Millions 1988 Dollars)
1 (baseline).....	—	—
2.....	25	300
3.....	72	851
4.....	86	1.016
5.....	160	1.886
6.....	155	1.827
7.....	228	2.701

### BREAK-EVEN ANALYSIS

Break-even analysis for the White Pass Ski Area is demonstrated in the accompanying charts for each winter alternative. It is based on some of the evaluation criteria in *A Manual for Preparing Break-Even Analyses*, Ted Farwell & Associates, Inc.

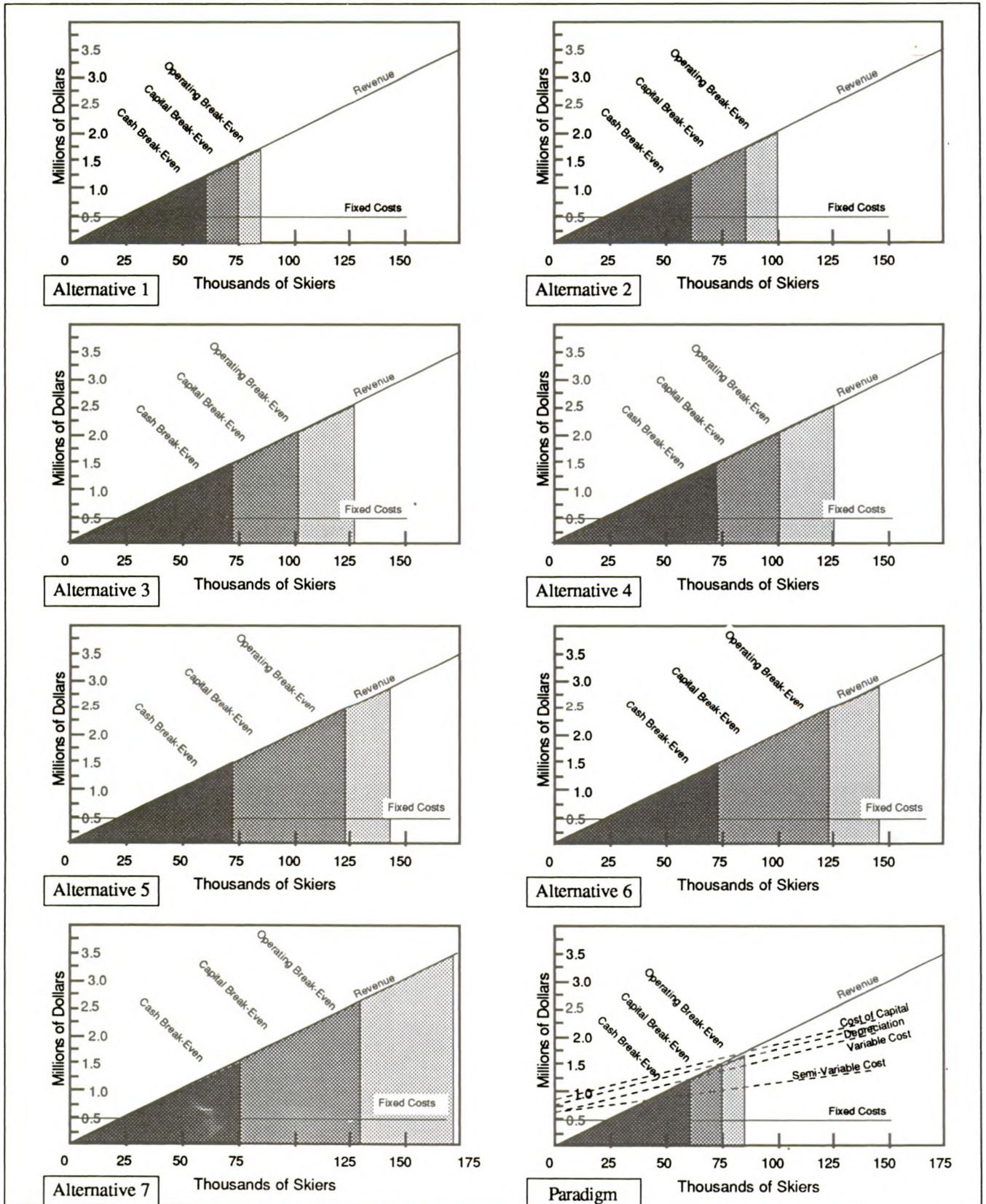
The current financial operation of the White Pass Company, Inc. was used as base data in all alternatives. Drastic changes in the financial operating policies of the White Pass Company are not foreseen due to the proposed expansion. The revenue per skier visit remains the same for all alternatives.

Each alternative develops many economic parameters: fixed expenses – costs that are committed regardless of sales; Semi-variable Expenses – costs that vary with both length and volume of ski season; Variable Expenses – costs which are tied directly to revenue; Depreciation—a non-cash operating expense; and, Cost of Capital – such as interest, taxes and capital payback.

A break-even chart, Figure IV-2, (next page) illustrates three break-even points for each alternative:

- (A) Cash Operating Break-Even – the volume required to meet annual cash operating expenses. Principal payback and interest are not operating expenses
- (B) Operating Break-Even – the volume required to meet annual operating expenses. It includes depreciation, but not interest.
- (C) Economic Break-Even – the volume required to meet all operating and capital expenses, including the cost of capital.

FIGURE IV-2, FINANCIAL BREAK-EVEN POINTS



## **OTHER RESOURCES**

### **VISUAL**

The existing Ski Area and proposed expansion alternatives are located within an area of land identified as Management Area Category RE-1, Developed Recreation, in the *Gifford Pinchot Proposed Land and Resource Management Plan*. The Visual Quality Objective (VQO) associated with the Management Area Category is Retention. This objective applies generally to all developed recreation sites on the Forest, from picnic sites to interpretive sites to campgrounds. Although it is applied to such developments as ski areas at this time, neither this Retention objective nor the basic Visual Resource Management system is designed to address major developments or significant structures, both of which are characteristic of ski area development.

With ski areas, the ski runs, lift lines and associated facilities should be designed and located so as to minimize the impact on visual elements such as form, line, texture and color. The element of size or scale, and the presence of various structures, are usually the factors that make it impossible to meet standards for Retention, whether as viewed from foreground or background.

In the case of smaller projects, the objective may be to modify the project so as to minimize its visibility and maintain the visual attractiveness of the surrounding environment. The project area remains subordinate to the visual character of the area surrounding it.

Ski areas may dominate the visual character of the land in some places. However, part of the attractiveness of a ski area is the variety or diversity of the terrain and vegetation. Therefore, every effort is made to integrate the development of runs, lift lines, materials, color schemes, etc., into a total visual package. With good planning and execution this can result in an attractive ski area in an attractive environment. But it will seldom appear completely "natural" and it will seldom meet the Retention objective. The Partial Retention objective can frequently be met through the correct location of facilities, natural colors and attention to natural shapes and arrangements.

### **VISUAL CONSEQUENCES**

[Refer to "Visual Resources," Chapter III, and see visual resource maps, Figures III-11 (EVC), III-13 (VAC) & III-14 (VQO).]

#### **ALTERNATIVE 1**

The existing visual condition of the Ski Area would still change somewhat over time due to the growth of existing vegetation as well as the decline of other vegetation. Generally, its visual quality will soften and improve.

#### **ALTERNATIVE 2**

Some minor modification of the visual character of the existing area would take place due to the improvement activities planned with this alternative. This modification would be temporary, caused by vegetation and soil disturbance during the removal or relocation of existing facilities in Areas 2, 3 and 4 ( see EVC map, Ch.III). The exceptions to this would

be the effects of the additional ski run west of Chair Lift 4 and the construction of Chair Lift 8. That run would visually affect that portion of Area 4 in the existing Ski Area but it would not be visible from Highway 12 but could be seen from certain viewpoints in the William O. Douglas Wilderness. This impact would be very subtle as the proposed run would blend with the existing runs served by Chair 4.

Chair Lift 8 would be constructed in parts of Areas 2 and 3. These areas are visible from the highway, the base area and the vicinity of Leech lake. Portions of this lift would also be visible through the vegetative screen along the Pacific Crest Trail.

#### ALTERNATIVES 3, 6 AND 7

Chair Lift 7 and its associated ski runs would be constructed almost entirely in Area 1 with only short sections of the upper end of the lift and runs being in Area 5.

Area 1 has the lowest Visual Absorption Capability (VAC). Although the area is not constantly observed from U.S. 12 due to the timber stand adjacent to the highway, there are several open view areas where the clearings will be visible for a brief period from a moving vehicle.

[Figures IV-4–IV-6 are computer simulated views for these alternatives, and Figure III-12, page 342, is a simulation of an existing view. Figure IV-3 indicates approximate viewpoints for the simulations. Note: these renditions have the foreground vegetation screens removed.]

The landscape would be modified as observed from various viewpoints in the William O. Douglas Wilderness. The portion of the lift and runs that are in Area 5 are not visible from Highway 12 but may be visible from certain viewpoints along the PCT. In most instances the visitor's attention would be focused on viewing Mount Rainier, and, with the use of unobtrusive colors for the towers and the presence of vegetative screening, the lift would blend well with the landscape. The ski run in this area would also blend well as very little vegetation removal would be needed.

The short access road, turnaround and pickup point near the lower terminal of Chair Lift 7 would have to be carved out of the timber adjacent to U.S. 12. This impact could generally be softened by locating these facilities so there is a vegetative screen between them and the highway.

#### ALTERNATIVES 4–7

These Alternatives all deal with the construction of chair lifts, the clearing of ski runs in Hogback Basin and the construction of the mid-mountain warming hut.

The visual modification related to activities taking place in Area 5 (Hogback Basin) are only significant as viewed from sections of the Pacific Crest Trail. There would be very little clearing needed for ski runs in the Basin due to the natural openness that presently exists. The most significant vegetation disturbance would take place with the construction of the extension of the catchline road, the service road from the base of Chair Lift 4 and the mid-mountain warming hut. This construction would be viewed downhill by trail users and, due to the oblique angle of the view and the distance, would be mostly screened by existing foreground vegetation.

FIGURE IV-3, COMPUTER VIEWPOINT LOCATION MAP

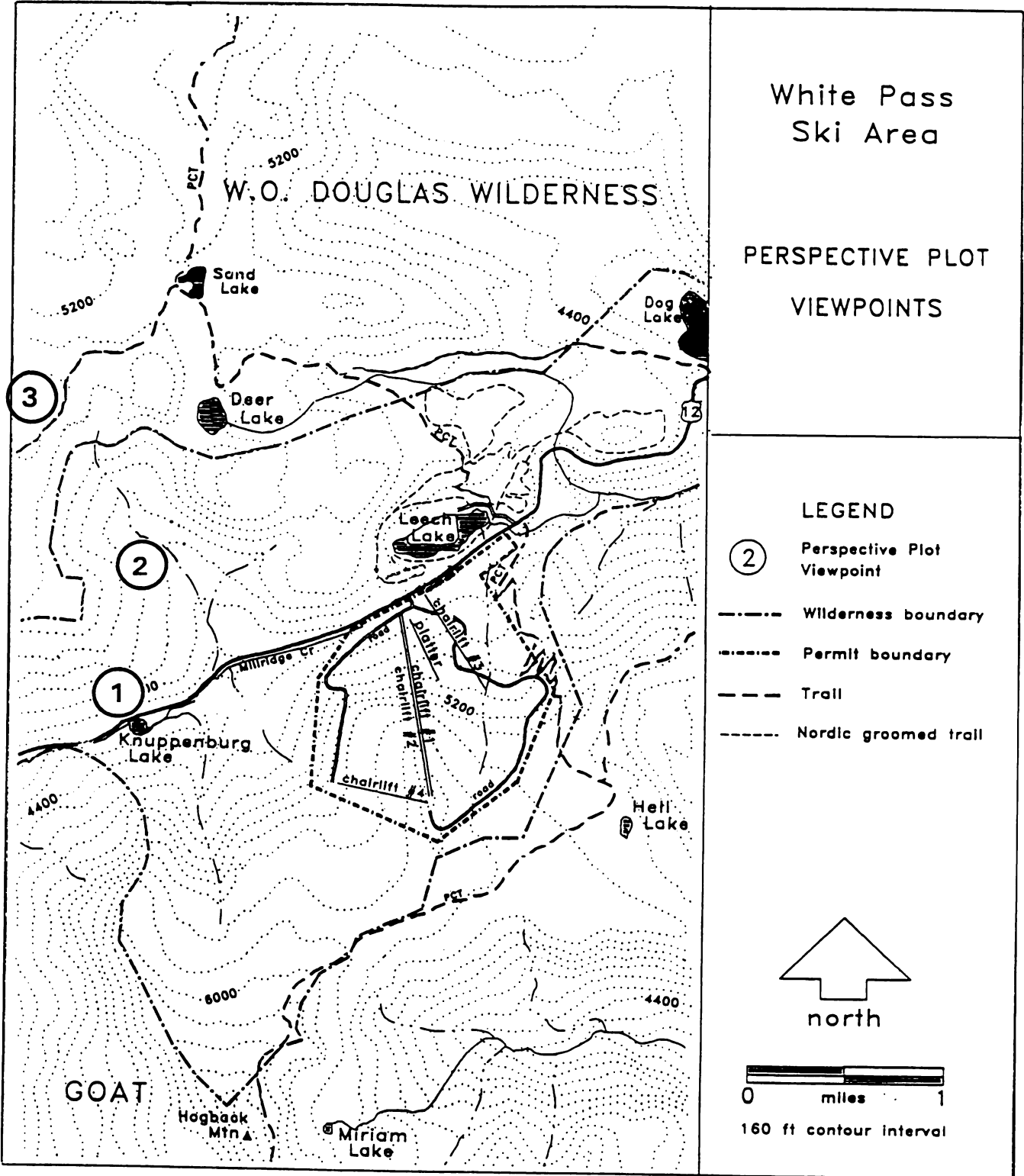




Figure IV-4

White Pass Ski Area

PERSPECTIVE VIEW



Simulated view ① of the White Pass Ski Area.  
Runs associated with Chair Lift 7 from Knuppenburg Lake

Alternatives 3, 6 and 7 only  
Rendition of computer projection by T. Powell

Figure IV-5

White Pass Ski Area

PERSPECTIVE VIEW



Simulated view ② of the White Pass Ski Area.  
Runs associated with Chair Lift 7 from FS road 1284

Alternatives 3, 6 and 7 only

Rendition of computer projection by T. Powell

Figure IV-6

White Pass Ski Area

PERSPECTIVE VIEW



Simulated view ③ of the White Pass Ski Area  
as seen from Cortright Point

Alternatives 3, 6 and 7 only

Rendition of computer projection by T. Powell

The lift towers and cables and the presence of skiers would be the most significant visual impacts within the Basin during the ski season. These impacts could not be avoided.

Due to the distance and the angle as viewed from the William O. Douglas Wilderness, activities in the Hogback Basin would be unobtrusive to the Wilderness visitor.

#### **SUMMER ACTIVITY**

No alternative would change the visual conditions over what they are in winter, except that the visual quality of the entire area would be altered slightly by more people using the area.

#### **WILDERNESS**

Proposed expansion alternatives would affect Wilderness to varying degrees depending on several factors. Actions which affect adjacent Wilderness are those which increase use beyond managed levels, physically impact facilities (e.g., trails, camp spots and picnic locations), result in changes to the natural environment within Wilderness, or decrease the public's opportunity for pristine types of recreation, unique scenery or scientific, historic or educational experiences.

#### **EFFECTS - GENERAL**

Summer lift operations and other activities which increase use would increase Wilderness impacts, both social and physical, while activities which do not increase use or impacts beyond present standards would be acceptable.

Visual changes to Wilderness users can result from activities inside and outside of Wilderness. For example, one can see into the proposed expansion area from the Wilderness boundary between the Chair Lift Trail junction and Hogback Ridge. Activities altering the natural views from Wilderness areas or boundaries would adversely impact the user's opportunities to experience solitude and decrease the opportunity for challenge and inspiration. Activities which do not significantly alter the Wilderness or views from it would have no adverse impact.

The Miriam Basin and the Shoe Lake Basin areas would be most impacted by Alternatives 4 through 7. These areas are in the "Semi-Primitive" Wilderness Recreation Opportunity Spectrum (WROS) zone classification. The standards for this classification are:

- Concentration of users is low but there is often evidence of other users. Standards are controlled with a minimum of on-site controls.
- Moderate opportunity for exploring and experiencing isolation (from the sights and sounds of people);...a natural environment that offers a moderate to high degree of challenge and risk.
- Social standards: Up to 8 encounters [with people] per day. Group size can range up to 12 units (Forest order), with approved exceptions allowed where encounters drop below 6 per day.
- Off-site evidence of controls: Management control necessary to protect the ecological and social elements throughout the Region's Wilderness are evident outside of Wilderness

and at trailheads and boundary portals. Formal regulations, orders, and/or permits may be necessary to achieve management objectives.

The construction of Chair Lifts 7 and 8 and the mid-mountain warming hut would not significantly change the visual character of the Hogback Ridge and Basin area for Wilderness or PCT visitors. Construction of lifts 5 and 6 would alter the feeling of solitude for summer and winter users entering or leaving the Wilderness along Hogback Ridge. Because of the views from it, that portion of the Crest Trail is an integral part of the Wilderness user's experience in this area.

Dominant views into the proposed expansion area are not offered from the William O. Douglas Wilderness. Winter ski touring in this area is significantly less than on Hogback Ridge, except at Cortright Point, a winter nordic destination.

Changes in use resulting from adjacent development should be watched using on-going monitoring. If monitoring shows impacts caused by adjacent activities, those activities would need to be modified by nature or type to ease impacts back to acceptable standards.

Potential Wilderness impacts from permitted activities would be mitigated by permittee signing, with management plans, through interpretation, by instruction to users, and with Forest Service regulations.

The impacts to the Goat Rocks Wilderness in the Hogback Basin area are discussed below by alternative. They would be primarily to PCT users entering or leaving the Wilderness.

## EFFECTS - BY ALTERNATIVE

### ALTERNATIVE 1

Physical effects which exceed present standards at Shoe Lake were first noticed before 1950. By 1972 a camping and campfire closure order in this basin was signed to reduce those impacts. In 1979 and 1986 the Forest Service implemented revegetation projects to further improve the lake shore conditions.

Summer operation of Chair Lift 1 contributes some use to the Pacific Crest Trail, Hogback Ridge and Shoe Lake. This use does not exceed Wilderness Standards.

This alternative would probably result in a slight increase in summer and winter use but should not exceed the normal increase in adjacent, non-chair lift served trails.

### ALTERNATIVE 2

Winter ski touring use of Hogback Basin would probably continue to increase. This would generate proportional increases within Goat Rocks Wilderness. The point at which Wilderness standards are being exceeded would be reached sooner than with Alternative 1. Summer use impacts could result from this alternative.

The hiking and interpretive program has the potential to reduce summer use within Goat Rocks Wilderness. Trails will be planned to draw occasional users away from Wilderness. Tie trails do not encourage PCT use, and signing and other management activities would offer viable alternatives to chair lift riders (e.g., some destination other than Shoe Lake).

**ALTERNATIVE 3**

Winter use in Goat Rocks Wilderness would increase due to the groomed trails in Hogback Basin and the emphasis on nordic skiing. Summer opportunities for solitude would be impacted similarly to Alternative 2. The Wilderness user's views in and adjacent to Wilderness would not be significantly affected.

**ALTERNATIVE 4**

This alternative would increase winter use in Hogback Basin and result in increased Wilderness uses in Miriam Basin, Shoe Lake Basin and areas south. It would affect some adjacent views for summer and winter (ski touring) Wilderness users significantly, decrease the Wilderness user's opportunities for solitude, and alter the feeling of a natural setting. Summer use would be similar to Alternative 2.

**ALTERNATIVE 5**

This alternative has potential to impact Wilderness users entering and leaving Wilderness via Hogback Ridge to a greater extent than Alternative 4. The addition of Chair Lift 6 would further alter the view from within the Wilderness. Summer use would be similar to Alternative 2.

**ALTERNATIVE 6**

The impacts to Wilderness resources by this alternative would be slightly less than with Alternative 5 due to the reduced visual impact of one less lift line in the upper Hogback Basin. Summer use would be similar to Alternative 2.

**ALTERNATIVE 7**

The impacts of activities associated with this alternative would not be significantly different from Alternative 5. Winter uses in and adjacent to Wilderness would be increased and views from within the Wilderness would be impacted as in Alternative 5. The solitude and feelings of remoteness would be decreased. Summer use would be similar to Alternative 2.

**CULTURAL RESOURCES**

Archaeological surveys of the proposed expansion area found no cultural sites. This does not rule out the possibility that some exist, but they are certainly not abundant.

Yakima Indian Nation members have expressed the feeling that the cultural and spiritual values of the area are more than actual sites and any additional use and disturbance concerns them. They are concerned about the general area from Rimrock Lake to White Pass and the Goat Rocks. All forms of recreation are increasing in this area and this trend is expected to continue regardless of the alternative chosen.

The direct effects of implementing the alternatives are summarized below. Philosophically, any additional use or development could have an adverse effect on Indian cultural and/or spiritual values. Significant elements of the Indians' concerns seem to be:

## YAKIMA NATION CONCERNS

### Cultural Sites

Though the presence of some isolated sites of cultural importance to Native Americans is a possibility, no sites have been found. Potential locations are more likely in areas more suitable for the presence of people, that is, where water is abundant, and more flat ground is available. Hogback Basin contains no live streams or springs. Many seeps, springs and free-flowing streams occur further down the mountain well out of the Basin and in nearby Miriam and Shoe Lake Basins. As water is available in these basins, they appear to be more desirable campsites. The more ground disturbed in Hogback Basin, the greater the potential for finding a cultural resource site.

If no sites exist, there would be no effect from implementing any alternative. Alternative 1, with its reduced use levels, could possibly have a positive effect. Alternative 2 would have little effect. The greatest potential adverse effects would be from Alternatives 5 and 7, with their development of Hogback Basin and increased summer activities. Alternatives 3, 4 and 6 would have intermediate effects from partial development of the Basin.

Cultural surveys would take place for all new ground-disturbing activities and on-site cultural monitoring by a professional archaeologist or a Certified Cultural Resource Technician would take place for ground disturbing activities. Yakima Indian Nation archaeologists would be asked to participate. These surveys would help to determine what historic or prehistoric activities took place in the area. Their findings would be made available to the Yakima and Cowlitz Indian Nations and could help substantiate past use of the White Pass area. Depending on the desires of the Indian Nations, these findings could be interpreted at the White Pass Day Lodge or elsewhere.

### Spiritual Sites

The same effects hold here as in the discussion on cultural resource sites. The greatest likelihood for sites is on Hogback Ridge and in the Basin, although no evidence was found.

### Berry Picking

Huckleberry picking is a traditional activity and one of the primary reasons Native Americans would have been in the White Pass area. Fire prevention practices over the last 80 years have encouraged encroachment of tree species and reduced the extent of huckleberry fields. (Although natural fire was a rare occurrence in this area, it is suspected that Native Americans periodically burned the fields, a practice that stopped with fire prevention.) Clearing for ski trails and lift lines can actually reverse this trend.

Alternatives 1 and 2 would allow the current ecological trend to continue for further reduction in huckleberry fields. Alternatives 3, 6 and 7 would result in huckleberries becoming established in the clearings of Chair 7. Alternatives 4–7 would cause a slight increase in berry bushes due to minor clearing in Hogback Basin.

### Root Crops

Indians also came to the mountains to harvest root crops such as camas. These were primarily found at lower elevations. No plants known for their value as root crops exist in the study area. All alternatives have no effect on this element.

### Cedar Products

Use of cedar bark for clothing and baskets was important to the Indians. Large Alaska yellow cedars exist around Leech Lake and Knuppenburg lake. These trees would not be substantially depleted with any alternative. Chair Lift 7 (Alternatives 3, 6 and 7) and increased clearing for parking and drain fields (Alternatives 5, 6 and 7) would remove some cedar and have a potential adverse effect. Other alternatives would have no effect.

### Hunting and Fishing

Hunting and fishing were and are important reasons for coming into this area. This is not an anadromous fishery. Only native fish species were present and these have largely been replaced by planted stock. Hunting opportunities are possible throughout the area. [Specific effects on animal resources are discussed in the "Fish and Wildlife" section.]

## ADDITIONAL CONSULTATION

During the public involvement period members of the White Pass interdisciplinary analysis team met with Yakima Indian Nation officials on four occasions. Two of these meetings were at the Yakima tribal headquarters and two were held at White Pass. Several members of the Cultural Committee were present at three of the meetings, as were the archaeologists hired by the Indian Nation. A trip was made into Hogback Basin by snow machine, and during the open DEIS comment period a trip was made to Pigtail Peak for a closer look at the Basin. A member of the Cowlitz tribe was contacted, but no response was received.

## SUMMARY

The environmental consequences of any of the alternatives on the cultural and spiritual aspects involved in the proposed development area, become a philosophical issue. The cultural surveys conducted by professional archaeologists failed to discover any site-specific evidence of Native American use of the area. These surveys and record searches were reviewed by professional Forest Service Archaeologists and were found to be accurate and thorough. Members of the Cultural Committee of the Yakima Indian Nation indicated their main concern was that any development from Rimrock Reservoir to White Pass would adversely affect the area's cultural and spiritual meaning and its naturalness, and would tend to bring more use to the area. This use would continue to grow with or without additional development and would tend to cause additional impact on the boundaries of the Yakima Indian Nation.

The above analysis indicates that Alternative 7 would have the most effect on the cultural and spiritual aspects of the area while the other alternatives would have less. Any development in the project area would not prohibit Native Americans' traditional uses. The actual on-site disturbance would be very minimal compared to the total area available.



## **LAND USE AND REGULATION**

No special requirements or restriction were noted by either the Yakima or the Lewis County Planning Departments. Appropriate permits would be required for any construction.

Management of the National Forest land will be governed by both the Gifford Pinchot and the Wenatchee Standards and Guidelines. The direction is similar but the Wenatchee Standards apply to the east side and the GP Standards to the west side of the Cascade Crest. Management direction is shown in Figure II-A.

These Standards and Guidelines would be supplemented by the mitigation measures listed in Chapter II, beginning on page 209.

## **RECREATION**

### **EFFECTS ON WINTER RECREATION**

#### **ALTERNATIVE 1 (NO ACTION)**

This alternative maintains the status quo. The opportunities for winter recreation would remain as they are now. No chair lifts would be added, no additional ski terrain would be served by lifts or groomed, and no additions would be made to the existing groomed nordic trail system. There would be no development in Hogback Basin. However, use of the Basin would probably increase over time in response to the publicity the area has been receiving and to the general growth of nordic, especially backcountry, skiing. White Pass Company does not plan to accommodate "tubers" and the area does not generally serve the snowmobile community.

#### **ALTERNATIVE 2**

This alternative would allow realignment of Chair Lift 3 and add Chair Lift 8 along the eastern margin of the existing Permit Area. Approximately 5 kilometers of groomed nordic trails would be added to the present system. Although this alternative adds no terrain to the alpine Ski Area, it would add and enhance recreational opportunities for the beginning downhill skier by improving the quality of existing beginner runs.

#### **ALTERNATIVE 3**

Additional recreational opportunities for the advanced alpine skier would be achieved through this alternative. Advanced downhill terrain would increase from 60 to 100 acres, a 70 percent increase. Intermediate ski terrain would increase from 185 to 213 acres, a 15 percent increase for the intermediate downhill skier. A groomed and ungroomed trail system would be developed in Hogback Basin. Groomed nordic trails north of the highway would be increased by five kilometers.

#### **ALTERNATIVE 4**

Additional recreational opportunities for the beginner and intermediate alpine skier would be a result of this alternative. It increases acreage of beginner and intermediate

downhill terrain by approximately one-third. There would be no increase in terrain for the advanced skier. Groomed nordic trails would be increased to 25 km.

This alternative would place one chair lift in Hogback Basin. This would decrease opportunities in the Basin for some backcountry skiers, especially the day tourer, the non-groomed trail tourer and the non-lift-served telemarker. Three hundred acres of Hogback Basin would remain free of groomed runs. The lift-served telemark skiers would have opportunities enhanced as they would be able to make several more runs in a skiing day. Chair Lift 5 would also provide easier access to adjacent backcountry, especially to Miriam and Shoe Lake Basins, thereby increasing opportunities for backcountry skiers (telemarkers, day tourers and extended tourers).

#### ALTERNATIVE 5

This alternative would nearly double the amount of terrain available for the beginning skier while increasing intermediate ski terrain by two-thirds. There would be no increase in opportunity for the advanced alpine skier.

Two hundred thirty-five acres of Hogback Basin would remain free of groomed runs. Two chair lifts would be built there to make the terrain accessible to the alpine skier. Backcountry skiers would lose much of the recreational setting due to the presence of chair lifts and groomed runs in the Basin. The day tourer and others currently using Hogback Basin would be displaced to other areas to find the terrain and experience they seek, possibly to north of U.S. 12 in the William O. Douglas Wilderness. However, the additional chair lifts would provide easier access to the adjacent Miriam and Shoe Lake Basins for the advanced backcountry skier, especially the extended tourer and the ski mountaineer. Lift-served telemark skiers would also benefit from the lifts in Hogback Basin as they would be able to "yo-yo" the slopes.

Additional people, groomed runs, and lifts in Hogback Basin would also decrease the opportunities there for the snowshoer although, again, they'd also benefit somewhat from the ease of access to the Goat Rocks Wilderness. The groomed nordic trails would remain at 25 kilometers.

#### ALTERNATIVE 6

This alternative would increase winter recreational opportunities for the beginner and intermediate skier by 50 percent, and double available ski terrain for the advanced skier. The impact on the backcountry skier, lift-served telemarker and snowshoer would be as in Alternative 4. Groomed nordic trails would be 20 km.

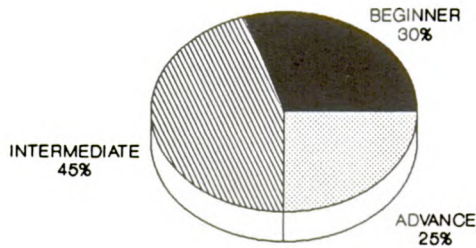
#### ALTERNATIVE 7

This alternative would increase skiable terrain for the beginning skier by 80 percent, for the intermediate skier by 80 percent, and for the advanced skier by 110 percent. Groomed nordic trails would be 25 km. The environmental consequences of this alternative on backcountry skiers, snowshoers and lift-served telemarkers would be as in Alternative 5.

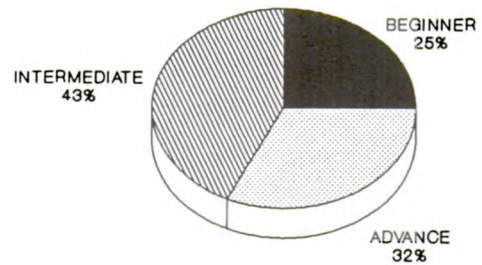
These relationships are summarized in Figures IV-7 and IV-8

**FIGURE IV-7, ALPINE USE OF SKI AREA**

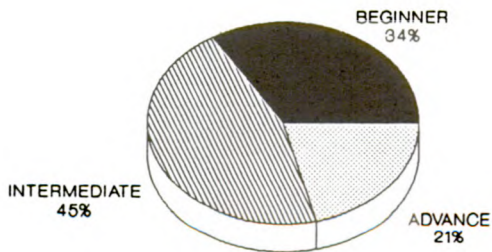
White Pass Ski Area  
ALPINE USAGE



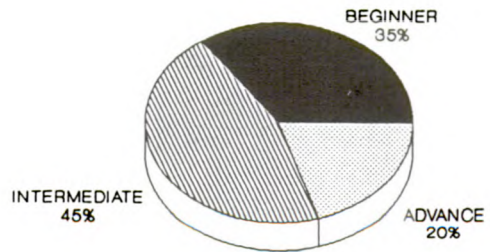
**ALTERNATIVE 1 & 2**



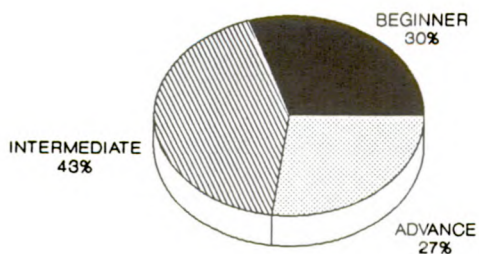
**ALTERNATIVE 3**



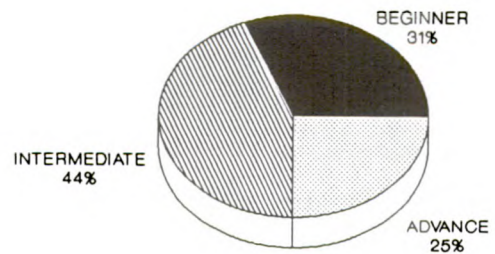
**ALTERNATIVE 4**



**ALTERNATIVE 5**



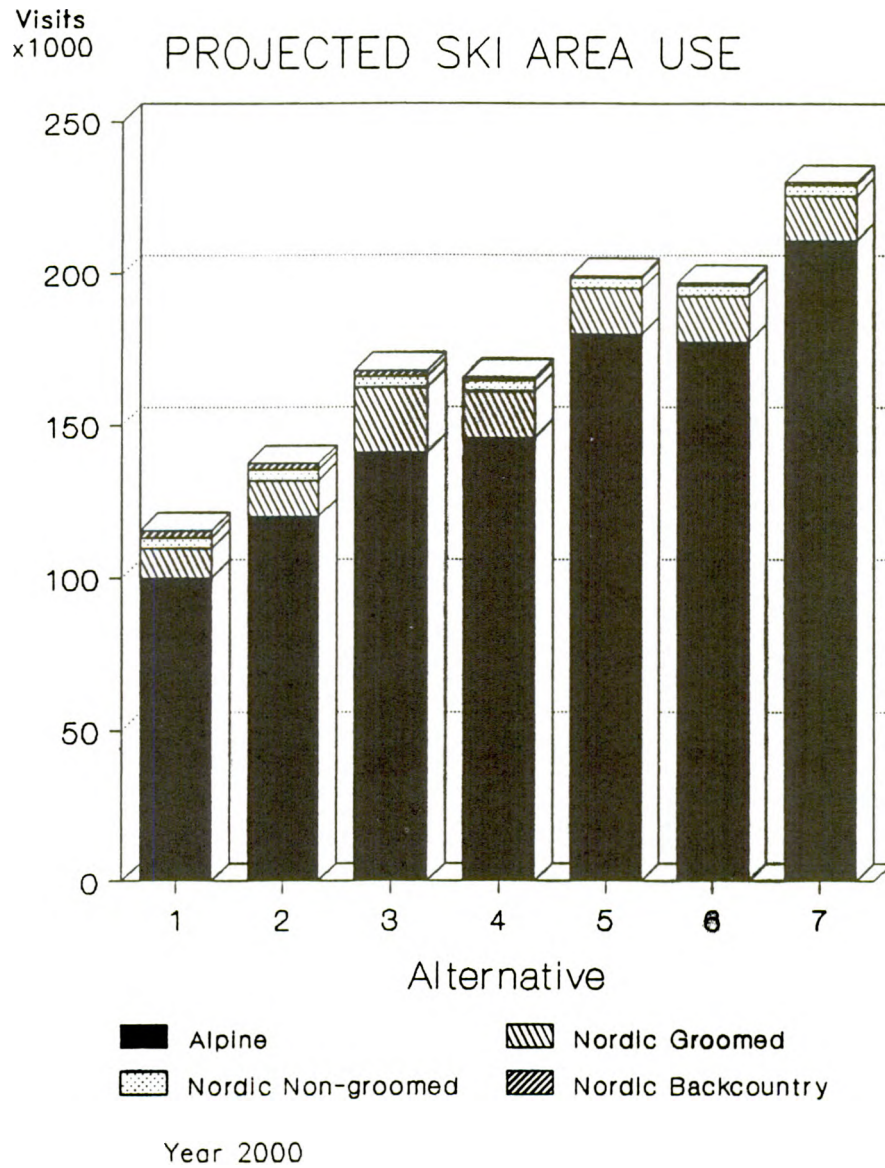
**ALTERNATIVE 6**



**ALTERNATIVE 7**

Skier Mix By Skill Level

FIGURE IV-8



## **EFFECTS ON SUMMER RECREATION**

### **ALTERNATIVE 1**

The current situation would continue with this alternative. The chair lift would take passengers to Pigtail Peak. Present trends in use, including Wilderness use, would continue. No interpretive trail would be constructed in Hogback Basin.

### **ALTERNATIVES 2-7**

These alternatives would enhance summer recreation opportunities outside Wilderness. A loop trail system would be constructed in Hogback Basin to supplement and aid the interpretive program. Use of Chair Lift 1 and Hogback Basin would increase significantly. Chair Lifts 5, 6 and 7 would not be operated in summer.

With active management, Wilderness objectives could also be enhanced. The Hogback Basin trail would offer the day-use hiker an alternate destination outside Wilderness and this should take some of the day-use pressure off Shoe Lake. Wilderness information and protection messages could be provided with handouts, signing and naturalist contacts. The Hogback Basin trail would not be open to horse use during the busy summer season. Depending on the success of these programs, Wilderness use could either decrease or increase.

### **ALL ALTERNATIVES**

No additions in Forest Service Facilities at Leech or Knuppenburg lakes are proposed with any alternative. The White Pass Company summer program at the base area and the nordic trail loops would continue with all alternatives.

## **TRANSPORTATION**

### **HIGHWAY**

The Washington State Department of Transportation (WDOT) is concerned that, with expansion, the already high accident rate would increase because of higher Ski Area use and more through traffic on Highway 12. The current parking situation would become unacceptable in later phases of the project, probably after construction of the first lift and facilities in Hogback Basin. At that point, the WDOT feels that on-highway parking should begin to be phased out. Their concerns are related to the uncontrolled nature of traffic and drivers who have to back onto the highway to enter the flow of traffic. This would worsen as Ski Area use and traffic on Highway 12 increase.

For the Draft EIS the WDOT suggested the following mitigation measures (among others):

1. Left turn channelization.
2. Off-highway parking for the additional skiers.

3. A physical barrier between the travelling public and cars currently parked along the roadway shoulder. (A clear zone of 24–30 feet is needed.)

Since then they have re-considered the situation:

Further study of these mitigation measures indicates that they are probably not feasible. Physical barriers would cause major problems with snow removal. The left turn lane markings would be covered with snow and ice during the winter months and would likely be ineffective. Further study of the issue and discussion between the Forest Service, the WDOT, and White Pass Company has resulted in mitigation measures that could reduce the accident rate and solve the capacity problem.

Eventually the highway might be rerouted to the north around the back side of the condominium complex. The current highway surface and parking area would become the parking area for the Ski Area and through traffic would pass around the Ski Area. Access to the highway would be controlled with a minimum number of access points. Using the old highway for parking would eliminate some of the need to provide additional parking near the Yakima Valley Ski Club and solve traffic problems that concern the WDOT.

Preliminary discussions have taken place, but the potential highway relocation would be covered by a separate analysis. Before a final recommendation is made, on-the-ground reviews and study would be needed.

Meanwhile ski bus use and car pooling from Yakima and Packwood will be encouraged to reduce total traffic.

## **ON-SITE ROADS**

### CONSTRUCTION EFFECTS – ROADS AND PARKING LOTS

Roads to service the mid-mountain warming hut and a catchline road would be needed at the lower (north) end of Hogback Basin if chair lifts are extended into this area. The parking areas adjacent to Highway 12 would be extended as use levels warranted.

The slope of the ground is gentle between the end of the existing road up to Pigtail Peak and the warming hut location, and the existing catchline road. Cutslopes would generally be low, less than 10 feet. The roads would cross some areas of wet soil, but the gentle slopes and shallow soils would preclude mass failure problems. The potential for increased runoff from the road surface and the concentration of the runoff also increases the possibility of erosion during periods when the ground is not covered with snow. Sediment from the eroded surfaces may be deposited in local streams and lakes (see discussion on soils).

Some soil compaction outside the road corridor is likely if construction equipment is allowed outside the corridors. In Hogback Basin, vegetative impacts would also result from even occasional vehicle use on snow-free ground. These impacts could be long-term and effect vegetative production.

Short-term air quality degradation from operation of equipment during construction would occur. This air pollution would be carbon monoxide exhaust from the equipment, and dust. Also, burning to dispose of slash would create smoke.

Noise from construction equipment, bulldozers, chainsaws, etc., would cause a short-term physical impact. People hiking the PCT and users of the Goat Rocks Wilderness would probably hear some of the construction activities.

Fuel spills during the refueling and/or transport of fuel for equipment could potentially occur. Oil spills from the changing of crankcase oil and filters could also occur.

#### **CHAIR LIFT CONSTRUCTION EFFECTS**

Lift installation would require the excavation of soil and rock for lift tower foundations. Soil around the tower site would be disturbed and probably compacted. Some areas of exposed, unprotected, unvegetated soil around the tower sites would be subject to erosion. However, the impact is not felt to be significant. Restrictions on the transportation of workers and equipment is discussed under "Mitigation" in Chapter II.

It is proposed to install lift towers and to string cables using helicopters. Noise from the helicopters would be a potential physical impact for the users of the adjacent Goat Rocks Wilderness.

#### **TRAIL SYSTEM EFFECTS**

##### **PACIFIC CREST TRAIL**

The upper portion of Chair Lift 5 would be in the foreground (within 100 feet) from the Pacific Crest Trail. Chair 6 would be partially visible in the distance.

##### **HOGBACK BASIN TRAIL**

Soil disturbance would occur during construction of the proposed hiking trail in Hogback Basin (Alternatives 2-7). Additional impacts on the PCT would be expected if the two systems are not separate.

#### **PUBLIC AND SUPPORT SYSTEMS**

##### **WATER**

##### **USE**

Downstream water use would not be significantly affected as a result of any of the alternatives. Consumptive water use at White Pass would increase as use of the area increases (about 6.3 gallons/day/person). The gallon per day, per person water use at the warming hut reflects the reduced consumption that would be realized by the use of composting toilets.

**TABLE IV-3, PEAK ESTIMATED WATER USE AT WHITE PASS,  
BY ALTERNATIVE**

**ALTERNATIVE 1 (NO ACTION)**

Day Lodge .....	2,540 people/day @	6.3 gal/person =	16,000 gpd
Condominiums.....	220 people/day @	52.8 gal/person =	<u>11,620</u> gpd
			27,620 gpd

**ALTERNATIVE 2**

SAME AS ALTERNATIVE 1

**ALTERNATIVE 3**

Day Lodge .....	3,810 people/day @	6.3 gal/person =	24,000 gpd
Condominiums.....	220 people/day @	52.8 gal/person =	11,620 gpd
Warming Hut.....	800 people/day @	1.6 gal/person =	<u>1,280</u> gpd
			36,900 gpd

34% Increase over Existing

**ALTERNATIVE 4**

Day Lodge .....	2,540 people/day @	6.3 gal/person =	16,000 gpd
Condominiums.....	220 people/day @	52.8 gal/person =	11,620 gpd
Warming Hut.....	800 people/day @	1.6 gal/person =	<u>1,280</u> gpd
			28,900 gpd

5% Increase over Existing

**ALTERNATIVE 5**

Day Lodge .....	3,810 people/day @	6.3 gal/person =	24,000 gpd
Condominiums.....	220 people/day @	52.8 gal/person =	11,620 gpd
Warming Hut.....	1,200 people/day @	1.6 gal/person =	<u>1,920</u> gpd
			37,540 gpd

36% Increase over Existing

**ALTERNATIVE 6**

SAME AS ALTERNATIVE 5

**ALTERNATIVE 7**

Day Lodge .....	3,810 people/day @	6.3 gal/person =	24,000 gpd
Condominiums.....	220 people/day @	52.8 gal/person =	11,620 gpd
Warming Hut.....	1,600 people/day @	1.6 gal/person =	<u>2,560</u> gpd
			38,180 gpd

38% Increase over Existing

(Water use per day figures for the condominiums and the warming hut are from the EPA Design Manual. Use figures for the Day Lodge are from a flow study at White Pass, 1983-1984)



## **WASTE WATER DISPOSAL**

### **ALTERNATIVE 1** (COMMON TO ALL ALTERNATIVES)

There would be continued maintenance and repair of the existing septic system. The condominium system will be enlarged as necessary to meet today's higher EPA and State of Washington DSHS standards.

### **ALTERNATIVE 2**

Same as Alternative 1.

### **ALTERNATIVE 3**

With the addition of Chair Lift 7 the existing wastewater system for the day lodge and south side facilities would be upgraded to handle the anticipated increased Ski Area use. The system would be expanded to have a daily capacity of 3,810 people. The proposed warming hut in the Basin would have composting toilets and an associated drainfield capable of handling 800 people a day.

### **ALTERNATIVE 4**

This alternative adds a chair lift in Hogback Basin. The proposed warming hut in the Basin would have composting toilets and an associated drain field capable of handling 800 people per day. The wastewater facilities that serve the base area (day lodge and south side facilities) would not be enlarged. The additional Ski Area use projected as a result of expansion would use the warming hut facilities in addition to the existing ones. System capacity would be adequate to handle the projected use.

### **ALTERNATIVE 5**

The south side (day lodge, etc.) wastewater facilities would be enlarged as described in Alternative 3. The warming hut facilities would be increased to a daily capacity of 1,200 people. Wastewater system capacity would be greater than projected peak use.

### **ALTERNATIVE 6**

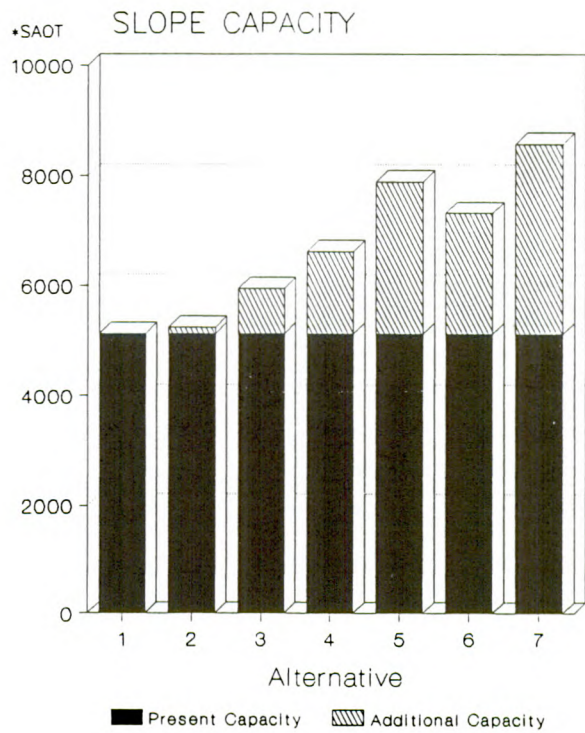
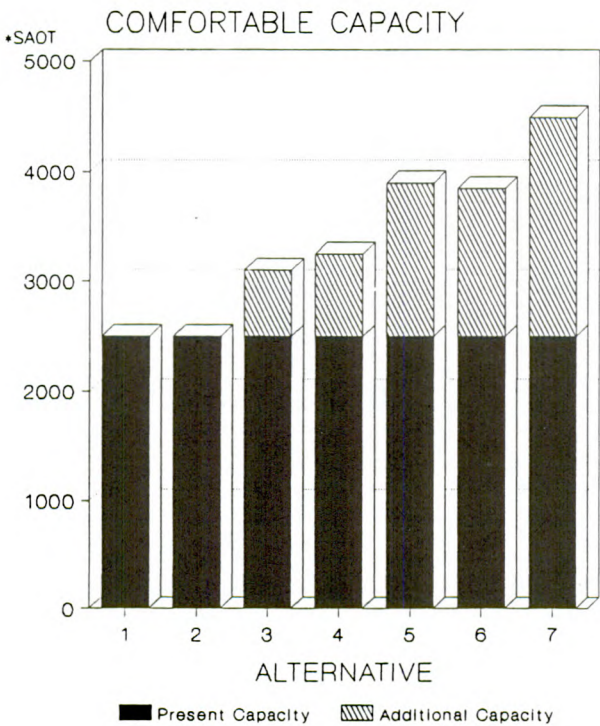
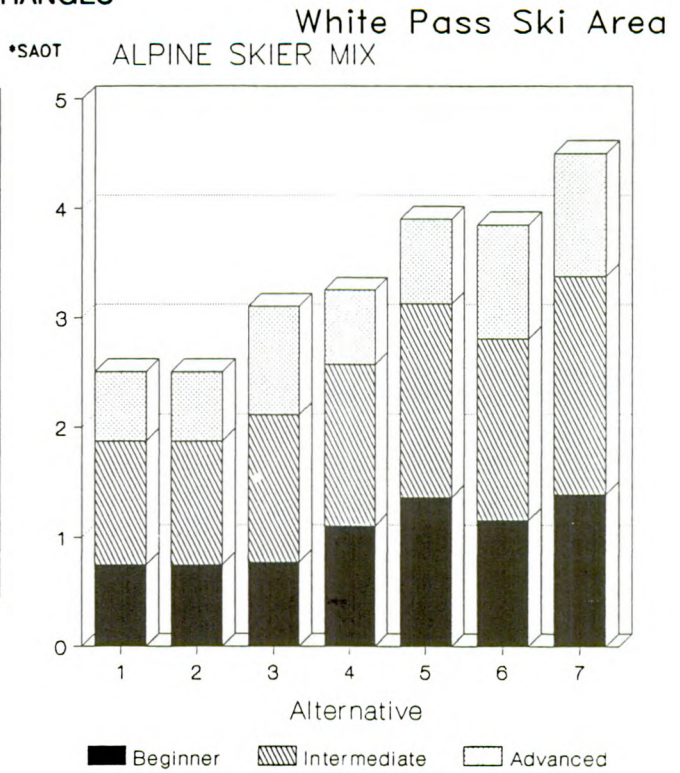
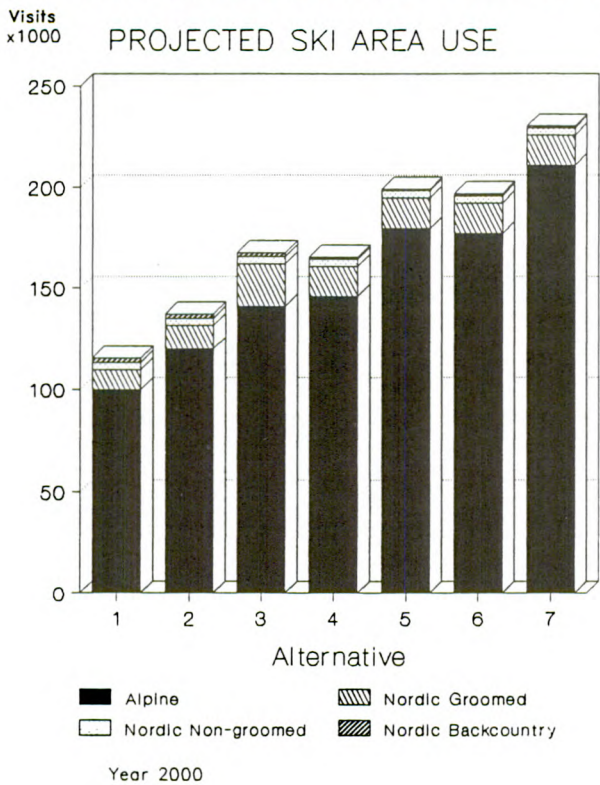
The south side wastewater facilities would be enlarged as described in Alternative 3. Additional composting toilets would be added to the warming hut proposed in Hogback Basin to increase daily capacity to 1,200 people.

### **ALTERNATIVE 7**

The south side wastewater facilities would be enlarged as described in Alternative 3. The composting toilet facilities in the warming hut would be increased to 1,800 people per day capacity.

The above facilities and others are summarized in Figure IV-9.

**FIGURE IV-9, BASE AREA FACILITIES CHANGES**



\*Skiers at one time

### **BUILDING CONSTRUCTION IMPACTS**

The construction of the mid-mountain warming hut and assorted buildings associated with the lift terminals would require excavation and disturbance of soils. Again the impacts would be from the potential soil erosion from unprotected soils and compaction from the operation of construction equipment and vehicles. Litter could also be a problem at the construction sites.

### **UTILITIES CONSTRUCTION IMPACTS**

New electrical lines would be buried from the power sources to the drive terminals of the proposed lifts. Electrical control lines would also have to be dug from the bottom to the top of each lift line. The backfilled trenches could be a site of erosion and a precursor to channeling, especially where trenches are dug up steep slopes. Trenches would also be needed for other utility lines, such as water lines and effluent transport.

### **PUBLIC SAFETY**

As areas are added and developed and as skier use increases, the Ski Patrol would also expand to meet the increased need. These activities include treatment of accidents, avalanche control, search and rescue, and public information on skier courtesy. This is included in the operating plans and costs for White Pass Company.

Management of the Ski Area boundary becomes more important if expansion occurs in Hogback Basin. Specifically, the boundary between the top of proposed lifts 5 and 6 and the Miriam Creek Basin would require being roped, signed and having entry points. Entry points would be used only for safety and education purposes and should not be used as a deterrent to use. The boundary west of proposed Chair Lift 6, along Hogback Ridge, would follow the roped, signed and entry point process but would most likely require only signing. The catchline road ski trail would be a very obvious boundary between upper Chair Lifts 5 and 6 and lower Chair Lift 7. Before construction of the lower elevation lift, the catchline road ski trail would also be signed and/or roped.

For avalanche accidents and lost skiers occurring within the Ski Area boundary, initial action would be taken by White Pass Company, according to procedures outlined in the White Pass Company Search and Rescue Plan. For accidents or lost skiers outside the Ski Area boundary, but reported to the Ski Area, word would be passed immediately to the appropriate Sheriff's Office to secure a search and rescue mission number. The Forest Service shall be kept advised of all search and rescue operations.

## **COMPARISON CRITERIA EFFECTS**

### **CRITERIA**

The primary issues, concerns and opportunities were grouped into five Comparison Criteria. The effects on each one are summarized:

#### **1. ADDITIONAL RECREATION OPPORTUNITIES**

See Recreation section, pages 430–434, for effects of this criterion.

#### **2. UNIQUE SETTING OF HOGBACK BASIN**

The effects of each alternative are perceived differently by the backcountry nordic skier and the alpine skier. The effects are displayed separately in this section.

##### **ALTERNATIVE 1 - (NO ACTION), AND ALTERNATIVE 2 - (NO CHANGE)**

###### **Effects to the Backcountry Nordic Skier:**

Any improvement of the present White Pass Permit Area would have a minor impact to the unique setting of the Hogback Basin and Ridge. Some increase in ski activity within the Permit Area, combined with the increasing popularity of backcountry nordic skiing, would gradually increase the human presence in this semi-primitive setting. The unique quality of getting away from other people and skiing untracked snow would be reduced gradually over time. The sights and sounds of others would reduce the qualities of independence, tranquility and closeness to nature, and the self-reliant type of experience. This situation is likely to be inevitable whether the present area is expanded or not.

###### **Effects to the Alpine Skier**

These alternatives would have little change or impact on the alpine skier.

##### **ALTERNATIVE 3 - ADD CHAIR LIFT #7 AND A MID-MOUNTAIN WARMING HUT**

###### **Effects to the Backcountry Nordic Skier**

Impacts would be similar to Alternatives 1 and 2, except there would be more human encounters in the vicinity of the unloading point of the lift and within Hogback Basin. The top tower could also be seen from a small portion of the lower Hogback Basin. Some backcountry skiers would be displaced due to the increase in skier density in the Basin. Day tourers and backcountry skiers would increase due to the easy ingress and egress via the chair lift and the presence of the warming hut.

**Effects to the Alpine Skier**

This alternative would have little or no effect on the unique setting as far as the alpine skier is concerned.

**ALTERNATIVE 4 - ADD CHAIR LIFT #5 AND A MID-MOUNTAIN WARMING HUT**

**Effects to the Backcountry Nordic Skier**

The lift would have a negative effect on the value of the setting. The lift and the skiing it would serve would reduce the Basin's semi-primitive area. Its visual presence from portions of the Basin would be offensive to those skiers who are seeking the easy access and semi-primitive experience of the area. Some human noises could be heard on Hogback Ridge from skiers leaving the top of Chair Lift 5. Skiers would be funnelled away from Hogback Ridge in order for them to get back on the same lift. Much of the Hogback Basin and Ridge would remain, for the most part, free of the mainstream impact of the ski lift, particularly compared to the alternatives which include Chair Lift 6.

The mid-mountain warming hut would not impact the present setting significantly due to its being on the edge of the present Permit Area. It would, more than likely, serve to gather the backcountry skiers at the end of the day, in a more unique setting, as compared to the day lodge at the base of the mountain.

**Effects to the Alpine Skier**

The lift-served telemark and alpine skier would benefit by this alternative. The glades in the eastern portion of Hogback Basin would be accessible and the chair lift would allow them to make repeated runs in the area. They would enjoy a more isolated alpine setting than in the present Permit Area, as well as being able to enjoy the spectacular views and better snow conditions. Access to high-elevation skiing is quite unique for beginner/intermediate skiers in the State of Washington.

The mid-mountain warming hut would offer a more quaint setting away from the lift lines and vehicle traffic, thus adding to the more primitive setting.

**ALTERNATIVE 5 - ADD CHAIR LIFTS #5 AND #6 AND A MID-MOUNTAIN WARMING HUT**

**Effects to the Backcountry Nordic Skier**

This alternative would seriously impact the unique setting for the backcountry nordic skiers. The present character of the unmodified landscape and semi-primitive setting would be lost for these people. The presence of lift towers, especially of Chair Lift 6, and the increase in numbers of people, would drastically change the character of both the Basin and the Ridge.

Some backcountry skiers would be displaced and need to find a replacement setting. They would have to ski somewhere other than White Pass, use areas without the same unique characteristics, or invest in considerably more effort to reach other areas with similar qualities.

Effects to the Alpine Skier

The groomed-slope telemarkers and the alpine skiers would have full access to Hogback Basin. These skiers would be able to enjoy a less crowded area with improved snow conditions and magnificent, panoramic scenery.

**ALTERNATIVE 6 - ADD CHAIR LIFTS #5 AND #7 AND A MID-MOUNTAIN WARMING HUT**

Effects to the Backcountry Nordic Skier

This alternative would have similar effects to Alternative 4.

Effects to the Alpine Skier

In addition to the effects of Alternative 4, the alpine skier would be able to ski nearly the full vertical potential of the area—from the top of Chair Lift 5 to the bottom of Lift 7. This added vertical potential and the expanded terrain would make the area more attractive to the vacation skier.

**ALTERNATIVE 7 - ADD CHAIR LIFTS #5, #6 AND #7, AND A MID-MOUNTAIN WARMING HUT**

Effects to the Backcountry Nordic Skier

This alternative would have the greatest negative effect on the unique setting from some backcountry skiers' standpoint. This would be due to construction of Chair Lift 6 in the heart of Hogback Basin and due to the increased use caused by the full development. The unique values of isolation and semi-primitive character would be lost for this user. Some backcountry skiers would be displaced, as with Alternative 5. [See Criterion 5, below.]

Effects to the Alpine Skier

The positive effects of both Alternatives 5 and 6 would be realized with this alternative. The entire Hogback Basin would be accessed for the alpine skiers, as well as the additional terrain served by Chair Lift 7.

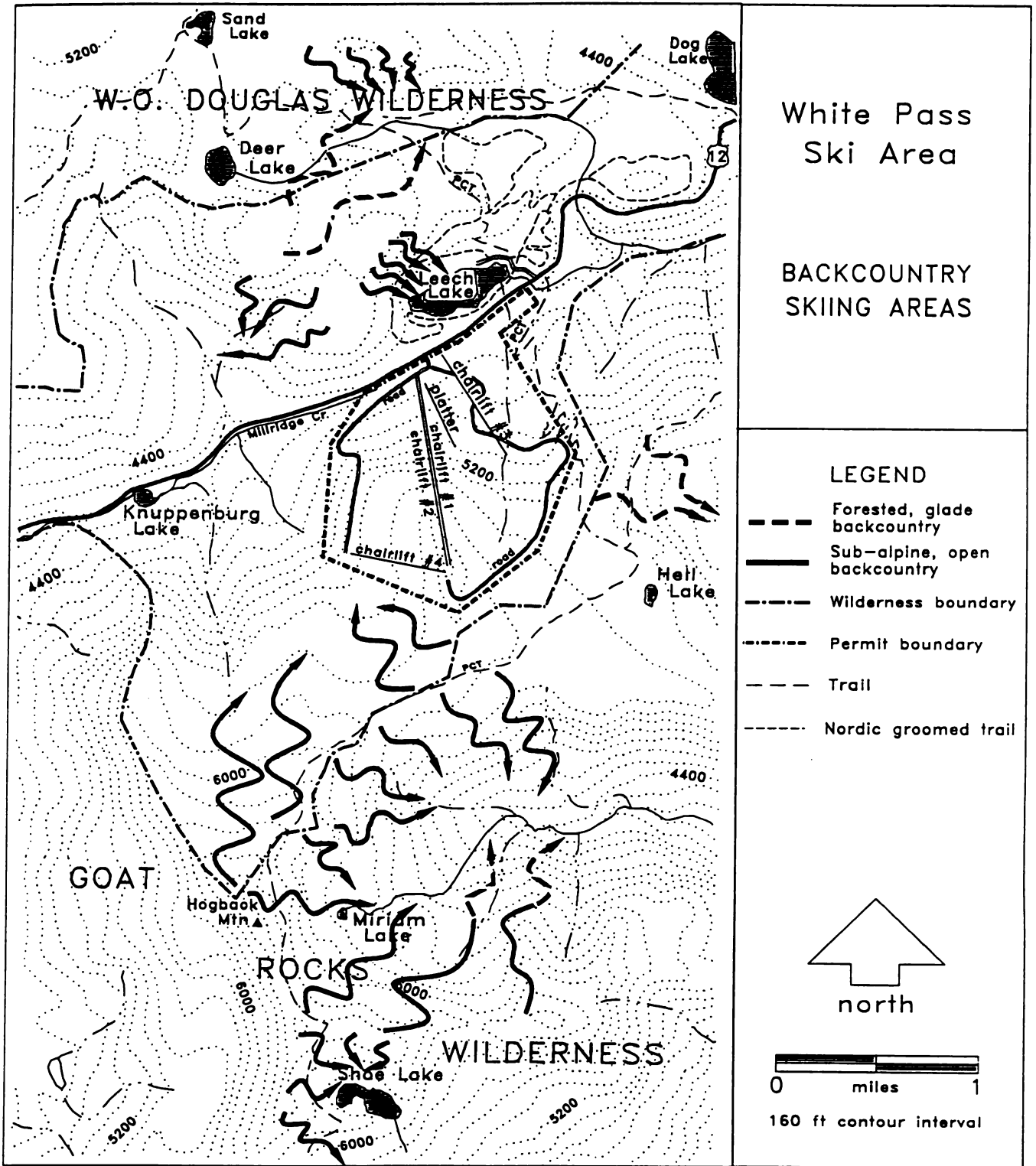
**3. PHYSICAL AND BIOLOGICAL EFFECTS**

See Physical and Biological section, pages 402–413.

**4. WILDERNESS IMPACTS**

See Wilderness section, pages IV-425–427.

FIGURE IV-10



## 5. DISPLACEMENT OF THE BACKCOUNTRY SKIER

Backcountry nordic skiers do not use defined areas. They tend to spread out and utilize areas that suit their techniques. Though there is considerable overlap, telemark skiers look for steeper headwalls while day tourers generally stay on more gentle slopes.

In addition to Hogback Basin, backcountry skiers use Miriam Basin, Shoe Lake Basin, and the Hell Lake Flat to the east of the existing area. They also utilize the areas north of U.S. 12. [See Figure IV-10.]

Use of these areas by backcountry skiers is summarized in Table IV-4. The alternatives that include adding Chair Lifts 5 and/or 6 would reduce the area available specifically for these skiers. They could still use the lift-served areas but the setting would not be the same. They would not be able to experience the isolation, tranquility, and semi-primitive setting they currently enjoy there. Table IV-5 summarizes the effect on backcountry acreage in the proposed expansion area.

It is recognized that the Hogback Basin situation is unique (see Comparison Criterion #2). Mitigation to retain portions of the Basin as ungroomed and available to nordic skiers in case of expansion would reduce their displacement to a certain degree, but the effect cannot be fully mitigated. There are, however, additional nordic skiing opportunities outside the study area (Figure IV-10 and III-20, and pages 360–366).

The majority of cross-country skiers using White Pass would benefit from groomed trail expansion. It would provide closer access to backcountry areas to the north and to the south of the proposed expansion area. Some of the day-touring backcountry skiers who now enjoy Hogback Basin as it is would indeed be displaced to areas that do not have the same unique character. But some of these skiers would continue to ski ungroomed areas within the Permit Area. [See Alternative Maps, Chapter II.]

**TABLE IV-4, ACRES USED BY BACKCOUNTRY SKIERS**

Area	Backcountry Acres Used By:		Total
	Telemarker	Day Tourer	
Hogback Basin (& Ridge).....	400.....	660.....	660*
Miriam Basin .....	300.....	—.....	300
Shoe Lake Basin .....	200.....	—.....	200
Hell Lake Flat.....	—.....	300.....	300
North of U.S. 12.....	100.....	1,000.....	1,000
<b>TOTALS (Rounded)+ .....</b>	<b>1,000 (1,000).....</b>	<b>1,960 (2,000).....</b>	<b>2,460 (2,500)</b>

(\*Net Useable Acres. + Used in Comparison Criteria tables.)



**TABLE IV-5, BACKCOUNTRY SKIING ACRES DISPLACED FROM HOGBACK BASIN:**

By Alternatives 4 and 6 (by Chair Lift 5)

	Telemarker	Day Tourer	Total
300 Acres Ungroomed.....	- 100.....	- 360.....	- 360
NET REMAINING .....	900.....	1,640.....	2,140

By Alternatives 5 and 7 (by Chair Lifts 5 and 6)

	Telemarker	Day Tourer	Total
235 Acres Ungroomed.....	- 265.....	- 425.....	- 425
NET REMAINING .....	735.....	1575.....	2,075

**ALTERNATIVE COMPARISON**

Comparison Criteria were developed to evaluate the effects of each alternative on the major issues concerns and opportunities identified during the scoping process. The following tables summarize the effects of the alternatives using these Comparison Criteria.

**TABLE IV-6 – 1. ADDITIONAL RECREATION OPPORTUNITIES**

Winter Recreation	ALTERNATIVES						
	1	2	3	4	5	6	7
<u>Alpine Skier (Comfortable Capacities)</u>							
Beginner.....	750	750	775	1105	1365	1155	1395
Intermediate.....	1125	1125	1333	1462	1755	1655	1980
Expert.....	625	625	992	683	780	1040	1125
<b>TOTAL</b> .....	<b>2500</b>	<b>2500</b>	<b>3100</b>	<b>3250</b>	<b>3900</b>	<b>3850</b>	<b>4500</b>

Nordic Skier (Acres Available)

Groomed trails (km.) .....	15	20	30	25	25	20	25
Non-groomed trails (mi.) .....	25	25	25	25	25	25	25
Backcountry-extended tourer .....	[Use is primarily outside study area] .....						
Backcountry-telemark (acres).....	1000	1000	1000	900	735	900	735
Backcountry-day tourer (acres).....	2000	2000	2000	1640	1575	1640	1575
Lift-served telemark.....	[Included with Alpine Skiers].....						

Summer Recreation	ALTERNATIVES	
	1	2-7
Chair lift operating?.....	Yes	Yes
Interpretive/naturalist program? .....	Yes	Yes
Trail system in Hogback Basin?.....	No	Yes
Wilderness objectives emphasized?.....	Yes	Yes

TABLE IV-7 – 2. UNIQUE SETTING OF HOGBACK BASIN

Acres Available For:	ALTERNATIVES						
	1	2	3	4	5	6	7
Nordic Skiers.....	660	660	660	300	235	300	235
Alpine Skiers .....	0	0	0	360	425	360	425

Values to Backcountry Nordic Skier	ALTERNATIVES						
	1	2	3	4	5	6	7
Isolation	Retained			Difficult to Achieve			
Independence and self-reliance	No Restrictions on Individual Choices						
Closeness to nature	Retained			Still Possible			
Tranquility	Retained			More Distractions/Encounters			
Semi-primitive setting	Retained			Changed to Roaded-Natural			
Scenic Quality	Retained						
Access	Retained		More	Too Easy			

Values to Alpine Skier	ALTERNATIVES						
	1	2	3	4	5	6	7
High elevation	Not Available			Available			
Snow conditions	Restricted to Existing Conditions			Upper Elevation Conditions Avail.			
Access to scenic views	Good Views Accessible			Even Better Views Accessible			
Variable terrain (B=begin; I=intermed; E=expert)	Good Mix Avail.			Increased Terrain Made available for: E   B/I   B/I   B/I/E   B/I/E			
Uncrowded conditions	Crowding Increases			Uncrowded Conditions Retained			

TABLE IV-8 – 3. PHYSICAL AND BIOLOGICAL EFFECTS

	ALTERNATIVES						
	1	2	3	4	5	6	7
Soil Displacement (tons/year)	226.5	226.5	240.7	256.5	275.3	266.2	285.0
Delivered Sediment (tons/year)	11.3	11.3	12.0	12.8	13.8	13.3	14.3
Mass Movement .....	No areas with Mass Movement Potential will be impacted						
Water Quality.....	Slight increases possible in sediment and turbidity as rated above. No other effects on water quality anticipated with planned mitigation.						
Wildlife Habitat .....	No adverse effect on wildlife habitat.						
Vegetative Clearing							
Heavy Timber.....	315	323	383	333	333	420	420
Open Stands.....	0	0	5	75	160	95	160
Visual Quality Areas (acres) Impacted with Retention, VQO and Low VAC. (The most sensitive areas)	315	323	383	333	333	420	420

TABLE IV-9 – 4. WILDERNESS EFFECTS

Alternative	Social/Physical Impacts	Users Solitude	Impacts to Views
1	Use increases at rate comparable to other areas.	No change from present.	No significant increase.
2	Winter increases at rate slightly greater than present trends. Interpretive program could reduce present summer trend. Awareness of area could contribute to future summer increases.	Small change in opportunities for solitude in winter. Could increase in summer, with programs in Hogback Basin. Awareness of area could contribute to future summer decreases.	No change in view.
3	Increases in ski touring. Summer: same as Alt 2.	Decreased in winter due to increases in ski touring. Summer: same as Alt. 2	Minimal impact to view.
4	Same as Alt.3.	Opportunities decreased by adjacent facilities.	Some adjacent views altered.
5	Same as Alt. 3.	Same as Alt. 4.	Same as Alt. 4.
6	Same as Alt. 3.	Same as Alt. 4.	Same as Alt. 4.
7	Same as Alt. 3.	Same as Alt. 4.	Same as Alt. 4.

**TABLE IV-10 – 5. DISPLACEMENT OF BACKCOUNTRY SKIERS**

	ALTERNATIVES						
	1	2	3	4	5	6	7
Acres Available:							
in Hogback Basin.....	660	660	300	300	235	300	235
in Study Area.....	2500	2500	2140	2140	2075	2140	2075

(Additional backcountry nordic skiing opportunities exist outside the study area, however the White Pass situation is considered unique—see Comparison Criterion #2. See also Figure I-18.)

**TABLE IV-11, COMPARISON CRITERIA SUMMARY**

Criterion	ALTERNATIVES						
	1	2	3	4	5	6	7
<b>1. Recreation Opportunities</b>							
Alpine Skier Capacity (skiers/day)....	2500	2500	3100	3250	3900	3850	4500
Nordic Groomed Trails (km.).....	15	20	30	25	25	20	25
Trail system - Hogback Basin.....	No	Yes	Yes	Yes	Yes	Yes	Yes
<b>2. Unique Setting - Hogback Basin</b>							
Acres – Nordic.....	660	660	660	300	235	300	235
Acres – Alpine.....	0	0	0	360	425	360	425
<b>3. Physical and Biological Effects</b>							
Soil Displacement (tons/year) .....	226.5	226.5	240.7	256.5	275.3	266.2	285.0
Delivered Sediment (tons/year).....	11.3	11.3	12.0	12.8	13.8	13.3	14.3
Vegetative Clearing (acres)							
Heavy Stands.....	315	323	383	333	333	420	420
Open stands.....	0	0	5	75	160	95	160
<b>4. Wilderness Effects</b>							
Social/Physical Impacts and User Solitude							
Winter.....	Base	Slight	Slight	Increase	Increase	Increase	Increase
		Increase	Increase				
Summer.....	Base	Decrease	Decrease	Decrease	Decrease	Decrease	Decrease
Impacts on Views.....	None	None	Min.	Some	Some	Some	Some
<b>5. Displacement of Backcountry Skiers (acres available)</b>							
Hogback Basin.....	660	660	300	300	235	300	235
In Study Area.....	2500	2500	2140	2140	2075	2140	2075

## **CUMULATIVE IMPACTS**

Council on Environmental Quality regulations (40 CFR 1508.7) require that cumulative impacts be considered in analysis of the alternatives. Cumulative impact is defined as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions.”

Cumulative effects are an aggregate of many direct and indirect effects and include actions which have occurred or can reasonably be expected to occur both within the Ski Area and outside the study area. Other recreational development, timber sales and retail and commercial development in nearby communities are examples of other actions, coupled with White Pass development, that result in cumulative impacts to the Forest’s resources. The impacts identified in this section assume implementation of Alternative 7, full development.

Additional hours of congestion on Highway 12 would be expected. This would lead to increased emissions but these would not be at significant levels and would be dispersed. There would be a slight increase in smoke emissions from construction slash disposal and from additional residences—but again not at a significant level.

About 315 acres of forest cover have been cleared for the existing development. An additional 100 acres of mature forest would be cleared with this proposal, as well as some clearing and impact on 160 acres of subalpine areas. The cumulative impacts are localized. Some change in vegetative composition is expected as described in the Vegetation section on plant communities.

Cumulative soil impacts are localized and consist of erosion and sedimentation resulting from road, lift and building construction and slope clearing. These impacts began with the existing Ski Area and would be increased about 25% with full development. They would not be noticeable in either the Cowlitz or Tieton River systems.

Cumulative effects on wildlife and water quality would be localized and minimal. Some additional disruption of foraging patterns of big game may occur, but this is not limiting for the populations involved. Also, slope clearing and added edge effect would increase some useful habitat. With the planned mitigation and the reconstruction of the condominium sewage system, water quality would not be adversely affected.

The natural-appearing landscape would be further disturbed by increased evidence of human activity. The existing development heavily impacts the visual quality of the immediate area of White Pass. Clearing and structures here have already modified the landscape. Clearing for Chair Lift 7 and its construction would impact an additional 100 acres and impose additional contrast and lines on the landscape. The visual quality in the upper areas (Hogback Basin) would be retained from most viewpoints.

The alpine skiing experience at White Pass would be improved with the increase in the amount and variety of skiing terrain. This would make the White Pass operation more competitive for vacation skiers. Increased tourism is expected in the general area. More tourist and service businesses would be attracted to the area—especially in the Packwood and

Rimrock/Trout Lodge areas. Year-round trade would help make these tourist businesses more viable. The demand for homes would increase and land values would rise. However, the land base is not constrained so a range of land values would remain.

Increased traffic on Highway 12 would exceed design capacities. Currently, peak flows are during the summer and they already exceed design capacity. With development, winter peaks would also occur. No construction is anticipated, but mitigation is proposed to reduce congestion and accidents at the Ski Area. This is primarily a recreation highway and congestion during peak periods is acceptable according to the WDOT.

### **SUMMARY OF ADVERSE EFFECTS WHICH CANNOT BE AVOIDED**

The implementation of any of the alternatives results in some adverse impact to both the physical and biological environments and to the human environment. Most of these can be mitigated to acceptable levels using measures previously specified. The unavoidable adverse impacts summarized below are those that are expected to occur after application of these mitigating measures, or which cannot be mitigated to a level approaching existing conditions.

Most impacts to the physical and biological environments can be acceptably mitigated. There would be increased soil disturbance; however, no mass movement or degradation of water quality is projected. There would be little direct effect on wildlife habitat. The direct effect of increased development within elk winter range cannot be fully mitigated, but this situation is not considered critical. Vegetative effects would be primarily changes in plant community composition and are not considered significant.

The visual character of the highway corridor would be impacted more than at present. Clearing for the lift line, ski runs and access road for Chair Lift 7 would add lines and alter colors in the characteristic landscape of uniform, dense, mature timber. These changes cannot be fully mitigated. To the extent possible, however, impacts would be reduced by feathering the edges of the clearings and by painting structures and hardware colors that blend with the landscape. Landscape architect's skills would be utilized when designing clearings.

The change in the mix of skiers using Hogback Basin cannot be fully mitigated. With full development the Basin becomes available for alpine skiing and summer trail hiking. The unique setting for the backcountry nordic skier would be altered. The isolation, tranquility and semi-primitive setting would not be available and there would be some displacement of this use. As a mitigation measure at least 235 acres of the Basin would remain ungroomed and available for nordic skiing.

Mitigation measures have been identified to minimize adverse effects on the Wilderness, especially on Miriam and Shoe Lake Basins. These measures should allow use to remain at or below existing levels. If the mitigation measures are not successful, with increased summer use in Hogback Basin adverse Wilderness impacts could occur in the Goat Rocks Wilderness. Monitoring of impacts is provided for and there are provisions for bringing them back to acceptable levels if necessary.

Some of the social and economic changes in local communities would not be mitigated. As development occurs and more skiers use the area, tourist and service business in the Packwood and Rimrock/Trout Lodge areas would increase. Some people would consider this a positive effect. Its side effects, increased land values and, possibly, increased taxes, would be an adverse effect to others. This effect could not be fully mitigated but the land base is large enough so the adverse effects would not become critical.

### **RELATIONSHIP BETWEEN SHORT-TERM USE AND LONG-TERM PRODUCTIVITY**

Short-term effects of the alternatives, both beneficial and adverse, have been identified in previous sections. In this section, they are discussed in terms of their implications for the long-term stability and productivity of the environment.

White Pass Company has been committed to long-term management of the White Pass Ski Area since its opening in 1953. This use accommodates a high level of recreation visits on a relatively small portion of the National Forests. Each of the alternatives continues this long-term commitment of the local environment to relatively high-density recreational use. Continued development would create an opportunity for considerably more people to use the area.

Long-term effects on the productivity of the physical and biological resources would be minimal. About 100 acres of old-growth timber would be removed and these areas revegetated with natural grass/shrub species replacing the trees. Minor changes in vegetational composition in Hogback Basin are anticipated but they would be shifts in successional patterns not a loss of productivity. There would be little long-term effect on wildlife habitat. Chair Lift 7 would change the visual character of the highway corridor and this would be considered a long-term change in the visual objectives for the viewed area.

Removal of vegetation for road, facility and lift construction would result in a short-term loss of protective cover and increased soil erosion. The short-term erosion and soil productivity loss from soil disturbance would be mitigated by prompt revegetation. In the long-term, soil productivity would be lost at facility development sites and within road prisms. This would be due to soil compaction in these areas and the long-term commitment to use. The effects of soil displacement are displayed in preceding sections.

More visitors to White Pass would create a demand for increased commercial and retail development. Some changes in the character of local communities would occur, as well as some increase in population, both permanent and seasonal. The broader tax base resulting both directly and indirectly from this development would be offset by increased demand for services.



## **IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES**

Irreversible commitment of resources refers to non-renewable resources, such as cultural resources, or to those which are renewable only after long time spans, such as soil productivity. Irretrievable commitment applies to losses of production, harvest or use of renewable natural resources. For example, the timber production capability of an area is irretrievably lost while the area is used as a winter recreation site. The production lost is irretrievable, but the action is not irreversible.

Ski area development represents an essentially permanent commitment of an area to relatively high-density recreational use, and, though additional development at White Pass would not be a completely irreversible or irretrievable commitment of resources, from a practical standpoint it can be considered as such. Should the time come that development in the Permit Area is no longer desired and is amortized, the various facilities can be dismantled and removed and the area revegetated or allowed to return to a natural state.

Because of the earth work required and the loss of soil productivity, irreversible commitments would include construction of new access roads and parking areas. Other aspects of the development, including lifts, utilities and buildings could be reversed and natural resources restored over time.

Loss of soil productivity would be irreversible at sites of development. Compaction along roads, trails and other places frequented by people could cause irretrievable impacts to the ability of these areas to support vegetation. Vegetation removed for these developments would be an irretrievable impact for at least the life of the project.

The visual resource would be irretrievably altered by the Chair Lift 7 clearings. These would remain long after the life of the facility.

The use of rock to gravel the roads and parking areas would be an irretrievable commitment of these limited resources.

## **SPECIFICALLY REQUIRED DISCLOSURES**

### **1. Effects of Alternatives on Threatened and Endangered Species and Critical Habitats.**

There would be no adverse impacts to any Federally-listed threatened and/or endangered species or any critical habitat as a result of this project.

### **2. Effects on Floodplains and Wetlands.**

There would be no adverse impacts on any floodplains or wetlands.

### **3. Effects of Alternatives on Prime Farm Land, Rangeland, and Forest Land.**

All alternatives are in keeping with the intent of Secretary of Agriculture Memorandum 1827 for prime land. The project area does not contain any prime farm lands or rangelands. "Prime Forest Land" does not apply to lands within the National Forest system. In all alternatives, National Forest lands would be managed with a sensitivity to the effects on adjacent lands.

4. Energy Requirements of Alternatives.

There are no unusual requirements for implementing any of the alternatives; energy use is proportional to the amount of use of the area.

5. Effects of Alternatives on Minorities and Women.

There would be no differences between alternatives in their effect on American Indians, other minorities, women, or the Civil Rights of any American citizen. Alternatives that increased job opportunities, would increase them for all minorities.

The Yakima Indian Nation's concern that development at White Pass would adversely affect the area's cultural and spiritual meaning and its naturalness because of more use to the area, is recognized. Alternative 7 could have the most effect on the cultural and spiritual aspects of the area, while the other alternatives would have less. Any development in the project area would not prohibit Native Americans' traditional uses. The actual on-site disturbance would be very minimal compared to the total area available.

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# CHAPTER V

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## PREPARERS OF THE DEIS AND FEIS





## CHAPTER V

### LIST OF PREPARERS

Preparation of this Final Environmental Impact Statement was accomplished by three groups. A Forest Service Interdisciplinary Team managed the analysis process, developed the range of alternatives analyzed in it, and provided the data analysis and review.

The second group was the resource specialists who provided data and information in the specialties. Some of these are Forest Service resource specialists. Others were consultants under contract to White Pass Company. Some are in the private sector.

The document was written and edited by Cascade Woodlands under contract by the Wenatchee National Forest.

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Cross Country Ski Areas of America

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Member, original EA ID Team

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USFS, Naches RD

**Dick Kendall**

USFS Master Performer in Cross-Country Skiing

**Bob Lucas**

Fish Biologist  
Washington State Department of Wildlife

**Henry Maekawa**

Landscape Architect  
USFS, WNF

**Kevin McCarthy**

Manager  
White Pass Ski Area

**Guy Moura**

Archaeologist  
Consultant, cultural resource survey

**John Rupe**

Planning Analyst, Economist  
USFS, Colville National Forest

**Jack Thorne**

Resource Assistant  
USFS, Packwood Ranger District

**Walter Tokarczyk**

Fire and Recreation Technician, retired  
USFS, Naches RD  
Member, original EA ID Team

**Jim Tyler**

Resource Assistant  
USFS, Naches RD



### **C. WRITER, EDITOR**

The writing and editing of this document was done by Cascade Woodlands, Wenatchee, Washington, a private consulting firm, under contract with the Wenatchee National Forest (Solicitation No. R6-17-89-17). Carter Communications provided assistance in editing, formatting and preparation of camera-ready copy for the printer.

In accordance with CEQ Regulations (1506.5(c)), the consultant was selected solely by the Forest Service, the consultants executed a disclosure statement specifying they have no financial or other interest in the outcome of the project, and the Forest Service provided guidance throughout the development of the EIS and has responsibility for its scope and content.

**Amie Ameson — Owner, Operator, Cascade Woodlands**

**Education:** B.S. Forest Management

**Experience:** 28 years USFS, Pac.NW and Rocky Mountain Regions. Primary experience forest and recreation management and administration. Last five years operated forest, recreation and environmental consulting service.

**Richard Carter — Owner-Operator, Carter Communications**

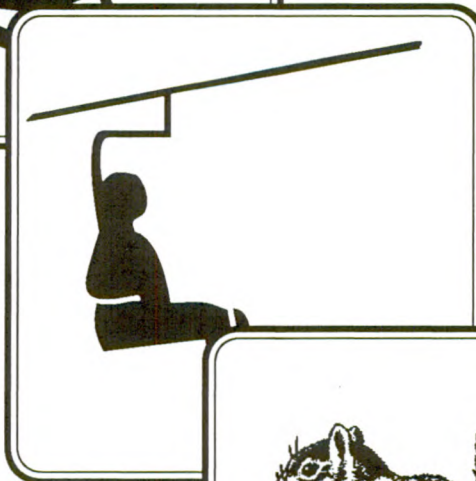
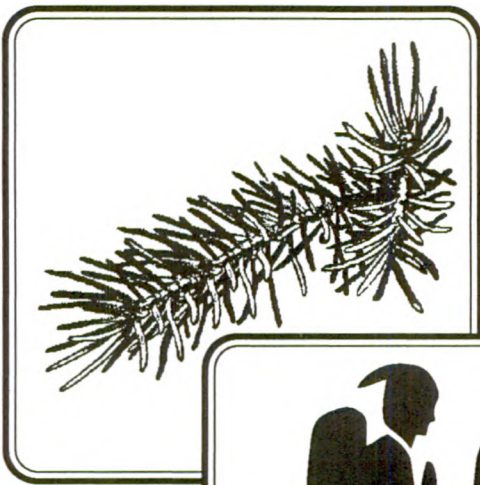
**Education:** B.A. Anthropology, B.A. Journalism

**Experience:** Free-lance writer for newspapers, industry and public television since 1972. Currently operates a writing, editing and layout/design firm in Wenatchee, Washington.

# CHAPTER VI

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## APPENDICES



- A - Request for Public Comment
- B - Initial Public Comment
- C - To Whom Copies are Sent
- D - Public Comment on the DEIS
  - Agencies D-2
  - User Groups and Organizations D-21
  - The General Public D-28
- E - List of Plants Found
- F - Ski Area Boundary Management Guidelines
- G - 1855 Treaty with the Yakima, and other Tribes





United States  
Department of  
Agriculture

Forest  
Service

Wenatchee  
National  
Forest

301 Yakima Street  
P.O. Box 811  
Wenatchee, WA 98801

Reply To: 2720/1950

Date: October 7, 1988

### Forest Users and Coordinating Agencies

You have previously expressed interest in the White Pass Company proposal to expand the White Pass Ski Area. We are now in what is called the "Scoping Process" to identify issues, concerns, and alternatives to be considered in an Environmental Impact Statement (EIS) on this proposal. This letter is an invitation for you to help us determine the issues and alternatives to be considered.

The proposal is to expand the existing White Pass Ski Area by the construction of three chair lifts and a mid-mountain lodge, largely into lands withdrawn from the Goat Rocks Wilderness by the 1984 Washington State Wilderness Act. In a previous environmental analysis, we received nearly 200 letters from interested individuals and agencies in regards to the proposal. It is controversial in several respects. Based on the analysis and public comment, I have determined that an EIS is needed to review a wider range of alternatives in greater depth.

I have enclosed a copy of the notice filed in the Federal Register announcing this process. The notice provides you with a brief summary of the proposal. We are inviting your written comments and suggestions on the scope of the analysis to be covered in the EIS. A response form is enclosed. The deadline for comment on this initial stage of the process has been extended to November 21, 1988. You will have 90 full days to review the Draft Environmental Impact Statement when it is released next year.

Several alternatives were developed during the preparation of the Environmental Assessment (EA). Since that time, several additional alternatives have been developed in response to comments received on the EA and as a result of input from the Forest Service Interdisciplinary Team that has been formed to prepare the EIS.

### TENTATIVE ALTERNATIVES - (Refer to Map)

1. NO ACTION: Management of existing facilities without expansion outside the existing permit area.





**TENTATIVE ALTERNATIVES** - (Refer to Map) cont'd.

2. **BUILD CHAIR LIFT 7 and MID-MOUNTAIN LODGE:** This would provide additional expert skiing terrain and mid-mountain lodge would serve both alpine and cross-country skiers. Most of Hogback Basin would be left undisturbed. The beginner and intermediate alpine skiing terrain would basically stay as it is.

3. **BUILD CHAIR LIFT 5 and MID-MOUNTAIN LODGE:** This would enable both alpine and cross-country skiers to access the higher elevation. Very little additional expert terrain would be developed, but some additional beginner and intermediate skiing terrain would be made available. Cross-country skiers would have to share more terrain in Hogback Basin with downhill skiers.

4. **BUILD CHAIR LIFTS 5 and 6 and MID-MOUNTAIN LODGE:** This alternative would provide the most alpine skiing in Hogback Basin, expanding the ski area's capacity of beginner, intermediate, and expert terrain. Less terrain would be available solely to cross-country skiing. Only short additional runs would be available in terrain for expert skiers.

5. **BUILD CHAIR LIFTS 5 and 7 and MID-MOUNTAIN LODGE:** This alternative would provide additional beginner, intermediate, and expert terrain, but leave more of the west side of Hogback Basin available to cross-country skiers.

6. **BUILD CHAIR LIFTS 6 and 7 and MID-MOUNTAIN LODGE:** This alternative would provide additional beginner, intermediate, and expert terrain, but would leave more of the east side of Hogback Basin available to cross-country skiers.

7. **BUILD CHAIR LIFTS 5, 6, 7, and MID-MOUNTAIN LODGE:** This alternative (the proposal) would provide the most alpine skiing, expanding the ski area's capacity of beginner, intermediate, and expert terrain. It would also require the most sharing of terrain by cross-country and downhill skiers.

8. **CONSTRUCT MID-MOUNTAIN LODGE and CROSS-COUNTRY SKI TRAILS IN THE HOGBACK BASIN:** This alternative would serve the cross-country skiers, but would not provide additional alpine skiing.

Several potential issues have also been identified. Your help is needed to determine which issues should be analyzed in depth. Feel free to suggest additional issues which should be addressed in the EIS.

**POTENTIAL ISSUES TO BE ADDRESSED**

1. **UNIQUENESS OF AREA:** Is this area unique from a cross-country skiing standpoint? Will the proposal degrade the opportunity to cross-country ski in the area? What is the appropriate use of mix of uses? If a mix is appropriate, where should each use take place? Can development occur in a manner which minimizes user conflicts?





POTENTIAL ISSUES TO BE ADDRESSED - cont'd.

2. EFFECTS UPON ADJACENT WILDERNESS VALUES: Will increased human activity associated with the proposal lead to increased use of adjacent Wilderness, winter and summer? Will the solitude of users and views seen from the Wilderness be degraded? Can this proposal be implemented in a manner which minimizes the effects on adjacent Wilderness values and reduces those effects to acceptable levels?

3. BENEFITS TO THE RECREATING PUBLIC: To what degree does the proposal improve the overall attractiveness of the ski area to the recreating public? Does the demand for additional recreational opportunity outweigh the costs of development in terms of environmental impacts and altered mix of uses?

4. HAZARDS TO DISPLACED CROSS-COUNTRY SKIERS: If development takes place, will displaced cross-country skiers be pushed into more hazardous terrain?

5. RESOURCE CAPABILITY: Can the watershed and soil be kept in a suitable condition if development occurs?

The information you provide will be considered in the preparation of the Draft EIS. A postage-paid response form has been included for your convenience. Feel free to send your personal letter if you prefer.

Public meetings will be held in Yakima and Randle, Washington, to further identify issues, clarify the alternatives, and answer questions. The Yakima meeting is scheduled for November 9, 1988, at 7 p.m. at the Red Lion Inn, 1507 North 1st. The meeting in Randle will take place November 10, 1988, at 7 p.m. in the grade school multi-purpose room. These meeting dates and locations will be published in local newspapers and posted in public buildings. Information gathered from these meetings will also be used in preparation of the DEIS.

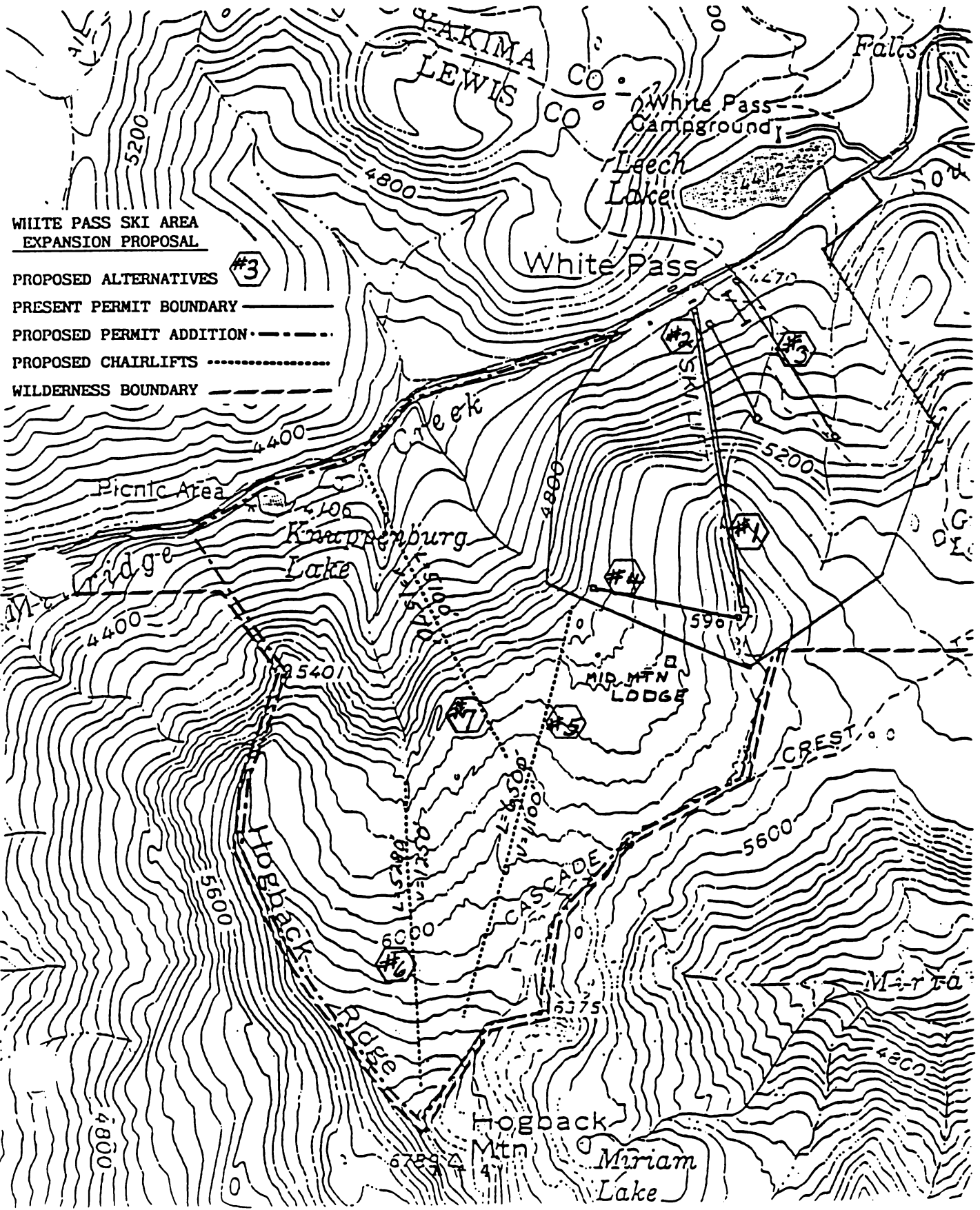
We appreciate your interest in the management of your National Forest and look forward to your input. With your help, I am confident the final decision to determine how this area of land is to be managed will be well thought out and in the best public interest.

Sincerely,

*Phillip O'Neal*  
for SONNY J. O'NEAL  
Forest Supervisor

Enclosures





**WHITE PASS SKI AREA  
EXPANSION PROPOSAL**

- PROPOSED ALTERNATIVES #3
- PRESENT PERMIT BOUNDARY —————
- PROPOSED PERMIT ADDITION - - - - -
- PROPOSED CHAIRLIFTS .....#.....
- WILDERNESS BOUNDARY - - - - -

PUBLIC SCOPING RESPONSE FORM  
FOR THE  
WHITE PASS SKI AREA EXPANSION PROPOSAL

Expansion of the White Pass Ski Area has been proposed by the White Pass Company, and the Forest Service is now seeking public comment to assist in development of an Environmental Impact Statement on the proposal. We would like your thoughts on the important issues, concerns, and alternatives that should be included in the EIS. Please use this postage-paid response form to give us your comments, or, feel free to send a personal letter if you prefer.

We need your response no later than November 21, 1988.

TENTATIVE ALTERNATIVES - Please share your thoughts on the current range of alternatives. We would also like to know if there are other alternatives which have not been identified that you feel should be considered in the EIS.

POTENTIAL ISSUES TO BE ADDRESSED - We would like to know which management issues are important to you and should be analyzed in depth in the EIS. Please feel free to suggest additional issues that should be addressed in the EIS.





# Notices

Federal Register

Vol. 53, No. 160

Thursday, August 18, 1988

This section of the FEDERAL REGISTER contains documents other than rules or proposed rules that are applicable to the public. Notices of hearings and investigations, committee meetings, agency decisions and rulings, delegations of authority, filing of petitions and applications and agency statements of organization and functions are examples of documents appearing in this section.

## DEPARTMENT OF AGRICULTURE

### Forest Service

#### White Pass Ski Area Expansion; Intent To Prepare Environmental Impact Statement

**AGENCY:** Forest Service, USDA.

**ACTION:** Notice of intent to prepare an Environmental Impact Statement.

**SUMMARY:** The Forest Service will prepare an environmental impact statement (EIS) for a proposal to expand the White Pass Ski Area Special Land Use Permit boundary to allow for downhill and cross country skiing in the 100-acre area that was withdrawn from the Goat Rocks Wilderness by the Washington State Wilderness Act of 1984 and an additional 500 acres of National Forest administered land. This proposal is located on the Packwood Ranger District of the Gifford Pinchot National Forest in Lewis County and the area of land is administered by the Naches Ranger District of the Wenatchee National Forest through a Memorandum of Understanding. The agency invites written comments and suggestions on the scope of the analysis. In addition, the agency gives notice of the full environmental analysis and decision-making process that will occur on the proposal so that interested and affected people are aware of how they may participate and contribute to the final decision.

**DATE:** Comments concerning the scope of the analysis must be received by October 1, 1988.

**ADDRESS:** Submit written comments and suggestions concerning the scope of the analysis to Sonny J. O'Neal, Forest Supervisor, Wenatchee National Forest, 701 Yakima St., P.O. Box 811, Wenatchee, Washington 98807-0811.

**FOR FURTHER INFORMATION CONTACT:** Direct questions about the proposed action and EIS to Phillip D. Glass,

Recreation Staff Officer, Wenatchee National Forest at the above address, telephone (509) 862-4332, or Donald Rotell, District Ranger, Naches Ranger District, Wenatchee National Forest, 10081 Highway 12, Naches, Washington 98937, telephone (509) 653-2205.

**SUPPLEMENTARY INFORMATION:** The EIS will be prepared in accordance with existing approved land and resource management plans. The document will discuss whether to allow expansion of the existing ski area to the area in question and what restrictions may apply to the expansion area. The proposal encompasses about 1300 acres.

In preparing the EIS, the Forest Service will identify and consider a range of alternatives for this site. A range of alternatives will be developed and examined to deal with the significant issues developed during the scoping process. One alternative will include the no action alternative. Other alternatives will consider different intensities of development with or without special management requirements.

Sonny O'Neal, Forest Supervisor, Wenatchee National Forest, Wenatchee, Washington, is the responsible official.

Public participation will be especially important at several points during the analysis. The first point is during the scoping process (40 CFR 1501.7). The Forest Service will be seeking information, comments, and assistance from Federal, state and local agencies, and other individuals or organizations who may be interested in or affected by the proposed action. This input will be used in preparation of the draft EIS. The scoping process includes:

1. Identifying potential issues.
2. Identifying issues to be analyzed in depth.
3. Eliminating insignificant issues or those which have been covered by a relevant previous environmental analysis.
4. Exploring additional alternatives.
5. Identifying potential environmental effects of the proposed action and alternatives (i.e., direct, indirect, and cumulative effects and connected actions).
6. Determining potential cooperating agencies and task assignments.

Public meetings will be held in eastern and western Washington. Notice of meeting dates and locations will be

published in local newspapers and posted in public buildings.

The draft EIS is expected to be filed with the Environmental Protection Agency (EPA) and to be available for public review by March 1989. At that time EPA will publish a notice of availability of the draft EIS in the Federal Register.

The comment period on the draft EIS will be 45 days from the date the EPA's notice of availability appears in the Federal Register. It is very important that those interested in the management of the proposed White Pass Ski Area expansion participate at that time.

To be the most helpful, comments on the draft EIS should be as specific as possible and may address the adequacy of the statement or the merits of the alternatives discussed (see The Council on Environmental Quality Regulations for implementing the procedural provisions of the National Environmental Policy Act at 40 CFR 1503.3). In addition, Federal court decisions have established that reviewers of draft EIS's must structure their participation in the environmental review of the proposal so that it is meaningful and alerts an agency to the reviewers' position and contentions. *Vermont Yankee Nuclear Power Corp. v. NRDC*, 435 U.S. 519, 553 (1978), and that environmental objections that could have been raised at the draft stage may be waived if not raised until after completion of the final EIS. *Wisconsin Heritages, Inc. v. Harris*, 490 F. Supp. 1334, 1338 (E.D. Wis. 1980). The reason for this is to ensure that substantive comments and objections are made available to the Forest Service at a time when it can meaningfully consider them and respond to them in the final.

After the comment period ends on the draft EIS, the comments will be analyzed and considered by the Forest Service in preparing the final EIS. The final EIS is scheduled to be completed by November 1989. In the final EIS the Forest Service is required to respond to the comments received (40 CFR 1503.4). The responsible official will consider the comments, responses, environmental consequences discussed in the draft EIS, and applicable laws, regulations, and policies in making a decision regarding this proposal. The responsible official will document the decision and reasons for the decision in the Record of Decision. That decision will be subject to appeal under 36 CFR 211.18.

Sonny J. O'Neal,  
Forest Supervisor.

[FR Doc. 88-18669 Filed 8-17-88; 8:45 am]

BILLING CODE 3410-11-M



Reply To: 2720/1950

Date: June 30, 1989

### Forest Users and Coordinating Agencies

Last October, we asked for public comment on the White Pass Company proposal to expand the White Pass Ski Area to help us identify the important issues, concerns, and potential alternatives to be considered in development of a Draft Environmental Impact Statement (DEIS).

With the completion of the DEIS, the second phase in the evaluation of the expansion proposal has been reached. The next step in the evaluation process is to ask for public review and comment on the information contained in the DEIS.

Enclosed you will find a Summary which contains an overview of the alternatives and issues addressed in the DEIS. If you had previously requested a copy of the complete DEIS, you will also find that document enclosed. Copies of both the Summary and DEIS are also available at public libraries and local Forest Service offices.

To assist you in sharing your thoughts on the DEIS, a postage-paid response form has been enclosed for your use. Feel free to send a personal letter if you prefer. The deadline for public comment on the DEIS is August 31, 1989.

In addition to the information in the environmental documents, we will hold three public meetings and a field day to discuss the expansion proposal, answer questions, and gather input from the public.

Meetings will be held in Yakima, Randle, and Seattle. The Yakima meeting will take place August 1, at 7 p.m. at the Holiday Inn, 9 North 9th St. The Randle meeting is scheduled for August 2, at 7 p.m. in the grade school multi-purpose room. In Seattle, the meeting will be held on August 3, at 7 p.m. in the Seattle Center, Conference Room A, in the Center House.





2720/1950, Forest Users and Cooperating Agencies, 6/30/89 2

August 5 has been scheduled for the field day at White Pass Ski Area. Participants will ride the chair lift to Pigtail Peak and then take a short hike to the proposed expansion area.

All meeting dates and locations will be published in local newspapers and posted in public buildings. Information gathered from the meetings will also be used in preparation of the Final Environmental Impact Statement (FEIS).

I appreciate your interest in the management of your National Forest and look forward to your comments. I am confident the final decision on how to manage this area of land will be well thought out and in the best public interest.

Sincerely,

SONNY J. O'NEAL  
Forest Supervisor

Enclosures



Caring for the Land and Serving People

This yields a volumetric refund amount of \$0.00000042677 per gallon.

As we stated in previous Decisions, a crude oil refund applicant will be required to submit only one application for crude oil overcharge funds. See *Allerkamp*, 17 DOE at 88,176. Any party that has previously submitted a refund application in the crude oil refund proceedings need not file another application. A deadline of June 30, 1988, was established for all first stage crude oil refund proceedings implemented pursuant to the MSRP up to and including *Shell Oil*. See *A. Tarricone, Inc.*, 16 DOE at 89,339; *Allerkamp*, 17 DOE at 88,178; *Shell Oil*, 17 DOE at 88,408. Any applicant that files a refund application after that deadline will be eligible to receive a refund based only on the volumetric amounts approved subsequent to that date in the second stage of disbursements. The volumetric refund amount will be increased as additional crude oil violation amounts are received in the future. Applicants may be required to submit additional information to document their refund claims for these future amounts. Notice of any additional amounts available in the future will be published in the Federal Register.

#### *B. Payments to the States and Federal Government*

Under the terms of the MSRP, we propose that the remaining 80 percent of the alleged crude oil violation amounts subject to this Proposed Decision, or \$690,000 plus interest, be disbursed in equal shares to the states and Federal government for indirect restitution. Refunds to the states will be in proportion to the consumption of petroleum products in each state during the period of price controls. The share or ratio of the funds which each state will receive is contained in Exhibit H of the Stripper Well Exemption Litigation Settlement Agreement. These funds will be subject to the same limitations and reporting requirements as all other crude oil monies received by the states under the Settlement Agreement.

Before taking the actions we have proposed in this Decision, we intend to publicize our proposal and solicit comments on it. Comments regarding the tentative distribution process set forth in this Proposed Decision and Order should be filed with the OHA within 30 days of its publication in the Federal Register.

*It Is Therefore Ordered That:* The refund amount remitted to the Department of Energy by Tri-Services Drilling Company pursuant to the Consent Order executed on March 24, 1989, will be distributed in accordance with the foregoing Decision.

[FR Doc. 89-16020 Filed 7-6-89; 8:45 am]

BILLING CODE 6450-01-M

the purchase and sale of "entitlements." This balancing mechanism had the effect of evenly disbursing overcharges resulting from crude oil miscertifications throughout the domestic refining industry. See *Amber Refining Inc.*, 13 DOE ¶ 85,217 at 88,564 (1985).

## ENVIRONMENTAL PROTECTION AGENCY

[ER-FRL-3612-5]

### Environmental Impact Statements; Availability

Responsible Agency: Office of Federal Activities, General Information (202) 382-5073 or (202) 382-5075. Availability of Environmental Impact Statements Filed June 26, 1989 Through June 30, 1989 Pursuant to 40 CFR 1506.9.

*EIS No. 890175*, Final, FHW, MD, MD-228 Extension, US 301 to MD-210 and MD-210 Improvement, MD-228 Extended to Old Fort Road, Funding, Charles and Prince Georges Counties, MD, Due: August 7, 1989, Contact: Herman Rodrigo (301) 962-4132.

*EIS No. 890176*, Draft, AFS, WY, Threemile Area Timber Sale and Road Construction, Medicine Bow National Forest Land and Resource Management Plan, Medicine Bow National Forest, Carbon County, WY, Due: September 1, 1989, Contact: Gary Rorvig (307) 745-8971.

*EIS No. 890177*, Draft, BLM, UT, USPCI Clive Tranfer/Storage/Incineration Facility and Associated Transportation/Utility Corridors, Construction and Operation, Right-of-Ways and/or Land Exchange, Tooele County, UT, Due: September 5, 1989, Contact: Dennis Oaks (801) 524-5348.

*EIS No. 890178*, Draft, AFS, WA, White Pass Ski Area Expansion, Special Use Permit, Wenatchee and Gifford Pinchot National Forests, Lewis and Yakima Counties, WA, Due: August 31, 1989, Contact: Phillip Glass (509) 662-4332.

*EIS No. 890179*, FSuppl, USA, PAC, TT, Johnston Atoll Chemical Agent Disposal System (JACADS) of Generated Liquid and Solid Waste, Additional Information, Special Use Permit, Pacific Ocean Trust Territory, Due: August 7, 1989, Contact: James Maragos (808) 438-2263.

*EIS No. 890180*, Final, FHW, TX, US 67 Bypass Construction, Near FM-1434 to Near Spur 102, Cleburne, Funding, Johnson County, TX, Due: August 6, 1989, Contact: William Hall (512) 482-5988.

*EIS No. 890181*, Draft, UAF, MA, OTIS Air National Guard Base Wastewater Treatment Facility, Continuing Operation, Barnstable County, MA, Due: August 21, 1989, Contact: Leroy Barnstable (301) 981-2464.

### Amended Notices

*EIS No. 890149*, Final, SFW, MA, RI, CT NH, VT, ME, New England Atlantic Salmon Restoration Activities 1989-

2021, Implementation, Connecticut, Pawcatuck, Merrimack, Saco, Union, Androscoggin, Kennebec, Penobscot, St. Croix, Meduxnekeag and Aroostook Rivers, CT, RI, MA, NH, VT and ME, Due: August 15, 1989, Contact: Dan Kimball (617) 965-5100. Published FR 6-23-89—Review period reestablished.

*EIS No. 890162*, Draft, AFS, PA, Allegheny Reservoir Motel-Restaurant Complex, Site Selection and Construction, Allegheny National Forest, Warren County, PA, Due: August 14, 1989, Contact: David Wright (814) 723-5150. Published FR 6-23-89—Review period reestablished.

Dated: July 3, 1989.

William D. Dickerson,

Deputy Director, Office of Federal Activities.

[FR Doc. 89-16027 Filed 7-6-89; 8:45 am]

BILLING CODE 6560-50-M

[ER-FRL-3612-6]

### Environmental Impact Statements and Regulations; Availability of EPA Comments

Availability of EPA comments prepared June 19, 1989 through June 23, 1989 pursuant to the Environmental Review Process (ERP), under section 309 of the Clean Air Act and section 102(2)(c) of the National Environmental Policy Act as amended. Requests for copies of EPA comments can be directed to the Office of Federal Activities at (202) 382-5076.

An explanation of the ratings assigned to draft environmental impact statements (EISs) was published in FR dated April 7, 1989 (54 FR 15006).

#### Draft EISs

ERP No. D-AFS-L65019-OR, Rating LO, Tepee Butte Fire Recovery Project, Implementation, August thru September 1988 Tepee Butte Fire Damage Recovery Land Management Plan, Hells Canyon National Recreation Area, Wallowa-Whitman National Forest, Wallowa County, OR.

*Summary:* EPA has no objections to the projects as described in the draft EIS. However, a fully developed monitoring plan for water quality and fish needs to be prepared and included in the final EIS.

ERP No. D-BOP-C81012-PR, Rating EC2, Guaynabo Metropolitan Detention Center, Construction and Operation, Implementation, PR.

*Summary:* EPA has concerns about the construction of the Metropolitan Detention Center because information



## **APPENDIX B**

### **ANALYSIS OF PUBLIC COMMENT WHITE PASS EXPANSION SCOPING**

On October 7, 1988, the USDA Forest Service asked for public comment on a proposal by the White Pass Company to expand the White Pass Ski Area. The proposal called for expansion of the existing ski area by the construction of three chair lifts and a mid-mountain lodge, largely on lands withdrawn from the Goat Rocks Wilderness by the 1984 Washington State Wilderness Act.

A letter asking the public to help identify important issues and alternatives to be considered in an Environmental Impact Statement (EIS) was sent to an initial mailing list of approximately 174 individuals, agencies and groups who had previously expressed an interest in this proposal.

In addition to the mailing, two public meetings were held to provide information and encourage response. One meeting was held in Yakima on November 9, 1988, and the other in Randle on November 10, 1988.

The information packet mailed out, provided at meetings, and handed out through other public contacts, included an outline of eight tentative alternatives and five potential issues to be addressed in the EIS. The packet also included a map showing the location of the tentative alternatives. A postage-paid response form was enclosed which indicated the closing date for comments as November 21, 1988.

#### **COMMENT RECEIVED**

A total of 200 written comments was received. Of these, 181 were from individuals. The remaining 19 came from various user groups, agencies and organizations.

They include:

- Washington Trails Association
- Washington State Department of Transportation
- PNW Ski Areas Association
- The Cascadians
- Wenatchee Mountain, Inc. (Mission Ridge)
- Washington State Department of Ecology

Ellensburg Cross-country Ski Club  
Yakima Indian Nation  
Washington Wilderness Coalition  
PNW Ski Association  
Sierra Club, Cascade Chapter  
The Mountaineers  
Washington State Department of Wildlife  
Greater Yakima Chamber of Commerce  
Federal Highway Administration  
Washington Environmental Council  
City of Yakima  
Pacific Crest Trail Advisory Council  
Blue Ribbon Coalition

Of the total 200 responses, 134 were from locations west and southwest of the Cascades (23 from Tacoma, 16 from Olympia, 16 from Chehalis, 13 from Centralia, 12 from Seattle, and 7 from Gig Harbor—one of these letters was signed by 31 people, 20 of whom noted Gig Harbor as their home address). A number of the letters from southwest Washington were from individuals who identified themselves as ski school students who travel to White Pass for lessons.

62 responses were from locations east of the Cascades (38 from Yakima). Only 3 responses were received from out of state (Portland, Oregon; Vancouver, British Columbia; and, Pocatello, Idaho), and one response had no return address or postmark.

#### **COMMENT ON POTENTIAL EXPANSION/ALTERNATIVES**

Of the 200 total respondents:

- 155 expressed support for some form of chair lift expansion at White Pass.
- 9 expressed support for Alternative #1 (no action).
- 3 expressed opposition to expansion in general.
- 2 expressed support for Alternative #8 (lodge/cross-country ski trails only).

Of the 155 who indicated support for expansion, 116 noted particular support for one of the tentative alternatives as outlined [below].

#### **ALTERNATIVE #7 – BUILD CHAIR LIFTS 5, 6 AND 7 AND MID-MOUNTAIN LODGE**

This alternative was favored by 99 respondents.

In general, folks who support this alternative seem to want “more of an already good thing.” Comments extolling the good family atmosphere and quality of the White Pass Ski Area are coupled with those criticizing the currently crowded ski slopes and long lift lines. The recreation demands of future generations is noted as an important reason for support of expansion.

Some respondents also felt this expansion alternative provides the best overall benefits and opportunities for all recreationists. They indicated that cross-country skiers would not suffer because the state offers such a wealth of terrain in many areas suited to that sport. They also felt that additional lifts would actually enhance cross-country skier access to backcountry areas.

Some individuals felt that expansion of downhill skiing is warranted because of the greater numbers of alpine skiers who use the White Pass area as opposed to the smaller numbers of nordic skiers.

Respondents also noted the geographic and monetary limitations for development of new downhill ski areas in the state as reasons to expand at existing sites. Several respondents mentioned that expansion would provide the opportunity for White Pass to become a destination ski resort.

In addition, respondents pointed out the potential for an expanded ski area to keep recreationists and their dollars in the state, while also providing an attractive option to recreationists from out-of-state. They felt that local communities would benefit from recreation-generated revenue and an increase in job availability.

Several respondents also felt that ski area expansion was the intent of Congress when the decision was made to delete a portion of the Goat Rocks Wilderness from Wilderness classification.

**ALTERNATIVE #5 – BUILD CHAIR LIFTS 5 AND 7 AND MID-MOUNTAIN LODGE**

This alternative was favored by 6 respondents.

Support comments noted that this alternative seemed a reasonable choice at less cost for both downhill and cross-country skiers.

One individual felt that this alternative or Alternative #6 offers the most range of activity to the largest number and variety of people. This same respondent would also be in favor of Alternative #7 to serve greater numbers and levels of alpine skiers.

Two respondents felt it was important to preserve the area west of lift #6 from development to provide safe terrain for cross-country skiing.

**ALTERNATIVE #4 – BUILD CHAIR LIFTS 5 AND 6 AND MID-MOUNTAIN LODGE**

This alternative was favored by 4 respondents.

Respondents who favored this alternative indicated that both alpine and nordic skiers would benefit from the increase in terrain available.

It was felt by one individual that chair #5 needs chair #6 to complement each other to access good skiing in the entire area, thereby justifying the expense of development.

Another respondent would support the addition of chair #7 later if implementation of this alternative does not markedly change the ecological balance in the area.



**ALTERNATIVE #2 – BUILD CHAIR LIFT 7 AND MID-MOUNTAIN LODGE**

This alternative was favored by 3 respondents.

Those who expressed support for this alternative felt it would have the least damaging ecological impact on the Hogback area and cross-country skiing, and it would still provide for some expansion of the area.

One respondent noted that if only chair #7 is built, the need for a mid-mountain lodge appears questionable.

**ALTERNATIVE #6 – BUILD CHAIR LIFTS 6 AND 7 AND MID-MOUNTAIN LODGE**

This alternative was favored by 2 respondents.

One respondent expressed support for this alternative because chair #7 has good vertical elevation and chair #5 is too flat.

The other respondent noted that this alternative would provide more terrain for various levels of skiers and would draw more people to White Pass who might otherwise go elsewhere. This individual would also support Alternative #5 for the same reasons.

**ALTERNATIVE #2 – BUILD CHAIR LIFT 5 AND MID-MOUNTAIN LODGE**

This alternative was favored by 2 respondents.

One respondent indicated support for this alternative because it would discourage uphill travel for the unprepared alpine skier while opening up desired terrain for the usually better prepared and equipped nordic telemark skier.

The other respondent felt that this alternative would be the least disturbing to the fragile environment of the Goat Rocks Wilderness but suggested that lift #5 be shortened to terminate at the 6,000-foot level.

**GENERAL SUPPORT FOR CHAIR LIFT EXPANSION**

There were 39 respondents who expressed support for some form of chair lift expansion but did not specify a favored alternative.

Reason for support given by these individuals closely mirror those given by proponents of Alternative #7. It is also interesting to note that 12 of the respondents in this category identified themselves as participants in the ski school at White Pass. A discussion of reasons for ski expansion support follows:

Those who identified themselves as ski school participants (either as instructors or students) feel expansion is necessary to the continued quality of ski school instruction at White Pass. They note that expansion would ease the crowding on slopes and open up new and more varied ski runs to experience.

In general, respondents indicated that expansion is needed in order to improve downhill skiing opportunities for current as well as future users. They noted that ski runs are currently limiting, and the demand for more and better runs is apparent. They noted that downhill and cross-country skiers should be able to continue to share the area as in the past.

There were four separate but identical letters which stated that development of Hogback Ridge would be in the best interest of the public and that special interest groups should not control public lands. These letters noted that 100,000 tickets were sold for round-trip lift use last year [1987-88] as compared to 2,000 one-way lift tickets. They felt this represented about a two percent usage by cross-country skiers, which would not warrant control of the land over the majority of users.

Several respondents also noted the positive economic impact that ski area expansion could have on local communities and the county, in bringing in additional revenue and strengthening the tourist industry.

## **NON-DEVELOPMENT COMMENT**

### **ALTERNATIVE #1 – NO ACTION**

This alternative was favored by 9 respondents.

Generally, those who expressed support for this alternative felt that the Hogback area was unique from a cross-country ski perspective and that it and the adjacent Wilderness area would be jeopardized by any proposed expansion.

Other concerns expressed about development were for hazards to displaced cross-country skiers, endangerment and degradation of cultural and spiritual places, and ecological and wildlife habitat damage. It was also noted that the other tentative alternatives were unacceptable.

### **GENERAL OPPOSITION TO CHAIR LIFT EXPANSION**

There were 3 respondents who expressed general opposition to chair lift expansion.

One respondent expressed concern about ecological damage as a result of development, and felt that Hogback Basin should be left as it is because it is too valuable for cross-country skiing, and this expansion could be a first step toward future expansion into other areas like Miriam Lake Basin. This individual also felt that expansion would result in higher lift ticket prices that would make the area too expensive for family skiing.

Another individual felt that improvements should be made within the existing ski area boundary and did not want tax dollars to pay for expansion. This person also felt that White Pass would be making an investment that was beyond what they could expect in return.

A third respondent questioned the suitability of the terrain in the Hogback area for lift-served skiing. It was noted that the slopes are too gentle and must be packed, and there might be problems with windswept snow near the summit. It was also felt that a lift to Hogback will do nothing to solve the problem of lift lines for Pigtail Peak and the problem of the lower rock cliff band.

### **ALTERNATIVE #8 – CONSTRUCT MID-MOUNTAIN LODGE AND CROSS-COUNTRY SKI TRAILS IN HOGBACK BASIN**

This alternative was favored by 2 respondents.

One respondent felt that the other alternatives seemed more restrictive and thought that, under Alternative #8, skiing could be advanced further into the spring/summer season by using only the upper slopes.

The other individual thought this alternative needed consideration because it would help meet the growing demand for cross-country skiing facilities in the state. They also felt it would complement the existing trail system around Leech lake and provide cross-country skiing opportunities earlier and later in the season.

## **PREFERRED NEW ALTERNATIVES**

Eleven respondents offered a total of 15 alternatives which are summarized as follows:

### **"NO-DEVELOPMENT-OF-HOGBACK" ALTERNATIVE**

There are four reasons why this alternative should be considered. Hogback is unique from a cross-country skiing standpoint and is one of the finest backcountry winter recreation areas in the state; a new alternative could still allow expansion into areas outside Hogback Basin.

Cultural significance of Hogback Basin: Known as "Kamiakin's Place" to the Yakima Indian Nation, during the Yakima Indian War of the 1850's, Chief Kamiakin used Hogback Basin as a refuge from the U.S. Army, and the area contains many burial sites and old campsites. Ground-disturbing activities could harm cultural values and infringe the tribe's treaty rights when land was ceded to the U.S. in 1855.

Development of Hogback could lead to further deletion of land from Goat Rocks Wilderness. General Manager of White Pass has already alluded to this possibility in a recent Longview Daily News interview. The EIS should consider whether development of Hogback Basin would create a strong demand for further deletions of Wilderness acreage.

Impact to the Pacific Crest National Scenic Trail (PCT) would be in conflict with the National Trails Acts of 1968 which prohibits development in the vicinity of a National Scenic Trail when it is incompatible with the purpose for which the trail was established. The EIS should consider whether construction of mechanized lifts, roads and other ground-disturbing activities are consistent with current scenery and solitude available on that segment of the PCT.

### **EXPANSION OF WHITE PASS SKI AREA OUTSIDE OF HOGBACK BASIN**

This alternative would preclude expansion of developed facilities within the pre-1984 boundaries of Goat Rocks Wilderness.

### **RECLASSIFY AS WILDERNESS THE AREA WITHDRAWN**

There is a demonstrated lack of knowledge by the Forest Service and White Pass as regards the history of environmental legislation pertaining to this subject.

### **BUILD NEW SKI LIFTS NORTH OF U.S. 12**

### **BUILD MID-MOUNTAIN LODGE AND NEW SKI LIFTS NORTH OF U.S. 12**

### **BUILD MID-MOUNTAIN LODGE. OPERATE LIMITED SNOW CAT SERVICE TO HOGBACK RIDGE**

### **BUILD MID-MOUNTAIN LODGE. BUILD NEW SKI LIFTS NORTH OF U.S. 12. OPERATE LIMITED SNOW CAT SERVICE TO HOGBACK RIDGE**

**BUILD NEW LIFTS EAST OF EXISTING LIFTS**

**DEVELOPMENT OF CHAIR LIFT #7 AND CONSTRUCTION OF CROSS-COUNTRY SKI TRAILS IN THE UPPER HOGBACK BASIN**

**BUILD MID-MOUNTAIN LODGE AND NEW SKI LIFTS NORTH OF U.S. 12**

**AN ALTERNATIVE THAT OPENS UP "NEW" TERRAIN FOR SKIING**

This alternative would include thinning trees within the existing permit area to increase snowpack and remove hazards, a few new loops on the nordic track, a nordic base lodge, new parking lots, an improved septic system, and construction of lift #7 and associated ski runs. It would provide additional skiing for both downhill and track skiers without reducing the backcountry skiing opportunities. Preliminary alternatives don't present much of a range; they all address additional ski lifts and the same mid-mountain lodge.

**AN ALTERNATIVE THAT ALLOWS BACKCOUNTRY SKIERS TO HAVE A LARGE AREA FAR AWAY FROM THE DEVELOPED SKI FACILITIES**

Consider alternatives that have all new facilities east of the present ski area and/or entirely within the present ski area boundaries.

**A LIFT DOWN TO KNUPPENBURG LAKE**

This would meet most of the White Pass Co. requirements. Snow quality at White Pass is not suitable for destination type ski area; expansion along Hogback Ridge would impact the PCT views; and this corridor is too unique and valuable to sacrifice to development.

The upper Hogback Ridge topography is not suitable for downhill skiing. It is not steep enough and any cutting of timber would change the character of the slope. Snow grooming would change delicate ground cover vegetation, and low-lying heather along ridgetop could not withstand compaction from grooming and concentrated skiing. Once lost, it would be difficult to replace heather because area is an exposed high-elevation site vulnerable to any impacts with growing season measured in weeks only.

Soils on Hogback Ridge should not withstand impacts of construction, lodges, or roads. Any lift along the PCT corridor would eventually result in a road of some kind. The soils in the area probably could not support a sewage disposal system.

Goat Rocks Wilderness is crowded in on all sides by development and logging activity now, and the upper chair lifts would further impact the view and experience of Wilderness users. Winter use in Wilderness has increased dramatically since present chair lifts were built, and use will continue to grow at an inappropriate rate if upper lifts are constructed. It is not valid that cross-country skiers and snowshoers access the Hogback Ridge area via chair lift and therefore would not be concerned about further development.

**BUILD CHAIRS #6 AND #7**

Establish the top of Chair 6 low enough to eliminate conflict with cross-country skiers going to Hogback, as well as limit its visibility from Wilderness areas and the PCT. This would also provide expansion to serve both intermediate and downhill skiers. Beginning skiers are better off remaining closer to lodge facilities.

### DESTINATION SKI RESORT

If White Pass desires to become a regional ski area, there should be an alternative that maximizes that possibility by describing what a regional ski area looks like and the potential for White Pass to provide it without constraints (Wilderness, overnight lodging, policy, etc.). Include the necessary infrastructure (overnight accommodations—Packwood, Rimrock?), and a discussion of whether the necessary skier facilities there would make an effective four-season resort.

### NO MID-MOUNTAIN LODGE

There should be some development of alternatives that don't include a mid-mountain lodge.

## **PUBLIC COMMENT ON THE FIVE TENTATIVE ISSUES**

### UNIQUENESS OF THE AREA

A total of 36 individuals commented on this issue. Of that number, 12 commented that the area is unique from a cross-country skiing standpoint, and felt that development would ruin that opportunity.

Another 13 respondents felt that the area is unique because of its potential as a lift-served downhill ski area and would like to see opportunity for that.

Other general comments were offered about the low use of the area by cross-country skiers and the possibility of its continued shared use by both kinds of skiers, even with development, if there is a well-managed trail control program by White Pass Company.

### EFFECTS UPON ADJACENT WILDERNESS VALUES

A total of 39 individuals commented on this issue.

Of these, 14 respondents expressed a concern that values such as scenic views, the PCT, ecology of the area, and solitude, will be adversely affected by development. Several respondents also questioned whether the chair lifts would run in the summer season. If so, they felt it would be a major negative impact on Wilderness users, and on the Wilderness resource.

Another 17 individuals felt that effects on Wilderness would be minimal because of the small amount of land included in the development as opposed to the magnitude of total Wilderness area. They also noted that not allowing the lifts to run in summer would avoid detrimental effects in the off-season. Several of these individuals felt that White Pass Company has done a good job in the past of managing lands adjacent to Wilderness and would continue to do so if expansion took place.

### BENEFITS TO THE RECREATING PUBLIC

A total of 38 respondents commented on this issue.

Of these, 20 individuals felt that expansion of the ski area would provide significant benefits to the recreating public. They noted that expansion would serve a growing population of both downhill and cross-country skiers and keep skiers from going to other ski areas.

Five individuals simply stated that this is an important issue which should be considered carefully in the EIS. Several other individuals expressed a desire for more study of actual skier demand and needs as well as the suitability of the terrain in the Hogback area for development.

One respondent thought a better benefit to the public would be to increase lift capacity within the existing boundaries using high speed quad chair lifts, without destroying the unique Wilderness experience for cross-country skiers.

Another respondent, the Pacific NW Ski Areas Association, called for an inventory of downhill terrain as compared with existing and potential inventory of cross-country ski terrain. They also felt it was necessary to consider the desirability and feasibility of expanding alpine skiing areas in the state as compared with developing new alpine ski areas. The demand for alpine terrain as opposed to cross-country terrain at White Pass also needs study, they noted.

#### HAZARDS TO DISPLACED CROSS-COUNTRY SKIERS

A total of 30 respondents commented on this issue.

Of these, 11 individuals don't see this as a problem issue. They mention that skiers will go wherever the snow is best for their sport, that there is still plenty of cross-country terrain to choose from, and that the development should actually add a level of safety through management of the area by White Pass Company.

Nine individuals expressed a concern that cross-country skiers would be displaced into more hazardous terrain.

Four respondents commented that this hazard should be weighed against the current hazards to downhill skiers who ski off established runs to find good snow. They felt that cross-country folks should still be able to go into areas that are safe and have been used by them for years.

#### RESOURCE CAPABILITY

A total of 28 respondents commented on this issue.

Of these, 19 individuals expressed concern about potential detrimental effects to the resources as a result of development. They felt this issue needed careful consideration as to impacts on soil, water quality and quantity, and sensitive plants and animals. Some noted that Hogback Mountain is a particularly fragile area.

One individual felt that most lift tower construction would cause only minimal damage, but that construction of the lift from Knuppenburg Lake would cause substantial damage to the terrain.

Four individuals felt that current technology and the demonstrated good past management practices will mitigate any negative impacts on resources.

Some respondents provided suggestions to limit resource impacts such as the possibility of placing lift towers by helicopters to limit road construction, and not allowing chair lift use during the summer.

## **NEW ISSUES IDENTIFIED BY THE PUBLIC**

### **SEWAGE TREATMENT**

A total of 9 respondents felt that sewage treatment is an issue that should be addressed in the EIS. There was some feeling that the current situation at White Pass is inadequate and a concern that it could worsen if use at the site increases.

The response from the Dept. of Ecology noted a need to discuss the proposed methods of wastewater treatment and disposal in the EIS as well as a need to identify factors such as potential numbers of users and impact of water withdrawal on stream flows.

### **WILDLIFE**

A total of 5 respondents felt there should be a wildlife issue addressed in the EIS. The response from the Washington State Dept. of Wildlife outlined concerns about impacts on big game which uses the Hogback area; impacts on old-growth-dependent species, particularly spotted owls; impacts of summer use of chair lifts on wildlife; and impacts of increased sewage system needs on the water quality of Leech Lake, its tributaries, and fishery values. They called for detailed analysis of these concerns in the EIS.

One respondent felt the development proposal would not have a significant impact on wildlife, and that this should be presented in the EIS.

### **ANTICIPATED SKIER NEEDS**

A total of 6 respondents felt that anticipated skier needs warranted study in the EIS. Several individuals thought use trends should be studied to determine actual skier needs, and questioned whether White Pass could actually become a destination ski resort. One respondent would like to see the possibility of additional lodges and low-cost overnight accommodations studied in the EIS.

### **ECONOMICS**

A total of 15 respondents mentioned economics as a potential EIS issue. Of these, most individuals felt that expansion would enhance local and regional economies.

One respondent thought each alternative should be evaluated against its relative impact on the local economy.

Three respondents felt there would be negative economic impacts as a result of development. There was concern for where the extra skiers would come from, if cross-country skier dollars would be lost, and if construction of lifts into the Hogback area was economically feasible.

The response from the Pacific NW Ski Areas Association felt that the comparative markets for alpine skiing and for cross-country skiing in the state should be considered. They also felt consideration should be given to the comparative investment and risk in the development of alpine ski facilities and the development of cross-country skiing. The comparative benefits in the form of employment and taxes to the county and state from the alpine ski development as compared with the cross-country ski development should also be studied, they noted.

### APPEARANCE OF SKI AREA

Three respondents noted that the appearance of the ski area should be an issue considered in the EIS. The use of the right colors and a building that is not just a big, gaudy lodge are important considerations so that there is minimum visual impact on the surroundings.

### TRAFFIC AND PARKING

A total of 20 respondents mentioned traffic and parking as a potential issue. Of these, 16 individuals felt that increased parking facilities is a need that should be addressed in the EIS. The Washington State Dept. of Transportation commented on the possible need for improved parking and left-turn channelization should traffic on Highway 12 increase as a result of ski area expansion.

### MITIGATION MEASURES

Two respondents noted that there is a need to address mitigation measures in the EIS. One respondent cited the Ninth Circuit Court decisions, e.g., Methow Valley Citizens Council v. Regional Forester, in which it was directed that any EIS must consider in detail the ability of proposed mitigation measures to actually alleviate anticipated adverse effects. It further calls for full compliance with NEPA's requirement to assess in detail the project's impacts, alternatives, and mitigation measures.

The other respondent indicated interest in what might constitute appropriate mitigation measures in order to reduce or minimize effects of proposed development.

### LOCATION OF MID-MOUNTAIN LODGE

Two respondents felt that the location of the mid-mountain lodge was an issue to be studied. One individual suggested locating it higher on the mountain, closer to existing chairs 1 and 2 to make it more convenient for winter use and open up the possibility of summer use.

The other respondent thought the mid-mountain lodge should be built closer to chair 7 if the proposed chairs 6 and 7 are built. Consideration should also be given to where snow grooming equipment will be housed in relation to the mid-mountain lodge location.

### MISCELLANEOUS ISSUES

Issues mentioned by one individual each include the following:

- Use of the area by handicapped skiers should be addressed; without mechanical means this group of users cannot enjoy the sport and the mountains.
- The possibility of warming huts should be studied.
- Consideration should be given to the power demand this proposal will create; will this and additional skiers have a negative effect on energy supplies?
- Public Information; scoping meetings should be held in Olympia, Centralia, Portland/Vancouver, and Seattle. When the EIS is printed, have open house meetings in those same cities.



**ISSUES OF THE GIFFORD PINCHOT NATIONAL FOREST/PACKWOOD  
RANGER DISTRICT**

**PRESENT IMPACTS TO WILDERNESS TO CONSIDER IN EIS  
DEVELOPMENT**

What is current use of PCT from Hwy 12 south to Wilderness boundary? Summer study may be required for documentation of this.

What is current use of summer chair lift by hikers going into Goat Rocks Wilderness? How does policy of discounted prices for rides for large parties conflict with party size limits on adjacent Wilderness? Documentation of this use should be included even if expansion proposals do not include additional summer use of chair lifts.

Does the current amount of summer and winter use in Wilderness adjacent to the Ski Area meet guidelines for number of encounters under its Wilderness Recreation Opportunity Spectrum assignment?

What are impacts of summer programs hosted by White Pass on the Wilderness—mountain bike races, running clinics, bluegrass concerts and free chair lift rides? Are aware of previous violations; Naches RD should be able to provide documentation.

Why was a sign saying “Leaving Goat Rocks Wilderness”: required a few summers back on the PCT adjacent to the new Wilderness boundary? It was a unique sign that may give an indication of how summer users reacted to encountering the Ski Area as they hiked the PCT.

**FUTURE IMPACTS TO WILDERNESS TO CONSIDER IN EIS  
DEVELOPMENT:**

Social impacts to PCT users can only be understood if the ID Team takes the hike leading away from the highway, into open meadows, and out to a ridge where the orange poles of future tower locations are suddenly encountered.

Full discussion of what is proposed for the mid-mountain lodge is necessary. Visual impact to Goat Rocks or Wm. O. Douglas Wildernesses would vary much with materials used for construction, building design and colors.

Summer events hosted by White Pass could change under expansion plans and should be displayed in DEIS. Need complete discussion of Wilderness/Ski Area coexistence. Need to look closely at summer use—visitor demand needs discussion and should include how much summer use would be necessary for development of particular facilities (if more mountain bike trails are proposed, how many users would be needed to be financially successful?) These specifics will assist in evaluation of impact potential.

A legal survey and posting of Goat Rocks Wilderness boundary is needed in permittee’s area. may be an opportunity for shared costs. If basins further in the Goat Rocks Wilderness are looked at for potential backcountry skiing, will the DEIS discuss waiving party size limits,. number of group encounter standards, and avalanche control methods for this area of Wilderness?

## **COMMENTS BY LOCAL, STATE AND FEDERAL OFFICIALS**

### **GREATER YAKIMA CHAMBER OF COMMERCE**

The Board of Directors urged approval of the proposed White Pass Ski Area expansion, citing that the development will not only be a major addition to the area, but will have a long-term positive economic impact on Yakima County's tourism industry. They praised the operators of White Pass Ski Area for their great care for the environment over the years and noted that the area is a pleasant summer attraction as well. They feel the expansion will add overnight stays in Yakima and surrounding areas, positively impacting the winter economy, and will open up new opportunities for the Puget Sound skier to have a closer overnight ski area for use.

### **CITY OF YAKIMA**

The Yakima City Council expressed support for the concept of an expanded White Pass Ski Area as proposed by White Pass Co. They feel an expanded facility will better serve the winter recreation needs of Yakima residents as well as contribute significantly to Yakima's tourism potential. A larger ski area would have a long-term positive economic impact upon the City of Yakima and Yakima County. They suggest that the EIS consider a wide range of recreational uses and opportunities consistent with maintenance of environmental quality.

### **CONFEDERATED TRIBES AND BANDS, YAKIMA INDIAN NATION**

The Yakima nation favors a "No Action" alternative due to their concerns for both cultural/spiritual places and wildlife and its habitat within the proposed expansion area which could be endangered or degraded if the action were allowed to proceed.

### **STATE OF WASHINGTON DEPARTMENT OF ECOLOGY**

The Dept. had three areas of comment which included a request that the EIS discuss the proposed method of domestic wastewater treatment and disposal; the water quality impact to streams and lakes in the area and immediately downstream from the project be evaluated; and, the EIS identify the increased numbers of users, the current water supply capability, the ability of the water supply to serve additional users, the impact of additional withdrawal of water on the base flows of streams in the area, and the effect on the natural environment of these streams. They also noted that cross-country skiers would place the least demand on the water supply.

### **STATE OF WASHINGTON DEPARTMENT OF WILDLIFE**

The Dept. of Wildlife commented on the fact that the project area is used by big game in the snow-free season and they suspect the area also provides habitat for old-growth-dependent species such as the pine martin. They request the DEIS describe how the proposal will effect old growth forest habitat and how much of that habitat will be removed and/or fragmented.

They also recommend that the area be resurveyed for spotted owl habitation, and that if the results are not available at the time of DEIS publication, the DEIS should discuss how the proposal would be altered should the presence of spotted owls be confirmed.

Concern was expressed about potential summer use of ski lifts. They would like the DEIS to estimate the amount of summer use expected, what measures will be taken to mitigate impacts to the fragile alpine environment of the Hogback Mountain summit and ridge crests, and describe how impacts of summer use will be monitored.

The adequacy of the sewage system to handle additional numbers of people was also of interest to the Dept. They expressed a desire to see a discussion of this and the impacts to water quality of Leech Lake and its tributaries in the DEIS. If facilities are developed at the base of proposed Lift #7, the DEIS should contain similar information regarding Millridge Creek.

They also suggested that the DEIS should contain a discussion of the probable extent and impacts of development expected to occur as a result of successful implementation of the proposal.

#### WASHINGTON STATE DEPARTMENT OF TRANSPORTATION

This agency indicated a primary concern for the effect of additional traffic on Highway 12. They note that, as a minimum, improved parking and left turn channelization will probably be required. They indicate an interest in providing more specific comments when a more definitive proposal is available.

#### U.S. DEPARTMENT OF TRANSPORTATION/FEDERAL HIGHWAY ADMINISTRATION

This department's response generally expressed appreciation at being notified of the project proposal. They said there are no federal highway funds involved in the proposal and they have no comments.

#### **PETITIONS RECEIVED**

In addition to the 200 individual written responses received as public comment on the White Pass Company proposal to expand the White Pass Ski Area, two petitions were received, both signed by individuals in the Yakima area and both indicating support for Alternative #7. One petition contained 335 signatures, the other, nine.

Of the petition with 335 signatures, the reasons for support of Alternative #7 are summarized:

#### UNIQUENESS OF THE AREA

The petition indicated that there are three types of cross-country ski techniques suited to terrain within the existing Ski Area and the proposed expansion area. With regard to use of the Hogback Basin area, it was felt that only the cross-country touring type skier uses this area, and that those users comprise only 10 to 20 percent of cross-country skiers. It was further noted that if this type of skier required solitude, seclusion and safety, there are several areas available elsewhere in the state that are comparable to Hogback Basin.

The petition also stated that, upon contacting a number of developed ski areas with a cross-country skiing component, it was found that there "was no evidence of any user conflict or safety compromise with mixed skiers sharing the ski areas, slopes and terrain."

Additionally, it was felt that the expansion would actually enhance the experience and safety of skiers employing most all techniques. There will be more area for all skiers to enjoy, and a larger area means skiers can spread out for increased safety, and benefit from ski patrol access in case assistance is needed.

Also mentioned was the possibility of having to discontinue special lower one-way ticket prices for cross-country skier use of the chair lifts if the expansion cannot take place. It was felt the practice might not be cost-effective, and full-price tickets for cross-country skiers would be the alternative.

#### OTHER ALTERNATIVES

The petition also commented on Alternatives #1 and #8. It was felt that backcountry skiers in Hogback Basin historically backpack their food into the area and have no need for the existing or proposed lodge. It was also noted that construction of a mid-mountain lodge and maintenance of cross-country ski trails would not be cost-effective because the downhill, telemarker, and nordic skiers already have a new expanded main lodge and existing runs and trails to use.

#### SMALLER PETITION

Of the petition with nine signatures, the reasons for support of Alternative #7 are summarized:

It was felt that winter use of the expanded area served by chair lifts would not cause adverse impact to soils and terrain. In response to concerns about soil damage to Knuppenburg Lake, it was felt that skier use would be controlled and directed away from the lake.

The petition also noted that the mere fact of additional ski lifts in the expanded area would serve to limit use of the area by a variety of summer season recreationists who it was felt tend to have a negative impact on the environment.

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## APPENDIX C

### LIST OF AGENCIES, ORGANIZATIONS AND PERSONS TO WHOM COPIES ARE SENT

#### FEDERAL AGENCIES

Advisory Council on Historic Preservation	Fed. Energy Regulatory Comm., Office of Hydro Lic.
Agriculture, U.S. Dept. of, Animal & Plant Health Inspection Serv.	Fed. Energy Regulatory Comm., Office of Pipeline & Prod. Reg.
Agriculture, U.S. Dept. of, Office of Equal Opportunity	Federal Aviation Administration, NW Region
Agriculture, U.S. Dept. of, Rural Electrification Admin., Env. Pol.	Federal Highway Administration, Region 10
Agriculture, U.S. Dept. of, Rural Electrification, Asst. Admin. for Management	General Services Administration, Environmental Staff
Agriculture, U.S. Dept. of, Soil Conservation Service	Gifford Pinchot National Forest
Commerce, U.S. Dept. of, National Marine Fisheries Svc.	Health & Human Serv., U.S. Dept., Special Prgms Coord.
Commerce, U.S. Dept. of, NOAA, Ecology & Conservation	Housing & Urban Dev., U.S. Dept., Region I
Defense, U.S. Dept. of, Chief of Navy Operations	Housing & Urban Dev., U.S. Dept., Region II
Defense, U.S. Dept. of, Dep. Asst. Sec. of Defense	Housing & Urban Dev., U.S. Dept., Region III
Defense, U.S. Dept. of, Explosives Safety Board	Housing & Urban Dev., U.S. Dept., Region IV
Defense, U.S. Dept. of, Sec. of Air Force	Housing & Urban Dev., U.S. Dept., Region IX
Defense, U.S. Dept. of, US Army Eng. & Housing Sup. Ctr.	Housing & Urban Dev., U.S. Dept., Region V
Delaware River Basins Commission	Housing & Urban Dev., U.S. Dept., Region VI
Energy, U.S. Dept. of	Housing & Urban Dev., U.S. Dept., Region VII
Environmental Protection Agency, EIS Review Coord.	Housing & Urban Dev., U.S. Dept., Region VIII
Environmental Protection Agency, Federal Agency Liaison	Housing & Urban Dev., U.S. Dept., Region X
Fed. Energy Regulatory Comm., Genl Counsel, Rulemaking & Leg.	Interior, U.S. Department of, Environmental Project. Review
	Interstate Commerce Commission, Secy of Energy & Environment
	Labor, U.S. Department of, Asst. Sec. for Mine Safety
	Labor, U.S. Department of, OSHA
	Mt. Baker Ranger District
	Mt. Baker-Snoqualmie National Forest
	Mt. Hood National Forest, Gochnour, Doug

Naches Ranger District, Daryl Gusey  
Naches Ranger District, Don Rotell  
Okanogan National Forest  
Packwood Ranger District  
Public Health Service, Centers for Disease Control  
Randle Ranger District  
Representative Sid Morrison  
Soil Conservation Service, State Conservationist  
Tonasket Ranger District, Bill Terrill  
Transportation, U.S. Dept. of, Coast Guard

Transportation, U.S. Dept. of, Office of Pipeline Safety  
Transportation, U.S. Dept. of, Pol. & Internatl Aff., Env. Div.  
USD of Interior - Environmental  
USFS Region 6, Kent Churchill  
USFS Region 6, Lyle Laverty  
USFS Region 6, Richard Carkin  
Wenatchee National Forest  
Wildlife, Dept. of  
Winthrop Ranger District

## **INDIAN TRIBAL AGENCIES**

Yakima Indian Nation Confederated Tribes/Bands  
Yakima Indian Nation, Carroll Palmer

Cowlitz Tribe

## **WASHINGTON STATE AGENCIES**

Centralia College, Dean Hickson  
Interagency Committee for Outdoor Recreation  
University of Washington  
Washington Dept. of Game, Bob Lucas  
Washington Dept. of Wildlife, Gale Blomstream  
Washington Dept. of Wildlife, William H. Nelson  
Washington Environmental Council, David Bricklin  
Washington Environmental Council, Susan Robinson  
Washington State Dept. of WL, Ted Clausing

Washington State Governor's Office  
Washington State University Library  
Washington State, Dept of Transportation  
Washington State, Dept. of Transportation, Dist. 4  
Washington State, Dept. of Commerce & Econ. Development  
Washington State, Dept. of Ecology  
Washington State, Dept. of Natural Resources  
Washington State, Dept. of Tourism  
Washington State, Winter Recreation Comm.

## **LOCAL AGENCIES**

Documents Department, the Librarian  
Lewis County Commissioners  
Lewis County Health District, Environmental Health  
Lewis County Planner  
Lewis County Public Works  
Lewis County Sheriff  
Morton High School, Ross Jones  
Naches, Mayor of  
Olympia Timberland Library  
Packwood City Library  
Packwood, Mayor of  
Randle, Mayor of  
Seattle City Library

Southeast Yakima Community Ctr  
Yakima County Commissioners  
Yakima County Planner  
Yakima County Public Works Dept.  
Yakima County Sheriff  
Yakima Regional Library  
Yakima, City of

## **ORGANIZATIONS**

<p>American Ski Industries          Blue Ribbon Coalition          Cascadians, Phil Johnson          Cascadians, Stan Isley          Cascadians, The, David Hagen, President          Greater Yakima Cham. of Commerce          Hogback Basin Preservation Asso.          Longview Chamber of Commerce          Mountaineer, The, Bellingham Branch          Mountaineer, The, Bev Dahlin          Mountaineer, The, Everett Branch          Mountaineer, The, Headquarters          Mountaineer, The, Olympia Branch          Mountaineer, The, Tacoma Branch          Mountaineers, The, Carsten Lien, President          Mt. Spokane Skiing Corp.          National Audubon Society, Helen Engle, Director          National Ski Areas Association          North Cascades Conserv. Council          Pacific Crest Trails Assn., Louis Marshall          Pacific Crest Trails Association</p>	<p>Packwood Chamber of Commerce          PCT Advisory Council, Howard Millan          PNW Ski Areas Assn., Mel Borgersen, President          PNW Ski Assn., C.J. Arvidson, V.P.          Randle Chamber of Commerce          Sierra Club          Sierra Club, Cascade Chapter          United Ski Industries Assn.          USSA/PNSA, Charlie Arvidson          Washington Ski Touring Club          Washington State Ski Industries          Washington Trails Assn., Susan Anderson,          Exec. Director          Washington Trails Assn., The Signpost          Washington Wilderness Coalition, Doug Pauly,          President          Wilderness Society, The          Wings of Conservation, The          Yakima Chamber of Commerce          Yakima Valley Audubon Society</p>
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## **INDIVIDUALS**

<p>Abbenhaus, James I., M.D.          Abbenhaus, Jamie E.          Abbenhaus, Nancy S.          Ables, Chris          Ables, John          Ables, John P.          Acord, Glen C.          Adams, Martin          Adkison, John W., M.D.          Adkisson, B.          Aganew, Jess          Aldag, Robert          Alexander, Sally          Allan, Peggy          Allison, Dave          Alpentel          American Ski Federation, Joe          Prendengast          Anderson          Anderson, Debbie          Anderson, Graham</p>	<p>Anderson, Lilly Lee          Anderson, Mr. &amp; Mrs. Robert          Anderson, Roy W.          Andrews, Scott          Arbuckle, Audrey          Arneson, Arnie          Arnold, Fred &amp; Phyllis          Ashenfelter, Pete and Nancy          Aylen, Robert J.          Bachhuber, Stephen R.          Baer, Duncan T., M.D.          Bagley, Jr., M.D., Charles M.          Bailie, Robert E.          Bainter, Marilyn          Baldwin, Ed          Ball, Susie          Balsenfer, Karie          Bank of California, The          Bardy, M.D., Gust          Barry, Brian          Bartley, Jeri</p>	<p>Beard, Arne          Beard, Casey          Becker, Virginia          Bedard, Val          Beiber, Jeremy          Bell, Jon A.          Benn, Martha          Bennett, Jon          Bennett, Nelson          Bennison, Dick          Bennison, Pete          Benson, David A.          Benson, Norma          Berggren, Elizabeth M.          Berndt, Karen          Berndt, Stanley          Bigas, Mr. &amp; Mrs. J.C.          Birkeland, Robert W.          Bjornstad, Bruce          Blakley, Ann          Blakley, Nigel</p>
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Blanchard, Kathleen  
Blilie, J. W.  
Bocek, Dr. and Mrs. Max  
Bocek, M.D., Nicola  
Bocek-Strader, Rosemary  
Boone, Stephen K.  
Bopha, Ben  
Boyd, Dave  
Boyd, Frank E.  
Boyd, M.D., Thomas E.  
Brack, Joyce  
Branch, D.D.S., David W.  
Brassington, Andy  
Brauner, Kalman  
Brazil, Jim  
Brinton, Russ  
Brookings, Deborah  
Brooks, R. J.  
Brosio, James A.  
Brown, Deborah S.  
Brown, Garry & Pam  
Brown, Rodney L., Jr.  
Bruce, Robert  
Bruhn, George & Lois  
Brussington, Andy  
Buckmiller, Ron  
Buehler, Michael, D.D.S.  
Burch, Ilse  
Burch, Terrill  
Burdick, M.D., Penny I.  
Burgess, Rohn  
Burke, James E.  
Burke, Kelly  
Burns, Ed and Wendy  
Burr, Eric  
Burr, Eric  
Busby, Scott  
Bushnag, A.  
Byars, Mr. and Mrs. John R.  
Cadd, Polly B.  
Cahill, J.  
Campbell, Doug  
Carlson, Christina  
Carlson, Coralie K.  
Carlson, Erik  
Carpenter, L.  
Carrier, Rodney  
Carroll, Dorothy J.  
Cascadians, The  
Cash, Larry

Cash, Ronald B.  
Cassatt, Jeannie  
Casseday, Jack A.  
Castle, Ted  
Cayce, Joan C.  
Cecil, Charles A.  
Cecil, Jerry L.  
Cellarius, Barbara A.  
Chaiten, Joan  
Cheatle, Carole  
Chesdro, Rolande  
Chickman, Sue  
Chilcote, W. J.  
Chitwood, Ceonu  
Chitwood, Ronald  
Christman, Chris  
Christman, Henry C.  
City Slope Mt. Seattle  
Clark, Christopher  
Clark, Don  
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Collins, Lyle  
Cooper, Jody  
Cooper, Terry  
Corkran, David  
Cote, David K.  
Courtney, Mel  
Cox, Susan E.  
Cross, Steven F.  
Crowell, Mr. and Mrs. B.L.  
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Crystal Mtn.  
Cupp, Eddie  
Cushman, Leslie  
Dahari, Igal  
Dahlgreen, Matt  
Daily Chronicle, Spokane  
Dale, Carol M.  
Daskal, Neal  
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Davis, Jack  
Davis, James E.  
Davis, Roland E.  
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Dawsey, Chuck  
Deitz, M.D., David  
Del Sesto, Charles A.

Delacy, Janice C.  
Dennison, Doug  
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Ditter, Dr. F.J.A.  
Dixon, Bernard F.  
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Dorough, Lori  
Dorsey, Janey  
Dover, Ben  
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Drewes, Marjorie  
Drewes, Robert  
Drill, Lisa  
Dryden, D. F.  
Dryden, Phyllis  
Duell, M.D., Bart  
Dunbar, Bill  
Duncan, W. Edward, DDS  
Edwards, Guy  
Egley, Theresa A.  
Eglin, Holly  
Eglin, John  
Eglin, Nancy  
Ehlers, Lewis W.  
Elfelt, Joseph  
Ellensburg Cross-Country Ski Club  
Engle, David  
Engle, George R.  
Engle, Helen  
Engle, Margaret  
Engstrom, Sandy and David  
Erlewine, Lyle G.  
Erwood, Steven G.  
Evans, James  
Evans, Kathy & Ken  
Evans, Meg  
Eychaner, Jim  
Fager, Don, M.D.  
Fangen, Mr. and Mrs. Bill  
Fardell, Tony, Sharin, & Family  
Farsdahl, Mark  
Fiddler, Richard  
Fishback, Douglas K.  
Fishback, Fredrick L.  
Flemister

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Flemming, Fred	Grant, Melinda	Hinck, Jim
Flower, Charles C.	Gray, Bill	Hintze, Robert
Floyd, G. R.	Gray, Jrf-Wm.	Hinz, D.W.
Followfield, Evelyn	Gray, Tom	Hirano, Rich
Ford, Laura	Green, Dan	Hlavecek, Gail and Bill
Fomer, Brian	Greenberg, Joanne	Hoffman, David
Forrest, Dr. William M.	Griffith, Stan	Hoffman, M.
Forty-nine Degrees North	Groesch, Michael	Hoffman, Michael
Fossum, Sig	Groves, Dean and Neva	Hoffman, Ron
Foster, Karen	Guchee, Robert	Holland, Sean
Frank, Betsy	Guchee, Robert C.	Hoskins, f-Constance
Frank, Lawrence C.	Guilfoil, Paul	Hoveland, Earl B.
Frank, W. D.	Gustafson, Chuck	Hoveland, Mr. & Mrs. Earl W.
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Freeman, Joan Evans	Haas, Sandy	Hudson, Tim and Donna
Freeman, Ron	Hackett, Ann & Dean	Hunsperger, Lee
Freitag, Jane	Hafenbrack, Dan	Huntley, David
Freitag, Jim	Hagen, David	Ingersoll, Kelle
Fretwell, Pete	Hagen, Dr. Jeffrey	Ingham, Bob
Fritz, Holly	Hale, Adrian and Martha	Irwin, Frank E.
Gaffney, Jane G.	Hall, Barbara	Iversen, Carol A.
Gaffney, Wayne O.	Halvorson, Lorie	J.L. Darling Corporation
Gale, Chris	Hamilton, Jeffrey D., D.D.S.	Jackins, Gordon
Gamache, Denis	Hansen, Chris	Jackson, Kristen
Gamble, Michael	Hanson, Craig W.	Jackson, Lu
Game Ridge Motel	Hanson, Don	Jackson, Michael
Gano, Wade & Maureen	Harding, B.G.	Jackson, Michael
Ganz, Paul	Harkness, Jonathan & Marie-Ann	Jacobson, Lawrence
Garber, Wayne H.	Harley, John D.	Jali, Rick
Gardner, Len	Harrelson, Dr. Orvis A.	Jennings, Laura
Garland, Anthony C.	Harrison, Edra	Jennings, Marsha
Garouite, Dave	Havlin, Donald M.	Jennings, Scott
Garrison, Barbara K.	Hawley, Dale A.	Jensen, Robert V.
Gates, Tom	Hayward, Bev	Jenssen, Sara
Gaulke, Jeff	Haywood, Ben	Jessup, D. Christine
Gervais, Charles P.	Heacock, Harold	Jessup, John H.
Gervais, Lois and Chuck	Heath, Deborah	Jessup, Mike
Gessele, Jon	Heath, Richard & Family	Johnson, A. Clarke, Attorney
Gilbert, Cragg D.	Heidar, Helgi, M.D.	Johnson, Brian
Gilmore, B.	Heidar, Krista	Johnson, C.
Gilmore, Charles A.	Helf, Susan	Johnson, Cynthia
Gilmore, Lynn	Henderson, M.D., John	Johnson, Dan
Gilmore, William A.	Henretig, Bob	Johnson, Delbert
Gnojek, Tom	Herr, Ernestine	Johnson, Frank S.
Goldmann, Louis H.	Hessenthaler, Valarie	Johnson, Philip E.
Goold, Rolla S.	Hessey, Charles and Marion	Johnson, Rick
Gors, Merle & Dianne	Hester, Bob and Glenda	Jones, Alan R.
Graham, Jody L.	Hiler, Mike	Jones, Letha M.
Graham, Ron	Hill, Dr. Ralph	Jones, Ronald B.
Grahm, Jeff	Hill, Jim	Jordan, Dorothy

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Jorgensen, Bernie  
Jozefiak, Ted Elmer & Anita  
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Kaufman, Mary  
Keily-Zent, Damile  
Kelly, Brian J.  
Kennedy, Steve  
Kent, Grace  
Kerns, Dr. Thomas  
Kershaw, Robert  
Kessey, Sallie and Daniel  
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Kinkela, Jason L.  
Kinkela, Verna Jo  
Kinkila, Frank A.  
Kinkila, Jennifer Jo  
Kinkila, Stephanie Sue  
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Kirk, Morris L.  
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Klumpp, Elizabeth  
Knapp, Robert L., DDS  
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Kraatz, Richard and Christine  
Kubiak, Arnie  
Kurtenbach, Lynus & Mary  
Kurtz, D.V.M., T. R.  
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Lachman, Diane  
Lackey, David  
Lamm, Paul  
Lande, Ed  
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Langlow, Scott  
Langlow, Stanley C.  
Lapresti, Rob  
Lawler, Mark  
Lawyer, D. Glenn  
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Lewis, Andrew J.  
Lilley, Roland, M.A.

Lim, Dan  
Lindsay, Justin  
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Lofgren, Tim  
Logan, Donna  
Lombard, Ben  
Loudiana, Teresa  
Lovett, Richard  
Luehart, Gary  
Lund, Dan  
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MacKintosh, R.G.  
Mahler, William  
Mahre, David R.  
Mahre, Mary  
Maier, Sara Cate  
Markum, Susan  
Martin, Paul M.  
Martin, Zachary  
Martinsen, Betty C.  
Mathis, The Family  
Matson, Alan  
Mattson, James M., Jr.  
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McCool, John  
McCormick, Jim  
McCulloch, Gwen  
McDonald, Bill  
McDonald, Julie  
McDonnell, David  
McGhehey, Pat  
McGhehey, Willis L.  
McGoffin, Keith D.  
McGree, Tim  
McLaughlin, Jon  
McLeod, Marshall  
McMahan, Glen  
McMahan, William R.  
McMullen, Belinda  
McMurtrey, Roy O.  
Meassick, Joe & Eva  
Meechan, Marilyn  
Meeks, Dana  
Meiser, Diane  
Mendenhall, Craig, CLU, ChFC  
Merrell, Raymond W., Dr.  
Metzler, Jo Ann  
Metzler, Joann

Meyer, R. L.  
Meyerhoff, Jerry  
Milan, Anthony J., D.D.S.  
Miles, Don, J.D.  
Miller, Ash and Laurie  
Miller, Dennis  
Miller, Virginia  
Mills, Dennis H.  
Miskimens, Kathie  
Misson Ridge  
Montgomery, Frederick A., MD  
Moody, Dave  
Morris, Margaret  
Morrison, Jim  
Morrow, John  
Morton, James H.  
Mt. Baker Recreation Co., Inc.  
Mullen, B. J.  
Murphy, M.J., M.D., F.A.C.S.  
Murphy, Michael & Jackie  
Murray  
Murray, Richard  
Nagel, Justine F.  
Napier, Jo Ellen  
Nashem, Norman & Joanne  
Nashem, Norman R., Jr.  
Naught, Richard  
Naughton, Susan  
NELCO Rehabilitation  
Associates  
Nelsen, Peter  
Nelson, Rodney K.  
Nesset, John C.  
Newgard, Kris  
Newkirk, Ken  
Nielsen, Ron  
Nilsen, Peter  
Nostern, Jim Van  
Novitsky, Pam  
Nygard, Erik  
Nygard, Rebecca  
O'Brien, P.J. & Kim  
O'Connor, Matthew  
O'Neill, Robert H.  
Ocheltree, Alex  
Oestreich, Robert E.  
Olson, Mark  
Olson, Robert J.  
Olson, Sylvia  
Overton, David

Pacific West Hyak	Rambo, Mr. and Mrs. Clark	Schmuhl, David A.
Pagano, Tom	Raymond, Karen	Schoettle, M.D., Ulrich
Pannell, Susan	Rediske, Mardell	Schrader, Donna L.
Paolella, Ray	Reel, David	Schugt, Mr. & Mrs. Dieter
Paolella, Ray	Reid, David	Schut, Donald K.
Paolella, Susan	Reinsma, M.	Schwab, John H.
Parker, Jerry	Reisenauer, Barb	Schwaegler, Dr. L. J.
Patrick, Jim	Reisenauer, Steve	Schwarz, Geraldine K.
Paulu, Tom	Resident	Scott, Bryan
Pauly, Doug	Resident	Scott, Jerry
Pavelchek, David	Resident	Selters, Andy
Payne, Seven E.	Restad, Bruce	Sepic, Jim
Pease, Mary H.	Retherford, Frank	Settle, Jeanne
Pederson, Steve	Rice, Donne L.	Severans, Ken D.
Pedone, Peter J., Sr.	Rice, Glen K.	Shank, Donald R.
Perala, Toivo	Rieper, Doug	Shannon, Rebecca
Perkins, "Cy"	Riffew, Milford	Shapiro, Marty
Peter, Mark	Riggs, John & Kaye	Sharp, Randall R.
Peters, Chuck & Cathey	Ritchie, Barbara	Sharp, Ray
Peters, Cynthia	Robbins, Trapper Jeff	Sheehan, Mark
Peters, Mr. and Mrs. Chuck	Robert, ROD	Sheidler, Jacenta
Peters, Wm. David	ROBERTS	Shelton, Jim
Petersen, Henry	Robertson, Scott	Sherbahn, Roy
Peterson, Bill	Robison, Kim	Shoemaker, Kurt C.
Peterson, Donald C.	Robison, Marian Mae	Shoemaker, Lillian E.
Peterson, Donna	Rogers, Alan	Silverlight, Aaron J.
Petrie, Waldtraut	Roll, Frederick A.	Simon, Clive
Phillips, Todd M.	Roos, Timothy P.	Simon, Steve L.
Picatti, Dick	Roose, Chris	Sinclair, Bob
Picatti, Donald S.	Rose, M.D., Ray V.	Sinclair, Terri L.
Piercy, Dale	Rossow, Randy	Ski Blue Wood
Plesha, David I.	Rowan, Mike	Skone, Don S.
Poirier, Ellen	Rowles, Roger	Smestad, Mary
Poltrock, Steven E.	Rowles, Roger B	Smith, Anita E.
Porter, Fred E. and	Royal, Al	Smith, Dale
Porteus, Steve	Ruben, Justin	Smith, Frederick S.
Porus, M.D., Richard L.	Rupe, John	Smith, Mr. & Mrs. Howard E.
Posada, Diana	Russi, Jim	Smith, Richard Alan
Powell, David W.	Ryland, Anita	Smith, Todd B.
Prichard, James A.	Sabin, Pete, C.L.U.	Smoot, Gary and Gini
Pringle, Bruce	Sailors, Mike	Smoot, John L.
Printz, Peggy	Sample, Jeff	Sno Engineering
Proud, Larry	Sandstrom, Ken	Snyder, Tom
Puckett, Paul W.	Sasser, Larry	Snyder, Tom
Pugh, Chris	Saul, Susan	Sonnabend, Kynette
Putnam, Dr. Elizabeth	Savage, Mr. and Mrs. Mark	South Sound Radiologists, Inc.
Putney, John	Schibig, Thomas M.	Splawn, DVM, Erik L.
Quiring, Ellen	Schinke, James M.	Splawn, Homer B.
Racy, Scott	Schmid, Cathy A.	Splawn, Mary V.
Rader, Dale	Schmidt, Lynn	Spoor, Regina

Spring, Ira L.  
St. Mary, Sandra  
Staal, J.L.  
Staley, Jerry  
Stanfield, Peggy  
Stann, Susan E., D.V.M.  
Steeg, Doris L.  
Steele, William K.  
Stein, Jennifer  
Steiner, Joseph  
Sterling, Doris M.  
Stevens Pass  
Stokke, Phyllis  
Stolarik, Edward  
Stolarik, Nancy  
Stonley, John  
Storey, Mark  
Storkman, Jaime  
Stouffer, John  
Strader, Robert  
Stratton, Frank & Louise  
Strebin, Jr.f-Robert  
Styner, Ward B.  
Sutherland, Mr. and Mrs. Wm. J.  
Svendsen, John  
Swanson, John R.  
Swartz, Kermit F.  
Symond, Carol  
Tanke, Lizette and  
Tarver, Victor R.  
Taylor, Frank  
Taylor, M.D., Michael A.  
Thomas, Byron  
Thomas, Florence  
Thomas, Kay and Sharon  
Thomas, Susan  
Thompson, Maria  
Thompson, Mr. & Mrs. Donald  
Thompson, Stephen D.  
Thomson, Gordon  
Thomson, Robert A.  
Thorne, Jack  
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Tipperman, Mark  
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Tobkin, Janet  
Tobkin, Janet E.  
Tomchek, Mary  
Tooski, Bjorn  
Touart, P.

Towey, Laura  
Toynbee, Claire & Margaret  
Tramway, Riblet  
Trivette, Gisela & Lee  
Trowbridge, Terry L.  
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Tuksaudom, Nancy  
Tull, John  
Turner, Dianne M.  
Ubdin, Galen  
Urman, Dorothy  
Utterback, Thomas  
Uziel, Leon A.  
Vanderflute, R. C.  
VanPuymbrouck, Richard  
Vaught, J. Douglas  
Viebrock, Walter M  
Viele, Chuck  
Village Inn, The  
Wagner, Janice  
Wakefield, B. W.  
Walkenhauer, John  
Walker, Donna  
Walker, Michael R.  
Walker, Thomas H.  
Walker, Will and Fran  
Walls, Royce  
Walsh, Virginia M.  
Ward, Ruth M.  
Warrell, Gary  
Warter, Bruce  
Warter, Sandra  
Warth, John F.  
Wassberg, Julie & Kathleen A.  
Wassberg, William W.  
Wayburn, Bill  
Wayenberg, Karen  
Webber, Hugh  
Webber, Nancy  
Wedin, Galen R., D.V.M.  
Weed, Sumner J.  
Weist, Tony  
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Wenatchee World  
Werkhoven, Libby  
Wernitz, David  
Wessels, Mike A.  
Westerlund, Gary L.  
Wheeler, William A.

Wheeler, Woody  
Whitaker, Peggy S.  
White Pass Co., Inc.  
White Pass Expansion Project  
White, S. D.  
Whitehouse, Stan  
Whitmire, Ken  
Whitmire, Ward N.  
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Wiehl, Richard L.  
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Wilbur, George  
Wilkinson, Kent  
Willett, George G., Ph.D.  
Williamson, Lorna J.  
Wilsen, Kim  
Wilson, Brian M.  
Wilson, Harry E.  
Wilson, Kline R.  
Wilson, Mrs. Brian  
Wilson, Robert R.  
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Wolk, Julie I.  
Wood, Dave  
Woodall, Dave  
Woodburn, Dean  
Workman, Gail  
Yakima Herald-Republic  
Yates, Cherie P.  
Youmans, Nancy  
Young, John R.  
Young, Mr. & Mrs. Seward  
Zajac, Sue  
Zander, Larry M  
Zweig

## APPENDIX D

### ANALYSIS OF COMMENT TO THE DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE PROPOSED EXPANSION OF WHITE PASS SKI AREA

In June of 1989, the public was asked to comment on a Draft Environmental Impact Statement (DEIS) concerning the White Pass Company proposal for expansion of the White Pass Ski Area.

An information packet was mailed to approximately 798 individuals, agencies and organizations who had expressed an interest in the proposal or had commented during the Environmental Impact Statement Scoping Process. Mailed were 259 copies of the full DEIS and 539 copies of the DEIS Summary. Each packet included a Response Form.

In addition to the mailing, the Forest Service held three public meetings (in Yakima, Randle and Seattle) and a field trip to the Ski Area to provide information and encourage response.

The public was asked to provide comments on the DEIS by August 31, 1989. The comment was analyzed and summarized both for response and for consideration in the Final Environmental Impact Statement, if appropriate.

#### COMMENT SUMMARY AND RESPONSE

##### ENUMERATION

A total of 497 written comments was received. Of these, 471 were from individuals, 2 were petitions, and 24 represented the views of various user groups, agencies and organizations.

Many letters contained comments about expansion of the White Pass Ski Area into Hogback Basin. Of these, 147 letters expressed support and one of these was a petition with 535 signatures supporting maximum expansion. There were 336 letters expressing opposition to any expansion there, with an additional 6 names included in two of these letters. Another letter contained a petition with 15 signatures supporting Alternatives 1, 2 or 3.

There were also 14 responses which contained comments but which indicated neither opposition nor support for the expansion proposal.

##### AGENCIES

Nine government agencies submitted letters. These begin on the next page.

United States Environmental Protection Agency  
Project 10  
1200 Sun Avenue  
Seattle WA 98101  
Alaska  
Idaho  
Oregon  
Washington



SEP 22 1989

WD-136

497

Sonny J. O'Neal  
Forest Supervisor  
Wenatchee National Forest  
USDA Forest Service  
P.O. Box 811  
Wenatchee, Washington 98807

Dear Mr. O'Neal:

The Environmental Protection Agency (EPA) has reviewed the draft environmental impact statement (DEIS) for the the White Pass Ski Area Proposed Expansion in the Gifford Pinchot and Wenatchee National Forests. This DEIS evaluates ten alternative plans, including the "no action" alternative, for expansion of facilities for winter and summer use of the ski area. Our review was conducted in accordance with the National Environmental Policy Act (NEPA) and our responsibilities under section 309 of the Clean Air Act.

Based on our review, we are rating this DEIS EC-2 (Environmental Concerns - Insufficient Information). Our environmental concerns are based on potential air quality effects and the effects from induced growth and cumulative activities. Additional information and clarification are needed on air quality, water quality, wildlife, mitigation, cumulative and secondary growth effects. These concerns are discussed in more detail in the paragraphs that follow.

An explanation of the EPA rating system for draft EIS's is enclosed for your information. This rating and a summary of EPA's comments will be published in the Federal Register.

General

We support your decision to prepare an EIS rather than basing your special use permit decision on the Environmental Assessment completed in 1986. The upper Hogback Ridge Basin development deserves a full EIS evaluation and public review due to its proximity to the Goat Rocks Wilderness area and its prior inclusion in that wilderness area. With adequate monitoring the phased development approach, which incorporates use level triggers for the next phase, should result in controlled and careful development over time.

The Comparison Criteria developed by the interdisciplinary Team provide a good framework for the analysis of potential effects. We believe Alternatives 4, 5, and 6 balance wilderness impacts, displacement of backcountry skiers, physical and biological effects, the unique characteristics of the Hogback basin and increased recreational opportunities such that most concerns are accommodated.

Air Quality

Normally, a project of this magnitude would not warrant a detailed air quality investigation since serious health related air quality problems are not expected. However the proximity of the proposed expansion to a PSD Class I area (the Goat Rocks Wilderness Area) justifies a somewhat more rigorous air quality impact analysis than is provided in the DEIS. Under the Clean Air Act, Class I areas are provided the most stringent protection against air quality degradation.

The first step in such an analysis is to quantify the emissions from all sources. These emissions estimates should include carbon monoxide (CO) from automobiles, particulate matter (PM) from unpaved parking lots and roads, and CO and PM from woodstoves and fireplaces. Simple screening techniques can then be used to estimate the effects on local air quality and the Class I airshed in the Goat Rocks Wilderness Area. The impacts of the PM emissions can be estimated and compared with Prevention of Significant Deterioration (PSD) increments. Moreover, the effects of the PM emissions on visibility in the Class I area should be considered. Dave Bray in the Air Program Branch can provide you with detailed information on conducting emissions inventories and the availability of screening level models for assessing impacts. He can be reached at (206) 442-4253 or (FTS) 309-4253.

Indirect Effects

Direct effects result from approval for construction of ski runs, lodges, and other base area facilities. Indirect environmental effects are those caused by population influx, new employment, increased retail activity and service industries induced by the ski area expansion in areas to the east and west of White Pass.

The Council on Environmental Quality's (CEQ) regulations for implementing NEPA state that the environmental consequences section in a DEIS should include: "Indirect effects and their significance (Section 1502.16(b))." Indirect effects are defined as: "... caused by the action and are later in time or further removed in distance, but are still reasonably foreseeable. Indirect effects may include growth-inducing effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems (Sec. 1508.8(b))."

In the case of the White Pass expansion proposal, the preferred alternative would result in an eighty percent increase in the number of skiers using the facilities during the winter. Induced residential and commercial growth outside of the permit boundary area could result in water quality, air quality, wildlife/habitat, transportation, and public and support system effects beyond the study area. The final EIS should briefly describe the resources and services (e.g., wetlands, floodplains, fish and wildlife habitat, water quality, air quality, water supply, wastewater treatment, traffic) in nearby areas that could be affected by 2,000 additional skiers coming to the area for lodging, food, and other services and conveniences. This type of description can then form the basis of a screening level analysis of impacts on these resources and services.

Mitigation

We have a number of concerns about the mitigation measures presented in the DEIS. The DEIS does not evaluate the effectiveness of mitigation measures. The current presentation implies that the proposed measures will eliminate impacts. The effectiveness of the listed mitigation measures to decrease or minimize potential adverse effects should be evaluated and described in the EIS whenever possible.

The Forty Most Asked Questions Concerning CEQ's NEPA Regulations (45 FR 18022) question 19 states, the EIS should discuss the probability of the mitigation measure being implemented. The EIS should indicate the likelihood that such measures will be adopted or enforced by responsible agencies (including agencies outside the jurisdiction of the lead agency). This is of particular importance for the mitigation measures for transportation and social and economic effects. Will the Washington Department of Transportation be responsible for the recommended studies and carrying out any recommendations from those studies? Will local agencies have the finances and staff to regulate growth activities?

**U.S. ENVIRONMENTAL PROTECTION AGENCY - REGION 10**

One could argue that indirect effects could be dealt with in the future when more specific information is known. However, for this proposal, the potential exists for "reasonably foreseeable" adverse effects to water quality, air quality, habitat, and social/economic services, from offsite development. Much of the mitigation is subject to regulation by other agencies (third parties). The EIS needs to serve the function of alerting those third parties adequate notice of the expected consequences and the opportunity to plan and implement corrective measures in a timely manner.

The DEIS states that "Tools are available for local governments to foresee changes and to avoid or mitigate negative effects...". What local controls exist to effectively deal with induced growth? We are concerned that induced growth in the small communities near the ski area could exceed the capacity of the existing local jurisdictions to adequately mitigate the effects of growth with current institutional controls or personnel levels.

The EIS needs to disclose the potential adverse effects to alert local agencies of potentially needed institutional controls or revenues. The EIS should include mitigation for direct as well as indirect effects and these measures should not be limited to mitigation activities for which the Forest Service has authority.

Cumulative Effects

The cumulative effects discussion acknowledges that effects can result from activities beyond the study area. However, the discussion of cumulative effects restates the effects from the ski area expansion. The EIS needs to develop a cumulative effects scenario that describes the activities that have occurred in the past, are presently occurring, and are planned in the future. The list should include, for example, highway projects, timber sales, and commercial developments that are being considered near the White Pass ski area and could have an effect on any of the resources evaluated in the DEIS.

Water Quality

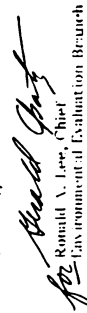
It is unclear in the DEIS how runoff potentially contaminated with salt, oil, etc., will be treated or kept from reaching streams, lakes, and groundwater. Will surface drainage control include parking lots as well as fuel storage and equipment storage and maintenance areas? How will any potentially contaminated runoff be treated? These topics should be discussed in some detail. A program for monitoring the effectiveness of the waste treatment system after project development is complete would also provide useful information.

Wildlife

Descriptions of deer and elk use, including the conclusion that forage habitat will be improved by project development, imply that increased human activities will not displace the animals. The potential impacts to wildlife from summer recreation activities, especially for alternative 10, should be addressed in detail to support these conclusions.

We appreciate the opportunity to review the DEIS. We would be glad to discuss our comments with you. If you have any questions contact Sally Brough of our Environmental Review Section at (206) 442-4012 or (TTS) 299-4012.

Sincerely,



Ronald A. Lee, Chief  
Environmental Evaluation Branch

**FS Response:**

- a. Based on review of the DEIS, there is insufficient information on environmental concerns, specifically, air quality, water quality, wildlife, mitigation, and cumulative and secondary growth effects.
  - b. The impacts of potential indirect environmental effects in general, an evaluation of effectiveness of mitigation measures, and the cumulative effects on water quality and wildlife need to be disclosed and addressed in detail in the FEIS.
  - c. Generally, the Comparison Criteria developed by the interdisciplinary team provides a good framework for the analysis of potential effects.
  - d. Alternatives 4, 5 and 6 balance Wilderness impacts, displacement of backcountry skiers, physical and biological effects, the unique characteristics of Hogback Basin, and increased recreational opportunities to the degree that most concerns are accommodated.
- (a) The Forest Service also recognized deficiencies in the DEIS after they were pointed out by the organizations and individuals who commented on it. Where possible, these deficiencies have been corrected in the FEIS.
  - (b) A section concerning the effectiveness of the mitigation measures has been added in the FEIS and the section on Cumulative Effects has been improved by further addressing this concern.
  - (c) The Comparison Criteria were based on the identified public issues.
  - (d) Alternative 7 is one of the Forest Service-selected winter alternatives. This alternative incorporates the features on Alternatives 4, 5 and 6.



USDA SOIL CONSERVATION SERVICE (SCS)

**FS Response:**

- a. Developments in the Forest Service preferred alternatives (2, 7 and 10) should have only minimal effects if done according to the EIS.
  - b. Enlarging this existing facility should have less effect on the conservation of resources than developing a completely new site.
  - c. Three major concerns include:
    - Holding earth work to a minimum
    - Careful selection of revegetative plant materials
    - Keeping water quality at the highest level.
- (c) The three major concerns expressed by the SCS are also major concerns of the Forest Service and the White Pass Company, but the Forest Service feels that with the application of the mitigation measures as outlined in the FEIS, the impact to the soil, vegetation and water quality will be well within acceptable limits.

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Soil Conservation Service

United States Department of Agriculture



W. 920 Riverside, Rm. 360  
Spokane, Washington 99201-1080

August 24, 1989

Mr. Sonny J. O'Neal  
Forest Supervisor  
Wenatchee National Forest  
P.O. Box 811  
Wenatchee, Washington 98807

Dear Mr. O'Neal:

The Soil Conservation Service has reviewed your White Pass Ski Area Proposed Expansion draft EIS. The developments in the Preferred Alternatives should have only minimal effects if done according to the EIS. Enlarging an existing facility should have much less effect on the conservation of resources than would the development of a completely new site.

The Soil Conservation Service has three major concerns:

1. That all earth work be held to an absolute minimum, as the combination of erodible soils and high precipitation can cause severe damage.
2. That very careful selection and purchase of plant materials for revegetation be done. This site warrants the best possible material for good protection.
3. That all septic systems installed or rehabilitated have capacity to insure that both surface and ground water are not polluted. Water from the White Pass area affects streams flowing both ways as well as several lakes in the area and must be kept at the highest quality.

Thank you for the opportunity to review your document.

Sincerely,

*Paul M. Taylor*  
Paul M. Taylor  
State Conservationist

LYNN A. BROWN  
State Conservationist  
cc: G. Tibke, SRC, SCS, Spokane SO  
J. Jacoby, AC, SCS, Yakima AO  
R. Wondarcheck, DC, SCS, Yakima FO

The Soil Conservation Service  
is an agency of the  
United States Department of Agriculture



WENATCHEE

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U.S. GOVERNMENT PRINTING OFFICE: 1980 O-287-111

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES -  
CENTER FOR DISEASE CONTROL

DEPARTMENT OF HEALTH & HUMAN SERVICES



495

Public Health Service

Department of Health and Human Services  
Washington, D.C. 20201

August 28, 1989

Mr. Sonny J. O'Neal  
Forest Supervisor  
Wenatchee National Forest  
301 Yakima Street  
P.O. Box 811  
Wenatchee, Washington 98807

Dear Mr. O'Neal:

We have reviewed the Draft Environmental Impact Statement (DEIS) for the White Pass Ski Area Proposed Expansion, Gifford Pinchot and Wenatchee National Forests. We are responding on behalf of the U.S. Public Health Service.

We see no potential significant public health impacts in any of the alternatives discussed. We wish to emphasize the need for compliance with the requirements of the Occupational Safety and Health Administration for worker safety during construction.

Thank you for the opportunity to review this DEIS. Please insure that we are included on your mailing list for the Final EIS for this project, and any future DEIS's developed.

Sincerely yours,

*D. A. Clapp*  
David E. Clapp, Ph.D., P.E., CIH  
Environmental Health Scientist  
Center for Environmental Health  
and Injury Control

1503

SEP 1 1989  
FBI - WASH DC

**FS Response:**

- a. Speaking on behalf of the U.S. Public Health Service, there is no potential significant public health impact seen in any of the alternatives listed in the DEIS.
- (a) The Forest Service agrees.

United States Department of the Interior

FISH AND WILDLIFE SERVICE WEN6167-JCE NF  
 Fish and Wildlife Enhancement  
 2625 Parkmont Lane S.W., Bldg. B  
 Olympia, Washington 98502  
 (206) 753-9440/FTS 434-9440

MAY 14 1990

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Mr. Sonny J. O'Neal, Forest Supervisor  
 Wenatchee National Forest  
 301 Yakima Street  
 P. O. Box 811  
 Wenatchee, WA 98807-0811

Dear Mr. O'Neal:

This letter addresses your Biological Assessment on the White Pass Ski Area Expansion project. The Assessment includes a list of nine listed, proposed, and candidate species that may be affected by the project. The Service concurs with the adequacy of the list, and it may constitute a species list for the purposes of informal consultation or conferencing with the Service.

The Biological Assessment adequately addresses impacts to all of the listed species evaluated, and we concur with your determinations of effect for these species. However, the assessment does not adequately evaluate impacts to the northern spotted owl from construction of the proposed project. Additional information is necessary regarding spotted owls and their habitat in the project vicinity.

The assessment addresses impacts to owl pairs within a 2.1-mile radius circle of the project site. The Service, however, is concerned about impacts to owls located within a 2.5-mile radius circle of the project site. According to the map attached to the assessment, the project is within 2.5 miles of a third owl pair, identified as reproductive. Specific impacts to this owl pair should also be addressed in the biological assessment.

An evaluation of impacts to suitable spotted owl habitat due to project construction should also be included in your evaluation of impacts to owls. Although stated to do so in the assessment, the attached map did not provide information about suitable owl habitat currently existing within the project vicinity. The assessment should also address the potential loss of suitable owl habitat within a 2.5-mile radius circle of the project and 2.5-mile radius circles of each owl pair in the project vicinity (unless site specific information, such as radiotelemetry or banding data, is available).

It appears that the project area was most recently surveyed for spotted owls in 1987. While this information is valuable, more current information would add to the completeness of your assessment.

The Service offers the following recommendations regarding your evaluation of potential impacts to spotted owls and their habitat:

1. Determine the level of spotted owl use within a 2.5-mile radius circle of the project area, centered on the project site. The Service recommends that all suitable habitat within a 2.5-mile radius circle of the project site be surveyed for owls to the protocol standard (a minimum of 6 times per year, including this year, unless an owl pair site is confirmed in fewer visits).
2. The 2.5-mile radius circle around the project site should more accurately reflect that portion of the project involving owl habitat (i.e., the location of Lift 7 in the southern half of Section 10, approximately 1/4 mile from Knuppenburg Lake). Redraw the center of the 2.5-mile radius circles around the project site to more accurately reflect the location of Lift 7.
3. Include within your definition of suitable habitat all those areas, in which owls have been found, that do not necessarily meet the definition of suitable habitat used by the Wenatchee or Clifford Pinchot National Forests. The Fish and Wildlife Service considers suitable owl habitat to include all areas capable of supporting reproductive, foraging, and/or sheltering behaviors. You should also consider impacts to dispersal habitat within the project vicinity.
4. Determine the amount of suitable habitat existing within a 2.5-mile radius circle of each owl pair, located since 1985 (including owls located this year), within 2.5 miles of the project site;
5. Determine the amount of suitable habitat within a 2.5-mile radius circle of the project area;
6. Determine the amount of suitable habitat, within the above-mentioned 2.5-mile radius circles, that would be removed due to construction of the project; and
7. Consider impacts to owls that may result from increased human activity within the project vicinity.

The Forest's determination of no jeopardy is based upon implementation of the Record of Decision (ROD) for the Final Supplement to the Environmental Impact Statement for an Amendment to the Pacific Northwest Regional Guide. The Service does not agree that compliance with the ROD will provide for the continued viability of the species. The Hatfield-Adams Amendment also directs the Forest Service to consider making revisions in the document by September 30, 1990, after consideration of the Interagency Scientific Committee Report.

Until the Service makes a listing determination regarding the spotted owl, and the Forest Service outlines a revised ROD, we recommend that all available options for the protection of owls and owl habitat within the project vicinity be maintained.

UNITED STATES DEPARTMENT OF THE INTERIOR,

FISH AND WILDLIFE SERVICE

Finally, if the Service lists the spotted owl as a threatened species in June, 1990, and you determine that the project may affect this species, you should initiate consultation with the Service pursuant to Section 7 of the Endangered Species Act. Please call Jim Michael or Carolyn Scafield of my staff at the letterhead phone/address if you have any questions regarding this letter or your obligations under the Act.

Sincerely,



David C. Frederick  
Field Supervisor

c: UMW (HONGAME)  
UNHP

CRS:cs

**Forest Service Response:**

- (a) Your comments are appreciated.
  - (b) Additional spotted owl surveys are being made. When these surveys are completed there will be further consultation with the Fish and Wildlife Service. Projects implementation will comply with the Endangered Species Act (PL 93-205).
- a. We concur with the adequacy of the listed, proposed and candidate species in the EIS. The Biological Assessment is adequate and we concur with your determination of effects.
- b. Regarding spotted owls, effects on owls and owl habitat should be based on a 2.5-mile radius. The Service recommends:
- redrawing the circle radius to better reflect the Chair 7 location;
  - including all areas capable of supporting owl reproduction, foraging and shelter behavior in your definition of suitable habitat; and,
  - determining suitable habitat within 2.5 miles of each owl pair and of the project area.



**United States Department of the Interior**  
 OFFICE OF ENVIRONMENTAL PROJECT REVIEW  
 1002 N.E. HOLLADAY STREET, SUITE 354  
 PORTLAND, OREGON 97232-4181

August 18, 1989

WENATCHEE NF

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 WCA  
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ER 89/566  
 Mr. Sonny J. O'Neal  
 Forest Supervisor  
 Wenatchee National Forest  
 P. O. Box 811  
 Wenatchee, Washington 98807

Dear Mr. O'Neal:

The Department of the Interior has reviewed the draft Environmental Impact Statement (draft statement) for proposed expansion of the White Pass Ski Area, Lewis and Yakima Counties, Washington. The following comments are provided for your use and consideration when preparing the final documents.

**GENERAL COMMENTS**

The Fish and Wildlife Service (Service) advises that three Northern Spotted Owls (*Strix occidentalis caurina*), a species presently proposed for Federal listing as a threatened species, occur in old growth forest areas which are within 2 miles of the site proposed for the ski area expansion. A nesting owl pair is present near Little Lava Creek (TLN R1E S5), and a single owl is located near Chimney Creek (TLN R1E S20). The draft statement indicates that 60 to 70 acres of old growth forest may be cleared for ski runs and lift lines. Thus, the Service requests that additional owl surveys be conducted within the project expansion area and the results be discussed in the final document.

**SUMMARY COMMENTS**

The Service may not object to project approval, pending completion and results of improved owl surveys of old growth forest habitat within the proposed ski area expansion site.

Mr. Sonny J. O'Neal

We encourage both the Wenatchee National Forest and the applicant to contact Mr. David C. Fredrick, Field Supervisor at the Service's Olympia Field Station, to discuss the requested surveys and concerns in more detail. He can be reached at:

U. S. Fish and Wildlife Service  
 2625 Parkmont Lane S.W., Building B  
 Olympia, Washington 98502  
 Phone: 206-753-9440 or 8-434-8440

Thank you for the opportunity to comment.

Sincerely,

*Charles S. Polityka*  
 Charles Polityka  
 Regional Environmental Officer

UNITED STATES DEPARTMENT OF THE INTERIOR,  
OFFICE OF ENVIRONMENTAL PROTECTION REVIEW

a. Because 60-plus acres of old growth forest may be cleared for ski runs, additional owl surveys should be conducted within the expansion area and the results discussed in the Final EIS. Pending completion and results, there may not then be any objection to project approval.

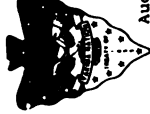
**Forest Service Response:**

(a) Additional northern spotted owl surveys are being made. When these are completed there will be further consultation with the Fish and Wildlife Service. Project implementation will comply with the Endangered Species Act (PI 93-205).

CONFEDERATED TRIBES AND BANDS OF THE YAKIMA  
INDIAN NATION (LETTERS FOLLOW)

**FS Response:**

- a. Development in Hogback Basin is opposed. It is in the ceded area of the 1855 Treaty and any development will be a direct and legal violation of that treaty.
- b. There is concern that the Master Plan for White Pass Ski Area shows further development into Goat Rocks Wilderness areas beyond Hogback.
- c. Existing use of the Basin is not opposed.
- d. The DEIS did not speak adequately to the concerns of the Tribes and, therefore, the NEPA process has been circumvented.
- e. Hogback Basin should be returned to Wilderness status.
- (a) Although Hogback Basin is west of the Cascade Crest, it is still considered to be an area that may have traditionally been used by both the Yakima and the Cowlitz tribes and can be considered as part of the ceded area. The Forest Service does not feel the proposed development will be a violation of the treaty.
- (b) That portion of the Master Plan that shows potential development in the Goat Rocks Wilderness was never agreed to by the Forest Service. Any development to the south or east of Hogback Basin would not be allowed as these lands are formally designated Wilderness.
- (d) During the period between the DEIS and the FEIS the Forest Service met again with Cultural Committee members of the Yakima Nation to gain more insight into their concerns. No new information concerning past use or the specific significance of Hogback Basin was presented.
- (e) Returning these lands to Wilderness status would take an Act of Congress.



Confederated Tribes and Bands of the Yakima Indian Nation

Established by the Treaty of June 9, 1855

August 23, 1989

Sonny J. O'Neal, Forest Supervisor  
Wenatchee National Forest  
301 Yakima Street  
Wenatchee, WA 98801

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30

Dear Mr. O'Neal:

The Yakima Indian Nation submits the following comments on the Draft Environmental Impact Statement for the proposed expansion of the White Pass Ski area. The draft EIS contains a brief and very inadequate discussion of the Tribe's concerns, hence the NEPA process has been circumvented. In fact, the document fails to recognize the tribes concerns as driving issues in the NEPA process. Because of these serious inadequacies, and the real desecration of the proposed development will, cause the proposal to expand the White Pass Ski area should receive no further consideration.

Page III-41 of the Draft EIS contains inaccurate information. First, the Yakima Indian Nation has done much more than express concern about the expansion of White Pass ski area into Hogback Basin. The Yakima Indian Nation is not just concerned but is opposed to this development. We do not oppose the existing back country uses of Hogback Basin which are consistent with wilderness lands, but we do oppose ground disturbing activities and developments in the Basin. Second, the Hogback Basin area is clearly within the ceded area of the 1855 Treaty since the western boundary of the ceded lands was a direct line from Mt. Adams to Mt. Rainier, and that line is well to the west of the Hogback Basin area.

Hogback Basin has great cultural and spiritual importance to the Yakima People. The Hogback Basin itself is referred to as "Kamiakin's Place" by many Yakima Tribal Elders. It is a known fact that Chief Kamiakin and his followers used Hogback Basin extensively both as a refuge from the U.S. Army during the Yakima Indian War and as a traditional summer place. Kamiakin's Band used Hogback Basin as a hiding place, and the U. S. Army was unsuccessful in finding him or his trails and could not find his camps, horses or means of survival. This alone makes Hogback Basin of great historical importance to the Yakima Indian Nation.

Post Office Box 151, Fort Road, Toppenish, WA 9948 (509) 465-121

Sonny J. O'Neal  
August 23, 1989  
Page 2

Additionally, use of Hogback Basin for trading, travel, and hunting, and gathering activities emphasizes the direct violation of the Treaty of 1855 if the project proceeds. Further the ancient travel route along the crest of the Cascades is a significant remnant of a once extensive cultural resource and is clearly eligible for inclusion to the National Register of Historic Places.

Elk and deer herds utilize Hogback Basin for spring, summer, and fall grazing and as a migration corridor. The proposed project will alter the traditional movement of large game in an unaddressed manner. In addition, the Tribes traditional uses of this area for gathering of foods and medicines including the dependency on big game are guaranteed by the Treaty of 1855.

Hogback Basin is located within an important spiritual/religious area and any development within this basin will infringe on the religious practices of the Yakima Indian Nation.

The Cultural Surveys discussed in the Draft EIS are inadequate and unacceptable because the people conducting those surveys were unaware of the significance of "Kamiakin's Place." This could only have been determined through proper consultation with the governing body of the Yakima Indian Nation and this did not occur.

The Tribe also understands that the master plan for White Pass shows further expansions into the Goat Rocks Wilderness Area beyond Hogback Basin. The Tribe is opposed to the loss of these wilderness lands to ski expansion and development activities.

Sonny J. O'Neal  
August 23, 1989  
Page 3

The existing facilities of the White Pass Ski Area are causing serious impacts to water quality and expansion will only exacerbate an already degraded situation. The operations at White Pass are not compatible with the wilderness and other uses in this area.


The Yakima Indian Nation believes that this Draft Environmental Impact Statement is absolutely inadequate and biased. These are not "philosophical differences" but very real legal issues that were circumvented in the EIS. It is the position of the Yakima Indian Nation that further consideration of any development in the Hogback Basin should be forgone and the land returned to wilderness status.

Very truly yours,

YAKIMA INDIAN NATION

*Melvin R. Sampson*  
Melvin R. Sampson, Chairman,  
Yakima Tribal Council

*Wilfred Vallup*  
Wilfred Vallup, Chairman,  
Cultural Committee



**CULTURAL COMMITTEE**  
**OFFICIAL ACTION**

DATE: August 23, 1989  
TOPIC: White Pass Ski Expansion Project

ACTION REQUESTED: whether the Yakima Indian Nation agrees with/or opposes the Expansion Project of the White Pass Ski Area/Hogback Basin Area

FORMAL ACTION TAKEN: Motion made by Walter J. Spensis, that the Cultural Committee go on record in opposing the White Pass Ski Area Expansion. Seconded by Clifford Mose. Motion amended that letter and comment be prepared for Mel Sampson and Wilfred Vallup. Signature to comply with EIS provisions to send comments before August 31, 1989. Further a resolution be prepared for Executive Committee as Tribal Opposition to the expansion

DECISION: APPROVED  DISAPPROVED  TIES   
VOTE: TOTAL 5 FOR 4 AGAINST 0 ABSTAINED 0

MEMBERS	COMMITTEE ACTIVITY		
	REG. CALL (PM)	MEETING	WRITE UP
WILFRED VALLUP	C	P	F
LONNIE SELAM	S	P	F
HEZEL UMTUICH	M	P	F
CLIFFORD MOSES	M	P	Com F
LEO ALECK	M	M	F
WALTER SPENSIS	M	P	F
EX-OFF.			

OTHERS PRESENT: Bill Vallup Sr., Greg Cleland, Dennis Galt, Markie Hebecker, Sandra Crowe & Philip Bl...

CERTIFICATION: *Wilfred Vallup*  
COMMITTEE ACTION NUMBER: #37-89'89  
ROUTING: \_\_\_\_\_



~~77E~~

*White Pass*

Duesse Reardon  
Secretary of Transportation

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Washington State  
Department of Transportation  
4200 Main Street S 15  
Vancouver, Washington 98668-1709  
(206) 896-6461

August 2, 1989

Wenatchee National Forest  
P.O. Box 811  
Wenatchee, WA 98807

ATTN: Mr. Sonny J. O'Neal  
Forest Supervisor

RE: White Pass Ski Area  
Proposed Expansion.  
Draft Environmental  
Impact Statement.

Dear Mr. O'Neal:

Thank you for the opportunity to comment on the Draft EIS for this proposed ski area expansion at White Pass.

We recognize the White Pass Ski Area as a valuable resource that, if developed to its full potential, would provide a much-needed boost to the local economy. We therefore conditionally support Alternative No. 7 for winter operations and Alternative No. 10 for summer.

However, with these full development alternatives come problems that already exist with the present use of this facility, which will become much worse in the future if solutions are not found and implemented.

The problems we feel must be corrected are as follows:

- 1) Parking
  - a. Who controls the parking?
  - b. Who cleans the lots?
  - c. Who plows the snow?
  - d. Who directs the people where to park?
  - e. Are the proposed number of parking stalls enough?
  - f. Everyone wants to park near the facilities.

Recommendations:

- a. Parking lot personnel; parking, security and clean-up.
- b. Shuttle bus service; both on-site and from Packwood and/or Naches to White Pass and back.

- 2) Traffic Congestion:
  - a. All the skiers arrive at about the same time.
  - b. All the skiers leave at about the same time.
  - c. Who controls traffic flow and chain-up areas?
  - d. Adequate law enforcement is needed.

WENATCHEE N  
Duesse Reardon  
Secretary of Transportation

Washington State  
Department of Transportation  
4200 Main Street S 15  
Vancouver, Washington 98668-1709  
(206) 896-6461

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MOS

April 13, 1990

Mr. Phillip D. Glass  
Recreation Staff Officer  
U.S.D.A. Forest Service  
P.O. Box 811  
Wenatchee, WA 98807-0811

SR 12, C.S. 2109, M.P. 129 to M.P. 135.5  
F.S. No. 2700/White Pass Expansion

Dear Mr. Glass:

In response to your request, we have reviewed the existing chain-up areas on both sides of White Pass and have the following comments and observations:

1. There are three existing chain-up areas: two on the west side and one on the east side. This is also a chain removal area on the east side.
2. There are no fatal physical or topographical constraints, or obvious environment restrictions to some expansion of the existing chain-up areas. There may be limits to the extent of expansion.
3. East of Fiberline Drive, approximately milepost 135.5; could add approximately 250 feet, or move off-road to lot.
4. Milepost 137.6 to M.P. 137.9, approximately, restrained to lengthening due to bridge, but could widen in low rock cut areas.
5. Milepost 159 vicinity, vicinity Indian Creek campground, westbound: intersection constraints make difficult to lengthen, could be widened, is very short area at present.

The capacity of chain-up areas is currently limited. There is room for some expansion. The amount of expansion necessary is to be determined as part of the proposed corridor study.

If you have any further questions, please feel free to contact Steve Jacobson at 206-686-6347 in our Vancouver office.

Sincerely,  
GARY F. DENKICH, P.E.  
District Administrator

*Steve L. Jacobson*  
By: STEVE L. JACOBSON  
District Transportation Planner

GFD:blw  
SLJ

Wenatchee National Forest  
August 2, 1989  
Page 2

- e. Additional wrecker facilities are needed.
- f. A secure storage area for impounded and towed vehicles is needed.
- g. Mechanical repair services are needed.
- h. Extra lanes on SR-12 are needed, from Knappenburg Lake eastbound and from Dog Lake westbound.
- i. The pass itself, from SR-123 to SR-410 is not designed for high speed traffic, but the skiers seem to always be in a hurry to get home, compounding an accident problem already double the State-wide average for similar highways.

**Recommendations:**

- a. Provide additional facilities and services.
- b. Provide additional personnel.
- c. Provide for modifications to SR-12.

If the above mentioned problems can be solved as the ski area expansion is implemented, White Pass can become one of the premier recreational resources in Washington State.

Very truly yours,

GARY F. DEMICH, P.E.  
District Administrator



By: KEITH E. AMOLA, P.E.  
District Project Development Engr.

GFD:mas  
KEA:SDZ

- cc: Skip Burch
- Bernie Chaplin
- Lawrence Jacobson
- Gerzy Edwards
- Steve Jacobson
- Royce Wallis
- Records Control

2)

**Washington State Department of Transportation**  
 1200 1st Street S.W.  
 P.O. Box 34027  
 Olympia, WA 98512  
 Phone: (360) 369-7200

WENATCHEE NP  
 MILEPOST 151.7  
 SR 12  
 Milepost 151.7  
 Proposed White Pass Ski Area Expansion

June 30, 1989

Mr. Phillip D. Glass  
 Supervisor's Office  
 Wenatchee National Forest  
 P.O. Box 811  
 Wenatchee, WA 98807

SR 12 C.S. 3903 Milepost 151.7  
Proposed White Pass Ski Area Expansion

Dear Sir:

We have reviewed the Draft Environmental Impact Statement for the "White Pass Ski Area Proposed Expansion" and found it did not address the concerns outlined to you in our comments of October 1988 or May 1989 (copies of which are attached).

Please see page S-21, TRANSPORTATION HIGHWAY: The comment regarding capacity, delay, and congestion is acceptable to WSDOT as indicated. However, the DEIS fails to address the two additional concerns identified in our previous comments: parking and the need for additional room at chain-up areas.

The above-referenced items can be expected to have a significant effect on the safety of the traveling public as well as ski-area patrons. The problems associated with them should be mitigated to lower the risk of accident.

Please send us a copy of the full EIS when it is completed. If you have any questions, please contact Steve Jacobson, at (206) 696-6347, in our District Office in Vancouver.

Sincerely,

GARY F. DEMICH, P.E.  
District Administrator



By: KENNETH C. KIRKLAND, P.E.  
Dist. Assistant Proj. Dev. Engr.

- GFD:ld
- KCK: SJ
- cc: J. Sorrell
- J. Burgin
- Records Control

FILE

DATE: JANUARY 5, 1989  
 TO: STEVE JACOBSON  
 DISTRICT #4 PLANNING  
 SUBJECT: WHITE PASS EIS  
 FROM: JAY BURGIN/LARRY SEVERTSON  
 HEADQUARTERS TRAFFIC ANALYSIS

IN RESPONSE TO YOUR REQUEST OF DECEMBER 15, 1988 THE FOLLOWING COMMENTS ARE PERTINENT TO THE WHITE PASS EIS:

- 1.) PRESENT DAY TRAFFIC VOLUMES WERE CHECKED AT PERMANENT TRAFFIC RECORDERS NEAR PACKWOOD AND NACHES. THIS INCLUDED PEAK HOUR INFORMATION FROM THE PEAK SKIING DAYS (THE DAY AFTER THANKSGIVING, THE DAY AFTER CHRISTMAS, AND NEW YEARS DAY) THE FOREST SERVICE HAD REQUESTED. THESE TWO LOCATIONS, PLUS INFORMATION FROM PREVIOUS ANALYSES ON BOTH SIDES OF WHITE PASS WERE REVIEWED TO ASSESS THE IMPACT OF ADDITIONAL TRAFFIC ON HIGHWAY CAPACITY.
- 2.) OUR ANALYSIS DETERMINED THAT WITH THE ADDITION OF THE TRAFFIC GENERATED BY COMPLETION OF THE FINAL PHASE OF CONSTRUCTION, PEAK SUNDAY TRAFFIC WILL EXCEED CAPACITY. IN ADDITION INCREASED CONGESTION WILL BE EXPERIENCED AS TRAFFIC VOLUMES INCREASE THROUGH THE PHASES OF CONSTRUCTION WHILE ULTIMATELY THE ROADWAY WILL BE OVER CAPACITY AND TRAFFIC BACKUPS WOULD RESULT. THE SITUATION IS CONSIDERED TOLERABLE. THIS IS DUE TO THE INCREASED TRAFFIC BEING OF A WEEKEND RECREATIONAL NATURE AND AS SUCH OUR DESIGN HOUR VOLUME MAY WELL BE THE 200th HOUR. THIS WOULD NOT BE UNUSUAL FOR A RECREATIONAL HIGHWAY.
- 3.) THE ONE FACTOR THAT WILL NEED TO BE ADDRESSED IS THE NEED FOR ADDITIONAL ROOM AT CHAIN-UP AREAS. WITH THE INCREASE IN TRAFFIC THE PRESENT CHAIN-UP FACILITIES WILL BE INADEQUATE. FURTHER STUDY WILL BE NEEDED TO DETERMINE TO WHAT EXTENT THESE AREAS NEED TO BE INCREASED IN SIZE.

IF YOU HAVE ANY QUESTIONS OR WE CAN BE OF FURTHER ASSISTANCE, PLEASE CONTACT US AT SCAN 234-3210.

**Washington State  
 Department of Transportation**

3600 1st Avenue, S.W.  
 P.O. Box 1709  
 Olympia, Washington 98501-1709  
 (206) 695-5461

May 5, 1989

Daryl Gusey  
 Naches Ranger District  
 10061, Hwy 12  
 Naches, WA 98937

RE: White Pass Ski Area

Dear Mr. Gusey:

Our Headquarters Traffic section has analyzed the available data and determined that traffic on SR 12 will exceed the roadway capacity. While this is not a good situation, due to the nature of the traffic, it is considered acceptable.

Their primary concern is that the chain up area capacity will be exceeded, and this problem will have to be addressed.

A copy of the complete text of our Headquarters Traffic section letter is attached.

An accident analysis of the White Pass area shows the rate to be double the State average for this class of highway. Most accidents involve parked vehicles and vehicles entering and leaving the roadway. The uncontrolled nature of parking in this area will be aggravated further by the projected increase in traffic. Due to this we will require the following:

- 1) Left turn channelization.
- 2) Off Highway parking for the additional patrons.
- 3) A physical barrier between the traveling public and cars currently being parked along the roadway shoulder.
- 4) Common access points to and from parking areas.

As plans progress, please keep us informed.

Sincerely,

GARY F. DEMICH, P. E.

District Administrator

*G. Sorrell PE*

By: J. L. SORRELL, P. E.  
 Traffic Design and Operations Engineer

GFD:gc  
 JLS/JLM  
 Attachment

cc: Steve Jacobson: Keith Sholia: R. Goffman:

WASHINGTON STATE DEPARTMENT OF TRANSPORTATION

**FS Response:**

- The DEIS needs to speak to the concerns of parking and the need for additional room at chain-up areas.

The need for additional parking and additional room at chain-up areas has now been addressed more adequately in Chapters III and IV and under "Mitigation Measures" in Chapter II.

October 26, 1988

Wenatchee National Forest  
P.O. Box 811  
Wenatchee, WA 98801

Mr. Sonny J. O'Neal  
Forest Supervisor

SR 12 C.S. 2111 M.P. 151.1 Vic.  
2720/1950, Expand White Pass  
Ski Area

We appreciate the opportunity to comment during the "scoping phase" and look forward to a review of the draft environmental impact statement when it becomes available.

Our primary concern is the effect additional traffic will have on State Highway 12. As a minimum, improved parking and left-turn channelization will probably be required.

When a more definitive proposal is available, we will be better able to assess the impact on Highway 12 and be more specific in our comments.

Sincerely,

KEITH AROLA, P.E.  
Acting Dist. Administrator

*SKB*

By: KENNETH C. KIRKLAND, P. E.  
Dist. Assistant Proj. Dev. Engr.

REA:ld  
EGK  
cc: Records Control

Dist. Administrator	
State Admin. Officer	
Materials	
Personnel	
Supply Equip.	
Auto-Pri. Dev.	
Plan. & Design	
Trans. Planning	
Urban Eng.	
P.E.	
Construction Eng.	
Cost. Cont. Engr.	
Contractors	
Materials	
P.E.	
Oper. & Maint. Engr.	
Trans. & Equip. & Maint.	
Trans. Dev. & Oper.	
Trans. Analyst	
Trans. Survey	
Project Control	
Site Preparation	
Construction	
Site Management	
Site Management	



STATE OF WASHINGTON  
DEPARTMENT OF WILDLIFE

2802 Fruitvale Blvd., Yakima, WA 98902

Tel. (509) 575-2740

CLERT SWATCH  
Director

Don Bales  
Department of Ecology  
Mail Stop PV-11  
Olympia, WA 98504-8711

August 11, 1989

SUBJECT: WHITE PASS SKI AREA EXPANSION - D.E.I.S.

Dear Mr. Bales:

Representatives of the Department of Wildlife have reviewed the draft environmental impact statement (DEIS) for the proposed expansion of the White Pass Ski Area and offer the following comments.

In general we believe that the D.E.I.S. understates the impacts of the expansion, especially of full development alternatives 7 and 10, on fish and wildlife. Each expansion alternative would destroy wildlife habitat and lead to increased human disturbance. The most critical concerns are: old growth habitat, summer disturbance to big game, protection of water quality and protection of key habitats.

Alternatives 3, 6 and 7 would all involve removal of old growth forest that is suitable habitat for northern spotted owls and other old growth dependent species. No spotted owls were detected during previous surveys of the area but the habitat is suitable and owls are known to nest within a few miles east and west of the pass. The D.E.I.S. states that the area is too high for spotted owls, but there are records of nesting to nearly 4,300 feet and observations to 6,000 feet. The most probable use of the area would be as a low elevation travel corridor between eastern and western portions of the range. Since the northern spotted owl is a candidate for federal listing as a threatened species, any decision that would impact suitable habitat should be preceded by consultation with the U.S. Fish and Wildlife Service.

Letter to Don Bales  
August 11, 1989  
Page Two

Alternatives 8 and 10 will lead to increased impacts to fragile subalpine habitats and to increased disturbance to big game animals. The D.E.I.S. correctly states that the area provides summer range for deer, elk and mountain goats and that winter range is generally more limiting. However, this does not mean that summer range is unlimited or unimportant. Habitat alteration and human disturbance are increasing throughout the summer range and each project contributes to the cumulative effects. Summer operation of the ski area should not provide additional motorized access to the backcountry and wilderness. Continued operation of chair lift rides to Pigtail Peak should be contingent on monitoring and mitigation of impacts to wildlife and habitat. Interpretive opportunities should be offered near the top of the chair lift to avoid increasing disturbance levels over a larger area.

Protection of water quality should be a basic component of every alternative. Sewage treatment systems of the existing facilities should be modernized and enlarged to handle anticipated loading rates and prevent eutrophication of Leech Lake. Logging and soil disturbance should be minimized and followed by erosion control and revegetation.

Construction of roads, trails and runs should be planned to avoid impacts to key habitats. Springs, meadows and wet soil areas should be avoided because of their fragile nature and their importance to resident wildlife. Mineral licks, wallows, game trails and other areas of obvious wildlife concentrations should also be protected, especially during the snowfree seasons.

The D.E.I.S. lists incorrect common names for several wildlife species in the area. Rocky Mountain elk are the predominant subspecies in the area, not Roosevelt elk. Roosevelt elk do inhabit Washington but their range is west of the Interstate 5 corridor. The California wolverine referred to in the D.E.I.S. should simply be called wolverine and North American Lynx is more properly called Canada Lynx.

WASHINGTON STATE DEPARTMENT OF ECOLOGY

DEPARTMENT OF WILDLIFE

- a. In general, the DEIS underestimates impacts of the expansion, particularly in Alternatives 7 and 10. The most critical concerns are old growth habitat, summer disturbance of big game, protection of water quality, and protection of key habitats.
- b. Impacts to fish, wildlife and habitats could best be mitigated by implementing Alt. 4 or 5 for winter recreation and Alt. 9 for summer. There also needs to be an upgrading of the sewage system.

FS Response:

- (a) Further analysis of the potential effects of proposed actions on old growth habitat, summer disturbance to big game and protection of water quality and key habitats has to be completed. This is reflected in Chapter IV, and in the mitigation measures as described in Chapter II.
- (b) We agree that for Fish and Wildlife considerations, less development will have a reduced effect. In considering the combination of the multiple benefits that can take place on this area of land, as well as the trade-offs that will be necessary, the Forest Service-selected alternatives provide the best combination of uses.  
The sewer system will be upgraded according to Yakima County guidelines.

CENTRAL REGIONAL OFFICE

- c. Concerning any development in general, there may be a need for water rights permits in certain circumstances.
- (c) Proper procedures for Water Rights will be followed. Water Rights for the Ski Area are now in the name of the United States Forest Service.

Letter to Don Bales  
August 11, 1989  
Page Three

In conclusion, impacts to fish, wildlife and their habitats could be best mitigated by implementing Alternative 4 or 5 for winter recreation and Alternative 9 for summer recreation. This development, in combination with upgrading of the sewage system, would protect the most critical areas. Disturbance to spotted owl habitat and big game summer range would be minimized and pressure on wilderness resources would be reduced.

Thank you for the opportunity to review this D.E.I.S.

Sincerely,

*Ted A. Clausung*

Ted A. Clausung  
Regional Habitat Biologist

c: David Hudd  
Tara Zimmerman

434



STATE OF WASHINGTON

INTERAGENCY COMMITTEE FOR OUTDOOR RECREATION

500 Capitol Blvd, Apt. 11 • Tumwater Washington 98566 • (206) 337-1400 • FAX 337-1401

August 28, 1989

Wenatchee National Forest  
Attn: Public Affairs  
Post Office Box 811  
Wenatchee, Washington 98807

Subject: Draft EIS, White Pass Ski Area Proposed-Expansion  
FSU  
FCU  
TCU  
RCU  
SCU  
JCR  
SAC  
SAD  
SAB  
SAB

Although our agency was not included on the mailing list for the EIS, we offer the following comments and observations.

The Sixth Edition of Washington's Statewide Comprehensive Outdoor Recreation Plan (SCORP), 1985, noted that "about 97 percent of the needs for downhill skiing are being met by existing ski areas." At the same time, SCORP notes that "lift capacity tends to limit downhill skiing participation." In other words, supply tends to limit actual participation.

SCORP also notes that the greatest demand for additional lift capacity is in Planning Districts 4, 6, 11, and 12. The White Pass Ski Area is in Planning District 8. We note that the DEIS states that attendance at White Pass has increased "very little" during the past twenty years (page 1-19), and has actually declined 22 percent in the last decade (page 1-20).

As the Forest is aware, the IAC participated in the Pacific Northwest Regional Recreation Committee and its recreation demand study. The study projects that demand for downhill skiing will grow by 36 percent between 1987 and the year 2000. Cross-country skiing is projected to grow at a rate of 27 percent.

A key concern is the lack of balance between downhill and cross-country skiing in the DEIS. Cross-country and telemark skiers would be displaced from Rog Back Basin with no real mitigation. More balance between downhill and cross-country skiers could be achieved by modifying alternative 7: delete chairlift #6 and its access road, and provide a short trail from the top of chairlift #5 to the top of the basin to allow telemark/cross-country access.

Recently, the IAC has been working with the Department of Ecology on a project called Environment 2010. One of our conclusions for this document is the need to maximize semi-primitive land to help mitigate

Wenatchee National Forest  
August 28, 1989  
Page Two

the impacts of visitor use on primitive settings, the latter including designated Wilderness. Draft Forest Plans consulted in our research indicate that nearly all Wilderness areas in the State are at or near recreation capacity.

For this reason, we are concerned about the possibility of withdrawing land currently in designated Wilderness. As indicated in the Pacific Northwest Outdoor Recreation Survey, over half the recreationists in the "Hiking, Walking" category of this study prefer the primitive and semi-primitive end of the ROS. This number is important, as 75 percent of all State households participate in activities in the "Hiking, Walking" category.

We understand that the DEIS addresses land already withdrawn, but we also understand that the White Pass Ski Company's business plan calls for possible additional Wilderness withdrawal at a later time. If any withdrawal is made, Wilderness additions must be made to ensure that there is not net loss of acreage in this important part of the ROS.

Thank you for the opportunity to comment.

Sincerely,  
*Jim Eychaner*  
JIM EYCHANER  
Recreation Resource Planner

JE:jp

WASHINGTON STATE INTERAGENCY COMMITTEE FOR OUTDOOR RECREATION

(FS Response, continued)  
 and long lift lines could occur. The plans are to phase in the other Basin lift as demand warrants.  
 Telemark skiing and backcountry access will be available from the top of Chair Lift 5.  
 (b) Wilderness withdrawal and Wilderness additions can only be made by an Act of Congress

**FS Response:**

a. Due to a projected growth of 36 percent for downhill skiing and 27 percent for cross-country skiing by the year 2000, a key concern is the lack of balance between downhill and cross-country skiing in the DEIS. Modification of Alternative 7 could help mitigate this. Lift 6 and its access road could be deleted and a short trail provided from the top of lift 5 to the top of the basin to allow telemark/cross-country access.

(a) There are many different scenarios for the development of the entire area. Considering the projected growth of both alpine and nordic skiing the ID Team felt the demand for both could be satisfied for the market area served by the White Pass Ski Area. There is additional opportunity to expand the nordic terrain north of the highway but virtually no additional terrain for alpine skiing other than that considered. The balance, with total development, can be achieved.

b. There is concern that the White Pass Company business plan calls for possible additional Wilderness withdrawal at a later time. If this happens, Wilderness additions must happen to ensure no net loss of acreage to Wilderness.

Construction of only one chair lift in the Basin was considered in the evaluation of Alternative 4. It is felt that with only one chair lift much of the Basin would be accessible to alpine skiers whether it is groomed or not. There will be considerable area in the Basin that will not be groomed that will be difficult for alpine skiers to reach; therefore, it will be available to nordic skiers. Analysis also showed that with only one chair lift, bottlenecks



LONGVIEW CHAMBER OF COMMERCE

230

Longview Chamber of Commerce

1363 Olympia Way  
Longview, Washington 98632-3099  
Phone: (206) 423-8100

August 1, 1989

Mr. Sonny J. O'Neal  
Forest Supervisor  
Wenatchee National Forest  
301 Yakima Street  
Wenatchee, WA 98801

Dear Mr. O'Neal:

This letter is written to support the proposed expansion of the White Pass Ski Area.

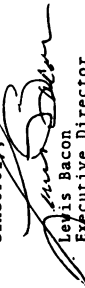
We feel that the proposed expansion of the White Pass Company will give the recreational facility the improvements needed to make it more financially feasible to serve primarily Washington residents.

We don't see the facility as a national destination for travel but the growing number of residents wanting mini-vacations during the winter here offer great promise.

We simply feel that the proposed expansion adds significantly to our great natural resources of the area.

We plan to be active in the support of this project.

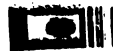
Sincerely,



Lewis Bacon  
Executive Director

LB:cs

cc: Marilyn DuVall  
Don Svith



**FS Response:**

(a) The Forest Service agrees that expansion into the Basin will provide additional recreational opportunities for many people.

a. The Chamber is actively supportive of the proposed expansion of the Ski Area into Hogback Basin; expansion will add significantly to the natural resources of the area [sic].

## USER GROUPS AND ORGANIZATIONS

There were 14 responses representing groups and organizations. One of these spoke for two groups.

### WASHINGTON WILDERNESS COALITION (WWC)

There are deficiencies in the DEIS, as follows:

Hogback Basin should be managed for cross-country skiing in winter and hiking during summer. There was no alternative for this in the DEIS.

Hogback Basin is of very special historical significance to Native Americans. The DEIS did not adequately speak to this.

In general, the WWC is not opposed to the expansion of White pass Ski Area outside of Hogback Basin. Alternative 1 is preferable, but a combination of Alternatives 2 and 3 would both expand the Ski Area and protect the basin.

### SIERRA CLUB - CASCADE CHAPTER

The DEIS should be rewritten to include a more balanced analysis of both downhill and cross-country skiing in the area development

An alternative which would manage Hogback Basin for cross-country skiing, snowshoeing and camping should be included in the DEIS

Information in the DEIS was supplied mainly by White Pass Company and others interested in the maximum development, with downhill skiing in mind.

Issues which should be more adequately discussed the the DEIS include Native American concerns, the uniqueness of the area, wildlife concerns, litter, the sewage system, traffic congestion, and safety.

The group opposes construction of lifts 5 and 6 in Hogback Basin. The basin is not good downhill terrain.

### **FS RESPONSE:**

The Hogback Basin cross-country skiing alternative has now been considered in modified Alternative 3 and in "Alternatives Considered But Not Fully Evaluated," Chapter II.

Additional discussion of the Indian concerns has been added in the FEIS.

### **FS Response:**

This has been accomplished in the FEIS.

Modified Alternative 3 now considers cross-country skiing in the Basin.

Some of the information supplied by the White Pass Co. was from professional consultants hired for input into the original Environmental Analysis. This information was thoroughly reviewed by Forest Service professionals, declared valid and used in the preparation of the DEIS.

These topics have been more adequately discussed in the FEIS.

The Forest Service feels most of the basin is excellent alpine skiing terrain.

There is a fear of further expansion into Miriam Basin and negative impact on the Pacific Crest National Scenic Trail (PCT).

In general, the Sierra Club does not object to expansion of the Ski Area within the current permit boundary. The construction of Lift 7 is least objectionable to them. They support additional groomed cross-country ski trails as long as there is free access, available and signed, to the backcountry beyond.

Considering summer alternatives, continuation of summer chair lift rides to Pigtail Peak is acceptable. This use needs to be monitored to ensure reduced impacts on Wilderness. The proposed trail would be acceptable if it can be routed far enough from important wildlife habitat.

#### MOUNT SPOKANE SKIING CORP. (MSSC)

Alternatives 7 and 10 (S) are favored. The steady growth at Mt. Spokane Ski Area reflects an increased recreational interest by the public for both summer and winter opportunities in ski areas. This is why the MSSC supports the continued growth of the ski industry.

#### THE MOUNTAINEERS

The Forest Service Should accept Alternative 1, 2 or 3, respectively. Any expansion of the Ski Area should be outside Hogback Basin.

The gentle terrain of the Basin would not attract intermediate and advanced skiers. There are much steeper slopes available for development outside the Basin and adjacent to the Ski Area.

Approval of this Basin expansion will give White Pass Co. the ridgetop access needed to expand further into Wilderness.

#### **FS Response:**

Expansion cannot take place into Miriam Basin because it is formally designated Wilderness. Analysis indicates that any impact on the PCT is within the guidelines for the trail.

White Pass Co. intends to provide additional groomed nordic ski trails. Access to the Wilderness will be free and unrestricted as long as the use is within the Limits of Acceptable Change as established by the Wenatchee National Forest Standards and Guidelines. Signs will be provided where needed.

Use of the area, especially activity in the Wilderness, will continue to be monitored. Professional wildlife biologists will be consulted for the specific location of this trail.

#### **FS Response:**

The purpose of the FEIS is to provide basis for the proper decision as to how this land should be managed.

Forest Service analysis indicates the terrain in Hogback Basin should attract intermediate skiers and the slopes served by Lift 7 will attract advanced skiers. Slopes outside of the Basin have been developed for skiing, and those that have not are mostly in Wilderness and are unavailable for development.

Expansion into Wilderness is not possible.

Congress did not mandate any type of skiing or any development when they took this area out of Wilderness.

Relocation of the PCT will eliminate the outstanding views hikers now experience.

The Final EIS needs to speak to alternatives for off-trail cross-country skiing.

**FS Response:**

The Forest Service agrees. The Senate report provides direction to the Forest Service to study the area for its skiing *potential*. This is the purpose of the analysis.

The PCT will not be relocated.

The FEIS speaks to the other cross-country areas in the vicinity of White Pass that are available to off-trail cross-country skiing.

**WASHINGTON TRAILS ASSOCIATION**

The significant impacts on the PCT due to development in Hogback Basin are inconsistent with purpose of a National Scenic Trail.

Regarding PCT proposed relocation, neither the DEIS nor public meetings provided details on where, when or how much of the PCT is to be relocated. With National Forest trail funds being inadequate, unnecessary expenditures for any relocation is opposed.

Summer Alternative 10(S) will increase Wilderness area impacts by increasing potential people use, potential trail bike use, and the short-cutting damage to the PCT from other trails.

Helicopter noise during lift construction would seriously affect trail users' experience and may also temporarily close portions of the PCT.

Considering winter recreation use, the DEIS fails to detail any mitigation of the displacement of backcountry skiers if the Preferred Alternative is adopted.

An alternative to develop a full range of cross-country skiing opportunities in Hogback Basin was not included; one must be presented in the FEIS.

**FS Response:**

The analysis indicates there will not be significant impacts on the PCT, and the proposal is not inconsistent with the Management Guidelines for the trail.

Relocation is not proposed in the FEIS.

The Forest Service will monitor the use of the area and take appropriate action if physical or social impacts exceed the Limits of Acceptable Change.

The Forest Service will control the time of helicopter use and will choose those times when public use of the area is at its lightest.

Many winter recreation opportunities are now displayed in the FEIS.

Nordic skiing in Hogback Basin has now been fully evaluated in the FEIS.

**NORTH CASCADES CONSERVATION COUNCIL (NCCC)**

The NCCC finds the DEIS deficient in facts and alternatives and biased in favor of development.

The EIS should:

- Contain re-evaluated and specific conditions for denying downhill ski development in Hogback Basin.
- Fully expand a proposal for exclusive hiking, horseback riding and cross-country skiing use of the Basin.
- Develop a proposal for new downhill ski facilities, if justified, outside the Basin.

**FS Response:**

The FEIS includes additional facts and a modified alternative.

In the analysis, the Forest Service could not find specific conditions for denying downhill ski development in Hogback Basin. In the evaluation of the various alternatives for summer and winter use, hiking and cross-country skiing were evaluated. Horse use on the Basin Trail was considered, but it was found to be incompatible with the hiker/interpretive programs planned during high-use hiker months in summer. There may be opportunities for horse use during the fall months, however. The Forest Service could find no justification for new downhill skiing facilities outside Hogback Basin, other than those evaluated in Alternatives 1, 2 and 3.

**ELLENSBURG CROSS-COUNTRY SKI CLUB**

White Pass Company should not expand into Hogback Basin.

Cross-country issues and facts have not been accurately portrayed in the DEIS. Sections of the DEIS dealing with winter recreation should be rewritten to provide an objective presentation of the cross-country skiing issues in the Basin, and the information provided should be included in the analysis.

**FS Response:**

The FEIS is more complete in this respect than the DEIS was.

**FEDERATION OF WESTERN OUTDOOR CLUBS –  
PACIFIC CREST TRAIL CONFERENCE (FWOC)**

The FWOC unanimously approved a formal resolution rejecting White Pass Company expansion into Hogback Basin, since the area is suited to cross-country skiing, snowshoeing, winter camping, etc.

The PCT Conference is opposed to any relocation of the PCT.

**FS Response:**

The FEIS indicates the PCT will not be relocated.

**WASHINGTON SKI TOURING CLUB**

The club opposes any further downhill skiing development in this area. There should be an alternative for hiking and cross-country skiing only in Hogback Basin. Alpine skiing is declining in the White Pass area and there is no need for downhill expansion.

**FS Response:**

Alternatives 1 and 2 leave the Basin in its present condition. Modified Alternatives 3 and 10(S) address hiking and cross-country skiing in Hogback Basin. The FEIS addresses the demand for alpine as well as nordic skiing.

**WASHINGTON STATE SKI INDUSTRIES**

The Ski Industries support Alternative 7 for maximum expansion because it will provide more recreational opportunities and will not affect other uses of the area. This expansion into Hogback Basin will benefit, both economically and recreationally, a large number of people and have almost no negative effects on others.

**FS Response:**

Effects and benefits of the proposal have been evaluated in the FEIS.

**PACIFIC CREST NATIONAL SCENIC TRAIL ADVISORY COUNCIL**

After considering White Pass ski development issues, the Council prefers to leave the trail where it is if at all possible and to apply the location concept of the trail, including observing activities and uses of the land through which the PCT passes.

**FS Response:**

The FEIS does not propose to move the trail.

**YAKIMA VALLEY AUDUBON SOCIETY**

- The Society does not support any commercial expansion into Hogback Basin.
- Other Ski Area expansion proposals would not be objected to, provided the proper environmental safeguards are adhered to.
- The Society supports Alternatives 2 and 3, and would support development of a nordic ski area in the Basin.
- Hogback Basin should not become a stepping stone for further expansion into Wilderness by the White Pass Co.
- Modernizing the present Chair Lifts 1 and 2 would reduce the waiting lines sufficiently to increase utilization of the area.

**FS Response:**

The FEIS addresses the points raised by the Audubon Society.

Expansion into Wilderness is not possible.

This would be a management decision of the White Pass Company, which they have not proposed.

### THE CASCADIANS

The club opposes any kind of downhill ski development into Hogback Basin.

Cross-country skiing represents the ideal "highest and best use" of Hogback Basin. Existing backcountry recreational opportunities in the Basin should be retained.

A 22-page response, including exhibits, details The Cascadians' position on the proposed expansion and deficiencies in the DEIS. A summary of those points is contained in the following.

- The DEIS is inadequate in numerous areas and not in compliance with NEPA. The Forest Service has not complied with the public participation requirements of NEPA.
- The DEIS does not present an adequate range of reasonable alternatives, specifically, there is no alternative for the exclusive development of cross-country skiing in the Basin.
- The DEIS is biased in favor of maximum downhill ski development.
- The DEIS does not demonstrate in a meaningful way that there is a real demand to expand White Pass Ski Area.
- The Cascadians does not oppose the expansion of White Pass Ski Area into other more suitable areas outside Hogback Basin, such as east or west of the Permit Area.

### **FS Response:**

Determining the highest and best use of this area of land was the purpose of the NEPA process which was used in development of the FEIS.

The Forest Service feels the DEIS and the public participation did meet the intent of NEPA and that the range of reasonable alternatives was adequate.

Additional or modified alternatives can be presented in the FEIS if they are in response to public comment.

The DEIS was unbiased and evaluated the proposal in an unbiased way.

Further research has gone into the demand for both alpine and nordic skiing and the projected demand indicates it is adequate to allow expansion for both types of skiing.

Expansion of the alpine ski terrain east or west of the present ski area is not possible due to the formal Wilderness classification of these lands.

### HOGBACK BASIN PRESERVATION ASSOCIATION

The group strongly opposes any developments or ground-disturbing activities in Hogback Basin. Favored alternatives in the DEIS are Alternatives 1 or 2, and 8(S).

### **FS Response:**

The concerns of the Hogback Basin Preservation Association were fully considered by the ID Team.

**ADDITIONAL COMMENTS**

- The DEIS is unsatisfactory because it does not contain an alternative for managing the cross-country skiing potential in Hogback Basin.
- The Basin terrain would not allow for good alpine skiing.
- The expansion would adversely impact the PCT.
- Cumulative impacts on Wilderness are not adequately addressed in the DEIS.
- The Forest Service needs to consider concerns of Native Americans in depth.
- White Pass Co. has not justified the need for this expansion based upon any verified demand or economic considerations. In support of this statement, see enclosed "Economic Policy Analysis of White Pass Ski Area DEIS" by Richard A. Lovett, Ph.D., J.D., which demonstrates that White Pass Co. has not set forth any rational economic justification for this proposed expansion.
- Finally, if the Forest Service continues with this EIS document, there should be a supplement to the DEIS to address the deficiencies above.

**FS Response:**

The FEIS identifies measures that will mitigate Wilderness impacts to the standards indicated in the *Wenatchee National Forest Land and Resource Management Plan*. Additionally, the FEIS contains expanded information on demand and economics and Alternative 3 was modified to include cross-country skiing potential in Hogback Basin.

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## THE GENERAL PUBLIC

### OPPOSITION TO SKI AREA EXPANSION:

There were 336 letters received which expressed opposition to the proposed expansion. In addition, there was a petition with 15 signatures in support of Alternative 1, 2 or 3. Approximately 90 percent of the responses were original letters; the remainder of the respondents used the Forest Service Response Forms to transmit their comments. In the original letters, a preference for a specific, named alternative was not usually mentioned.

Respondents expressing opposition to the White Pass Company development proposal were specifically against development entry into Hogback Basin. However, a majority of these respondents did not object to expansion outside the Basin, if the need exists, nor did they object to improving and/or modifying the existing Permit Area at White Pass. Approximately 6 percent of these respondents stated a preference for the No Action alternative. Many letters suggested that cross-country skier use is on the increase, but not downhill use. Numerous respondents also noted that although there had been a cross-country ski alternative listed by the Forest Service in previous documents, it was dropped in the DEIS. A majority of respondents wanted to see a cross-country ski plan developed for Hogback Basin and included in the EIS.

Many respondents who expressed opposition to development in Hogback Basin also expressed a desire for a new alternative which would speak to the management of the Basin for cross-country skiing, snowshoeing and winter camping during the winter and for hiking during the summer.

Additionally, there appeared to be a consistency of concerns mentioned throughout the opposition responses. Numerous letters stated the following concerns in a variety of ways:

- Congress did not mandate any particular type of ski development for the 800 acres taken out of Wilderness in 1984.

Letters with Comments on this Subject include: 68, 140, 155, 340, 409, 432, 490.

#### **FS Response:**

Refer to explanation in Chapter I, "Portion of the Wilderness Deleted." The purpose of the FEIS is to study the potential for both alpine and nordic ski development in the 800 acres withdrawn from the Goat Rocks Wilderness.

- Hogback Basin is unique and should be preserved for hiking and cross-country skiing, not developed for downhill skiing.

Letters with Comments on this Subject Include: 14, 16, 58, 97, 100, 101, 107, 112, 114, 116, 117, 118, 122, 124, 125, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 139, 140, 141, 143, 144, 145, 146, 147, 148, 149, 152, 151, 153, 154, 155, 156, 160, 161, 162, 164, 167, 169, 171, 174, 175, 176, 177, 182, 183, 184, 186, 188, 193, 197, 198, 201, 205, 206, 213, 214, 218, 219, 220, 222, 226, 227, 228, 231, 235, 236, 237, 240, 243, 246, 247, 248, 255, 256, 266, 268, 269, 271, 273, 274, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 287, 291, 292, 296, 297, 298, 300, 301, 302, 303, 304, 305, 307, 314, 315, 316, 321, 324, 325, 326, 327, 329, 331, 333, 334, 335, 337, 338, 342, 344, 349, 350, 351, 353, 355, 356, 357, 358, 359, 360, 364, 366, 373, 374, 375, 376, 378, 382, 384, 385, 386, 389, 390, 393, 395, 398, 399, 400, 401, 402, 403, 404, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 427, 430, 431, 432, 433, 444, 445, 446, 447, 453, 456, 457, 458, 459, 461, 462, 463, 464, 465, 467, 470, 473, 476, 478, 479, 480, 482, 485, 486, 489, 490, 492, 493, 494, 496.

**FS Response:**

The purpose of the EIS was to examine the uses that would provide the greatest good for the greatest number in the long run. Both alpine and nordic skiing can take place in the winter and hiking is available in the summer.

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- If White Pass Co. development in Hogback Basin happens, other developers will consider this a go-ahead for more deletions from Wilderness for private profit.

Letters with Comments on this Subject Include: 45, 107, 109, 112, 140, 157, 233, 237, 250, 256, 266, 275, 286, 287, 324, 340, 343, 352, 399, 406, 413, 476.

**FS Response:**

Wilderness classification, declassification or boundary adjustment can be made only by an Act of Congress. These actions are beyond the scope of this document.

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- Development of lifts in Hogback Basin will gain the White Pass Company the ridgetop access it will need for future expansion into the Wilderness; this is unacceptable.

Letters with Comments on this Subject Include: 86, 112, 140, 205, 236, 243, 251, 255, 256, 265, 266, 285, 305, 446, 476, 480, 493.

**FS Response:**

This is an opinion and projection of what may happen in the future. The original White Pass Master Plan did show proposed development in the Wilderness, but this was not agreed to by the Forest Service. Refer to Chapter I, "Planning for Expansion." Again, only Congress has the power to classify, declassify, or make boundary adjustments in regards to Wilderness.

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- Since White Pass is currently operating at 60 percent of "comfortable capacity" and 27 percent of maximum slope capacity, there is skepticism about the basic assumption in the DEIS that sufficient downhill skier demand exists to warrant examination of further development of alpine skiing facilities at White Pass.

Letters with Comments on this Subject Include: 9, 45, 58, 68, 97, 99, 107, 109, 112, 117, 123, 131, 140, 134, 139, 141, 151, 157, 158, 160, 161, 162, 163, 164, 166, 168, 169, 171, 172, 174, 176, 193, 194, 198, 200, 202, 218, 219, 220, 226, 231, 233, 236, 240, 247, 250, 251, 252, 255, 256, 265, 267, 271, 276, 277, 278, 279, 285, 286, 287, 293, 296, 303, 304, 305, 310, 314, 316, 317, 321, 322, 324, 327, 330, 331, 334, 335, 336, 350, 352, 371, 389, 390, 393, 396, 402, 405, 406, 408, 411, 416, 422, 423, 424, 426, 427, 428, 429, 430, 431, 432, 444, 446, 447, 449, 456, 457, 458, 460, 462, 463, 468, 470, 477, 478, 480, 484, 486, 489, 491.

**FS Response:**

Refer to "Skier Demand" in Chapter I. With projections of increased population growth for areas where White Pass skiers originate, as well as information about what skiers today desire, our analysis indicates adequate demand probably exists to warrant improvement of and/or expansion of the Ski Area. Increased marketing programs will also have a bearing on the number of skiers who frequent the Ski Area. Demand is an estimate as to what will happen in the future and is affected by many variables, as described in Chapter I.

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- The DEIS is a flawed document; the ID Team was heavily biased in favor of development in Hogback Basin.

Letters with Comments on this Subject Include: 45, 109, 161, 170, 279, 324, 340, 406, 444.

**FS Response:**

This is an unsubstantiated claim. The interdisciplinary (ID) team who worked on the DEIS an FEIS included a silviculturist, a cross-country skiing expert, a Wilderness expert, a landscape architect, an outdoor recreation planner, a geologist/engineer, and a specialist in developed-recreation, as well as a host of contributing specialists with expertise in threatened and endangered plant and animal species, archeology, soils, winter sports, interpretive naturalist programs, fisheries biology, economics, avalanche hazards, and wastewater disposal systems. The Forest Service believes their analysis efforts were unbiased.

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- An additional survey for spotted owls should be conducted in the area prior to any development, as it is an important corridor linking eastern and western populations.

Letters with Comments on this Subject Include: 480

**FS Response:**

Additional surveys are being conducted as recommended also by the Federal Fish and Wildlife Service. When these surveys are completed there will be further consultation with the FWS. Project implementation will comply with the Endangered Species Act (PL 93-205).

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- Development in Hogback Basin would impact the PCT. The Forest Service wants to relocate the Crest Trail down and away from the Crest, eliminating outstanding views for hikers.

Letters with Comments on this Subject Include: 28, 91, 96, 101, 103, 104, 107, 109, 117, 132, 133, 135, 136, 139, 140, 157, 161, 170, 175, 182, 183, 194, 198, 200, 201, 213, 219, 221, 224, 226, 236, 246, 255, 256, 266, 271, 272, 285, 286, 287, 295, 296, 305, 307, 314, 317, 324, 327, 333, 340, 351, 353, 366, 371, 376, 389, 390, 393, 394, 398, 399, 406, 409, 410, 412, 413, 415, 417, 422, 423, 429, 430, 432, 444, 455, 459, 468, 470, 472, 480, 489, 490, 492, 493.

**FS Response:**

Possible relocation of a small segment of the PCT was discussed in the DEIS. This possible relocation may have improved the views for hikers by placing the trail closer to the Crest. There was never any intention to move the trail down and away from the Crest. During the public involvement and after taking another look at the situation, it has been decided to leave the trail where it is.

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- The DEIS does not speak to the issue of mountain bikes on Basin Trail.

Letters with Comments on this Subject Include: 236, 256, 266, 305, 490, 492.

**FS Response:**

The legend on the Alternative 10(S) map caused some confusion about where mountain bikes would be allowed. This has now been clarified on the alternative map and in the text. Refer to "Mountain Biking and Running Camp" in Chapter III.

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- Hogback Basin is a sacred area for the Yakima Indians and more consideration should be given to their desires and concerns.

Letters with Comments on this Subject Include: 58, 86, 103, 104, 109, 112, 123, 129, 133, 140, 148, 151, 152, 155, 177, 206, 220, 227, 236, 256, 271, 285, 305, 317, 327, 329, 334, 340, 351, 394, 396, 403, 405, 409, 413, 417, 422, 429, 444, 457, 472, 476, 480, 489, 496.

**FS Response:**

The Forest Service met several times with the Yakima Indian Nation Cultural Committee to address their concerns. The committee members did indicate that all of the mountains were considered sacred and that Hogback Basin did hold cultural and religious significance. However, they did not identify specific cultural use areas that the proposed developments might affect.

- Weather and snow are not reliable to attract additional skiers.

Letters with Comments on this Subject Include: 58, 178, 310, 336.

**FS Response:**

Past weather and snowfall records indicate the conditions are in fact very attractive to skiers. This is also evidenced by the past success of the Ski Area.

- The DEIS failed to consider possible downhill development outside Hogback Basin.

Letters with Comments on this Subject Include: 16, 28, 109, 112, 117, 124, 144, 147, 163, 167, 170, 171, 193, 248, 260, 262, 264, 268, 270, 271, 273, 284, 310, 328, 338, 357, 366, 374, 376, 383, 387, 394, 406, 412, 415, 427, 428, 445, 458, 460, 472, 479, 482, 490, 492.

**FS Response:**

Alternative 2, "Improvements and Modifications of Existing Permit Area," was considered as the potential for development outside of Hogback Basin. The existing Permit Area, as well as the proposed expansion area, is surrounded by Wilderness where commercial development is prohibited.

- White Pass Company has violated the Wilderness boundary in the past, sending large numbers of runners from their running school into the Wilderness and using their grooming machine inside the Wilderness boundary.

Letters with Comments on this Subject Include: 256, 255.

**FS Response:**

This is an administrative problem and corrective measures are being taken in those cases. Increased administration will prohibit these actions in the future.

- The gentle terrain in Hogback is not conducive to challenging downhill skiing; it is great for cross-country skiing.

Letters with Comments on this Subject Include: 28, 58, 68, 76, 86, 97, 99, 109, 115, 123, 116, 127, 138, 140, 150, 158, 161, 164, 170, 173, 175, 186, 194, 212, 232, 236, 237, 238, 241, 243, 249, 250, 255, 256, 260, 261, 262, 263, 264, 268, 271, 279, 285, 286, 287, 292, 304, 305, 307, 310, 312, 316, 318, 321, 322, 323, 327, 333, 335, 336, 338, 339, 352, 353, 359, 363, 366, 371, 402, 408, 430, 431, 446, 468, 491, 492, 496.

**FS Response:**

The terrain analysis prepared by the Forest Service indicates that a large portion of the Basin is very suitable for beginner and intermediate alpine skiers. Much of the lower part of the Basin is gentle terrain and is also very suitable for nordic skiers.

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- The DEIS does not speak adequately to parking problems and highway traffic congestion. The accident rate on Highway 12 has doubled. Full development in this area will have a drastic impact.  
Letters with Comments on this Subject Include: 58, 97, 255, 267, 286, 287, 324, 406, 411, 432, 447, 486.

**FS Response:**

After several meetings with the State Department of Transportation, it was determined that short- and long-term solutions to the parking and traffic congestion are possible. Refer to Chapter II, "Highway Mitigation."

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- The DEIS is flawed because it does not provide mitigation of lost backcountry opportunities and fails to assess the impact of alternatives on adjacent backcountry nordic and telemark areas where displaced backcountry users will be forced to go.  
Letters with Comments on this Subject Include: 58, 233, 255, 286, 287, 306, 324, 353, 490, 494.

**FS Response:**

A very detailed survey was made of winter opportunities in the area of White Pass and it appears there are ample areas where very similar winter recreation activities can take place. Refer to Chapter III, "Winter Recreation-White Pass and Vicinity."

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- Flora and fauna in Hogback Basin will be greatly damaged by snow compaction.  
Letters with Comments on this Subject Include: 58, 74, 255, 432.

**FS Response:**

Refer to Chapter IV, "Vegetation," and Chapter II, "Mitigation." Although there may be some effect on the flora by snow compaction, it is considered acceptable due to the small amount of area that will be affected. The vegetation will not be completely destroyed, but over a long period the type of vegetation on the compacted areas may change. In other developed ski areas in Washington, snow compaction effects on flora and fauna have not been identified as adverse effects.

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- The DEIS must speak more adequately to septic systems, water quality, wildlife impacts and uniqueness of the Hogback Basin area.  
Letters with Comments on this Subject Include: 96, 324, 376, 492.

**FS Response:**

These subjects have been more fully discussed in the FEIS. Refer to Chapter III, IV and the "Mitigation" sections in Chapter II.

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- There is no cross-country skiing alternative in the DEIS; one is needed to reflect the growth in this sport.

Letters with Comments on this Subject Include: 96, 97, 109, 136, 140, 151, 161, 170, 172, 186, 236, 241, 250, 253, 255, 256, 260, 262, 264, 271, 295, 303, 305, 320, 323, 324, 330, 335, 357, 366, 394, 405, 406, 412, 430, 432, 458, 468, 490, 492, 493.

**FS Response:**

Alternative 3 now contains the analysis of cross-country in connection with development of Chair 7. Under "Alternatives Considered but Eliminated from Detailed Study," Chapter II, number 7 discusses development of cross-country skiing in Hogback Basin.

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- Hogback Basin should be managed for cross-country skiing, snow shoeing and camping in the winter, and hiking in the summer. Limited signing and trail marking could be acceptable. Cross-country skiing and downhill skiing are not compatible within the Basin.

Letters with Comments on this Subject Include: 171, 227, 247, 271, 278, 351.

**FS Response:**

Refer to the modified Alternative 3 and "Alternatives Considered but Eliminated from Detailed Study" in Chapter II. An alternative was considered that provided for the Hogback Basin to be managed only cross-country skiing, snowshoeing and winter camping. However, this alternative was found not to be a feasible one. Alternative 7 describes summer hiking activities.

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- Cross-country skiing and downhill skiing are not compatible within the Basin.

Letters with Comments on this Subject Include: 97, 202, 250, 286, 287, 321, 464, 471, 490.

**FS Response:**

Many ski areas allow Alpine and Nordic Skiing to take place on the same slopes and in the same basins. This is occurring at the present time in the existing ski area. Alternatives 1 and 2 allow the present uses to continue.

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- A combination of Chair Lift #7 and the mid-mountain warming hut would be acceptable as long as no development happens in Hogback Basin.

Letters with Comments on this Subject Include: 198, 243, 348, 391, 444, 449, 488.

**FS Response:**

Modified Alternative 3 now provides for Chair Lift #7 and the mid-mountain warming hut. With this alternative no chair lifts would be built in the Basin. This alternative, even though it does provide for a groomed trail in the more gentle terrain of Hogback Basin, as well as for non-groomed but marked trails, was developed in response to input from a segment of the nordic skiing community.

- Development in Hogback will result in more avalanche related injuries and rescues as backcountry users are pushed into unsafe areas; the DEIS does not contain adequate mitigation measures.

Letters with Comments on this Subject Include: 58, 76, 227, 286, 287, 295, 353, 376, 388, 490, 494.

**FS Response:**

The backcountry skiers are free to go where they desire. A Ski Area boundary Management Plan has been developed which will assist in preventing skiers from unknowingly going into hazardous areas.

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- Alternative 8(S), No Change or Alternative 9(S) could provide acceptable summer management.

Letters with Comments on this Subject Include: 9, 220.

**FS Response:**

These Alternatives have been dropped from the analysis and included in combined winter summer alternatives, as appropriate.

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- Greatly increased summer use impacts from the new lift on Shoe Lake and the Wilderness in general are unacceptable.

Letters with Comments on this Subject Include: 156, 279, 293.

**FS Response:**

New chair lifts will not be operated in the summer for public use. Winter and summer Wilderness use will be monitored and if overuse becomes a problem, appropriate action will be taken.

### SUPPORT OF SKI AREA EXPANSION

A total of 147 respondents express support for expansion and development of downhill facilities into Hogback Basin by the White Pass Company. The majority of these respondents used the Forest Service Response Form sent out with the information packet to provide comments. A petition, signed by 535 people in support of maximum expansion (Alternative 7), was also received.

Approximately 80 percent of these respondents provided strong, supportive comments in favor of Alternative 7. They felt that this expansion would be the highest and best use of the area because of the multiple benefits it would provide to tourists, hikers, downhill and cross-country skiers, as well as because of the minimal environmental impact it would have.

Over 38 percent of these respondents were strongly supportive of Summer Alternative 10 (Enhancing Recreation Opportunities Outside of Wilderness While Protecting Wilderness Values).

### A summary of a variety of comments and concerns contained in the support letters:

- Relocation of the PCT may be favored. If relocated by the Forest Service, it would be easier to maintain (presently, parts of it can be likened to a ditch), and it would be higher on the ridge where views to the east would be gained and improved overall.

Letters with Comments on this Subject Include: 196, 215, 216.

**FS Response:**

Through further on-on-the-ground review, as well as more in-depth review of the Comprehensive Management Plan for the Pacific Crest Trail, it was determined that it would be acceptable to leave the trail in its present location and to increase the amount of upkeep needed to maintain it to the proper standard.

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- Winter weekends at White Pass Ski Area are very crowded, bordering on the unsafe at times because of the crowds. Expansion will alleviate the crowding and make better and more interesting runs.

Letters with Comments on this Subject Include: 1, 54, 80, 102, 187, 203, 215, 244, 245, 439, 452.

**FS Response:**

The Forest Service generally agrees with this analysis but has determined that only on a few of the weekends is comfortable capacity of the Ski Area exceeded.

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- In 1984, the Hogback Basin land was released from Wilderness because of Congressional interest in that area for potential downhill skiing development. [Congressman Morrison's letter was often cited.] Cross-country skiing is an assumed use there also.

Letters with Comments on this Subject Include: 1, 24, 95, 308, 367, 370.

**FS Response:**

The Forest Service agrees with this statement.

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- In response to the concerns of some groups and individuals about a possible precedent being set by the deletion of the Hogback Basin area from Wilderness designation, it should be noted that while 800 acres were deleted, 23,00 acres were added to this Wilderness in 1984. Also, Wilderness cannot be easily changed, it is an Act of Congress.

Letters with Comments on this Subject Include: 87, 106, 257, 367, 437, 443.

**FS Response:**

The records indicate this is true.

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- The DEIS gives a fair analysis of a difficult situation in a professional manner.

Letters with Comments on this Subject Include: 20, 21, 39, 40, 42, 46, 52, 60, 62, 77, 180, 203, 368, 450.

**FS Response:**

FS appreciates this observation.

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- The idea of mountain bike trails is okay; however, perhaps the trail development on the north side of the highway could be divided for mountain bikes and hikers.

Letters with Comments on this Subject Include: 89.

**FS Response:**

This is an administrative decision which can only be made after thorough analysis of the situation. Then appropriate action can be taken.

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- Parking needs should be more thoroughly discussed.

Letters with Comments on this Subject Include: 65, 85.

**FS Response:**

This issue has been more thoroughly addressed in Chapter II.

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- Maximum expansion to meet recreational needs will be a financial plus to this whole area in many ways and hopefully offset the financial impacts of declining timber harvest.

Letters with Comments on this Subject Include: 22, 32, 39, 53, 60, 63, 67, 95, 119, 189, 195, 210, 370, 425.

**FS Response:**

Economic projections indicate this is true.

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- The Yakima Tribes do not have valid claims and considerations in Hogback Basin beyond the responsible management of environmental concerns.

Letters with Comments on this Subject Include: 196.

**FS Response:**

Although Hogback Basin is west of the Cascade Crest, it is considered to be an area that may have traditionally been used by the Yakima tribes and can be considered as part of the ceded area.

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- Public comments need to respond to correct facts, not misinformation. There has been a variety of misinformation published in the newspaper and in newsletters published by opposition groups.

Letters with Comments on this Subject Include: 120, 204, 210, 216, 440.

**FS Response:**

The Forest Service agrees.

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- Building a "half pipe" near Chair 3 for snow boarders is a good idea.

Letters with Comments on this Subject Include: 15, 30.

**FS Response:**

Development of this type of facility will depend on demand and the desire of the company to make this type of investment.

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- The fact that White Pass Company has chosen to develop an extensive cross-country complex alongside downhill facilities makes this expansion very attractive to skiers who enjoy both types of activities. Alpine and nordic skiers can co-exist very well here.

Letters with Comments on this Subject Include: 319, 332, 365, 379, 441.

**FS Response:**

The Forest Service agrees with this comment, but there is a limit to the number of alpine and nordic skiers who can coexist in one area on the same slopes. The type of experience desired by many of the skiers differs, and when slopes become too crowded, this expected experience cannot be realized. White Pass Co. does provide for nordic skiers who desire to telemark the groomed slopes and also provides one-ride lift tickets to those nordic skiers who desire to gain elevation via the chair lifts to get to the backcountry. They also provide for the groomed-track nordic skier who desires this type of experience.

- The Ski Area needs to look to the future and put in modern, high-speed quad lifts.

Letters with Comments on this Subject Include: 2, 15, 215, 442.

**FS Response:**

The Forest Service generally leaves these decision up to the permittees who have the expertise in this area; it is their money being invested. There is always consultation and discussion concerning the type of equipment installed, and the Forest Service managers will not approve a Site Development Plan unless they feel assured the right decision is being made.

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- Some terrain in Hogback is non-threatening for beginners, some is excellent for intermediate to advanced. This will be a very popular downhill area since snow conditions are generally good.

Letters with Comments on this Subject Include: 19, 448, 466.

**FS Response:**

Forest Service generally agrees except there is very little advanced terrain for alpine skiing in the Basin. Most of the upper reaches of the Basin would be considered difficult terrain for the intermediate nordic skier.

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- The warming hut is a real plus in the expansion plans. It is greatly needed.

Letters with Comments on this Subject Include: 6, 72, 215, 365, 370.

**FS Response:**

The Forest Service agrees.

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- Although expansion is favored, there is a concern for traffic control and safety on Highway 12. The EIS should address this more adequately.

Letters with Comments on this Subject Include: 34, 191.

**FS Response:**

Refer to Chapter II, "Mitigation," and Chapter III, "Transportation." The FEIS addresses this issue more than the DEIS did.

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- Disabled individuals will be able to enjoy this area if it is developed. Without some type of mechanical assistance, these people are excluded from enjoyment of the area. A summer chair lift is a must for people with health problems or who lack physical stamina.

Letters with Comments on this Subject Include: 22, 119, 181, 196, 215, 440.

**FS Response:**

The FEIS indicates that Chair Lift 1 would continue to operate, providing service for physically and mentally challenged citizens. Facilities at the base area will be accessible to the physically challenged as well.

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- Now that Hogback Basin is out of Wilderness, it would be better to have White Pass Company manage the area than see it destroyed by snowmobiles, jeeps, etc.

Letters with Comments on this Subject Include: 215.

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**FS Response:**

The Forest Service had never intended that the area be open to public use via snowmobiles, motorcycles, 4-wheel drives, or other wheeled vehicles.

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- It is more efficient, given the need, to expand the area for downhill skiing assets at White Pass than to construct another new ski area.

Letters with Comments on this Subject Include: 319, 443, 451.

**FS Response:**

The Forest Service agrees.

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- There has been enough talk about development; now it is time to act.

Letters with Comments on this Subject Include: 56, 85, 211.

**FS Response:**

This is the purpose of the FEIS. It will provide the basis for appropriate action.

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- White Pass Company has been responsible and conservative in operations and can be trusted to preserve the land and develop it in the best way possible.

Letters with Comments on this Subject Include: 35, 81, 105, 120, 209, 365.

**FS Response:**

White Pass Company has been a reliable and successful permittee since 1955.

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- Construction of Lift 5, then 7, then 6 appears to open more mountain to more people faster than the 5, 6 and 7 sequencing.

Letters with Comments on this Subject Include: 368.

**FS Response:**

This may be so, but the sequence of construction depends on many factors other than timing. The construction of Lift 6 will provide access to some choice skiing terrain in the Basin, and construction of Lift 6 is dependant on construction of lift 5 for access. This is discussed in more depth in the FEIS.

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- Although winter expansion is favored, summer use of lifts could cause too much impact.

Letters with Comments on this Subject Include: 81, 369.

**FS Response:**

White Pass Company intends to operate only Chair Lift 1 during the summer months. Impacts that can be attributed to recreationists using this lift in the past did not exceed the use standards established for the area. Monitoring of the recreation use that is occurring in the areas that are made accessible by the chair lift will continue, and if standards are exceeded, appropriate measures will be taken.

---

-Alternative 7 will generate jobs on both sides of White Pass.

Letters with Comments on this Subject Include: 210, 381, 437.

**FS Response:**

The economic analysis indicates this is so.

---

- Under Alternative 10(S), why not have Hogback Mountain chair open also?

Letters with Comments on this Subject Include: 71.

**FS Response:**

Alternative 10 (S) has been dropped from the FEIS as a separate summer management strategy, but White Pass Company does not desire to operate the Basin lifts during the summer months due to economic considerations and the desire to conduct the interpretive program in a more natural setting.

---

- With development of Alternative 7, identification and development of additional nordic trails in the South Fork area would greatly reduce conflict between nordic and alpine skiers and reduce encounters for the solitude seekers.

Letters with Comments on this Subject Include: 80.

**FS Response:**

Most of the expanded Nordic trail system will be on the north side of the Highway. Development of nordic trails in the South Fork of Clear Creek drainage would be very limited due to the Wilderness classification. This area is available as an undeveloped area, and parts of this drainage are very suitable for nordic skiing.

---

- Keep the warming hut open for use in the summer.

Letters with Comments on this Subject Include: 19, 71.

**FS Response:**

This option is being left open.

---

- The warming hut should be at the top of the ridge near the tops of Lifts 1, 2 and 4.

Letters with Comments on this Subject Include: 19.

**FS Response:**

The proposed warming hut location was selected to serve skiers using Chair Lifts 1, 2 and 4 as well as those skiers who would use the proposed new lifts in Hogback Basin and the lift down to Knuppenburg Lake. White Pass Company does plan to install restroom facilities at the top of Pigtail Peak.

A petition titled *Concerned Citizens for the Expansion of White Pass* was signed by 535 individuals. It offered the following comment for consideration.

- The signers support the expansion of White Pass as defined in alternative 7 (maximum expansion within Hogback Basin). The full expansion would have a limited impact on the surrounding environment.

---

- White Pass Company is fiscally sound and desires to work with the Forest Service and other agencies concerned with the environmental welfare of the region.
- There would be a limited impact on larger game in the area, and the effect on other species is well documented in the preliminary EIS.
- The major objective of the 1984 Washington State Wilderness Act, regarding Hogback Basin, was to provide expanded nordic and alpine skiing through expansion and development into Hogback Basin. It is important that the expansion request by White Pass Company be judged solely on this intent of the 1984 act, and those who signed the petition support the efforts of the Forest Service to insure the best use of this area to the residents of Washington State.

Letter reference number: 438.

**FS Response:**

The Forest Service generally agrees with the key points in the petition and had indicated this by the selection of the alternatives that provide the greatest good for the greatest number in the long run.

**ADDITIONAL COMMENTS/QUESTIONS**

The following were reflected in some of the responses of both support and opposition positions. Several were voiced at one or more of the public meetings as well.

- Who is paying for the EIS?

**FS Response:**

The EIS document is being paid for by the Forest Service but some information was provided by the White Pass Company during the development of the Environmental Assessment. The information was provided by professional consultants hired by the company but it was thoroughly reviewed by Forest Service professionals for content and accuracy before being used in the EIS.

---

- One high-speed quad chair lift from Knuppenburg lake to Hogback could take the place of 3 lifts (5, 6 and 7).
- Construction of a high-speed quad chair lift to replace lift 1 and 2 would speed lines and discourage congestion.

**FS Response:**

These were not considered in this FEIS. Although the Forest Service thoroughly reviews the type of lifts and their locations prior to allowing a permittee to construct them, it relies heavily on the expertise of the ski area permittee who is paying for the equipment and installation.

---

- Building a "half-pipe" in the area of Chair #3 would draw snowboard enthusiasts (a new popular sport) and would keep them more out of the alpine skier areas.

**FS Response:**

These types of management decisions are generally left up to the permittee, but the Forest Service is kept informed. Snowboarders are a relatively new and small group of winter sports enthusiasts and the ski area will accommodate them when it can be done safely and conveniently.

---

- How about a day lodge at Knuppenburg lake for both summer and winter use?

**FS Response:**

This idea was not addressed in the EIS and there has never been a proposal for such a lodge.

---

- How about electric plug-ins for self-contained motor homes? This could be located in a parking area near existing condos.

**FS Response:**

This idea was not addressed in the EIS and would involve additional analysis to determine if it is economically or environmentally feasible.

---

- Summer Alternative 8 is favored for providing chair lift access in summer, but there does not seem to be a need for trail development or a naturalist program (access for older and handicapped persons is important).

**FS Response:**

The Forest Service naturalist Program is now in place in cooperation with the White Pass Company. One of the missions of the Forest Service is to educate the public in the proper use and appreciation of the natural resources, and the naturalist programs have proven to be very popular with forest users. The Basin access trail would be part of this program, providing controlled access to the Basin. The base facilities of the Ski Area are accessible to the physically challenged.

---

- Start with Alternatives 2 and 3. See if this will sustain a 25 to 30 percent increase in skiers over a few years. If this happens, leave open the option to then proceed with lift expansion into the Basin. At the same time, begin by managing Hogback for cross-country skiers, with groomed trails in the trees and glades surrounding the Basin, leaving the open slopes alone. Even build a small warming hut. See how the amount of skiers develops.

**FS Response:**

Scheduling for development is outlined by alternative in Chapter II and is based on several factors. Development of nordic skiing in Hogback Basin is discussed there, too.

---

- There needs to be an analysis of the avalanche hazards in the accessible areas.

**FS Response:**

An analysis was completed for the areas that would logically be accessible from the Ski Area and is displayed in Chapter III of the DEIS.

**ALTERNATIVES MENTIONED IN THE RESPONSE:**

A number of respondents expressed support for one or more of the proposed alternatives in the DEIS. Support for specific alternatives noted by respondents is summarized below.

Alt. 1 - No Action - 19 mentions \*

Alt. 2 - Improvements and Modification of Existing Permit Area - 63 mentions \*

Alt. 3 - Add Chair Lift #7 (outside Basin) - 52 mentions \*

Alt. 4 - Lift 5 and warming hut - 4 mentions

Alt. 5 - Lifts 5 and 6 and warming hut - 5 mentions

Alt. 6 - Lifts 5 and 7 and warming hut - 5 mentions

Alt. 7 - Lifts 5, 6 and 7 and warming hut - 125 mentions †

Wilderness objectives were emphasized by respondents who indicated support for one or more of the three summer objectives.

Alt. 8(S) - Summer, No Change - 13 mentions

Alt. 9(S) - Summer, no lift operating - 6 mentions

Alt. 10(S) - Summer, with chair lift, interpretive program and Basin trail system - 58 mentions.

(\* The petition with 15 signatures is one mention.

† The petition with 535 signatures is one mention.)

## RESPONSE REFERENCE NUMBERS

1	JOHN ABLES	51	C. MENDENHALL
2	DAVID ALLISON	52	ERIC BURR
3	M. BUEHLER	53	WAYNE H. GARBER
4	J. BROSIO	54	R. G. MACKINTOSH
5	BURNS	55	CHARLES P. GERVAIS
6	ASAD A. BUSHNAG	56	JAMES M. MATTSOJN JR.
7	TERRY COOPER	57	JOHN STONLEY
8	DAVE COTE	58	LAWRENCE M. JACOBSON
9	NEAL DASK AL	59	NO NAME-GIG HARBOR
10	JAMES E. DAVIS	60	G. R. FLOYD
11	C. FLOWER	61	W.M.P.-OLYMPIA
12	LAURA FORD	62	ROBERT H. O'NEILL
13	TOM GATES	63	HOLLY FRITZ
14	MERLE & DIANNE GORS	64	PAUL J. KLINKOSZ
15	ROBERT N. HINTZE	65	NO NAME-OLYMPIA POSTMARK
16	CONSTANCE HOSKINS	66	NO NAME-YAKIMA
17	<u>HUD-REGION 8</u>	67	DIANE MEISER
18	LEE HUNSPERGER	68	ROBERT A. THOMSON-AND 4 OTHER SIGNATURES ON A SECOND RESPONSE
19	RICK JALI	69	WILLIAM A. GILMORE
20	JOHN JESSUP	70	SONNABEND
21	BRIAN JOHNSON	71	JERRY MEYERHOFF
22	BERNIE JORGENSEN	72	PAUL LAMM
23	MORRIS KIEK	73	PETER NELSEN
24	CHRISTINE KRAAF	74	FLORENCE THOMAS
25	LARRY LEN	75	CHRIS CHRISTMAN
26	MCDONALD	76	BRUCE BJORNSTAD
27	KEITH D. MCGOFFIN	77	R.S. GOOLD
28	JON MCLAUGHLIN	78	PAUL WOCKEN
29	RAYMOND MERRELL	79	<u>MT. SPOKANE SKIING CORP.</u>
30	TOM M. PHILLIPS	79	JON A. BELL
31	JOHN PUTNEY	80	GAME RIDGE MOTEL-NACHES
32	PETE SABIN	81	NO NAME-TRI CITIES POSTMARK
33	BOB SINCLAIR	82	NO NAME-TACOMA POSTMARK
34	K. THOMAS	83	DON CLARK
35	STEPHEN D. THOMPSON	84	ROBERT J. OLSON
36	BJORN TOOSKI	85	JEANNE SETTLE
37	<u>WASH STATE DEPT. OF TRANSPORTATION, DIST. 4</u>	86	LILLIAN E. SHOEMAKER
38	WILLIAM WASSBERG	87	N. BENNETT
39	MRS. BRIAN WILSON	88	MARILYN BAINTEK
40	ROGER ROWLES	89	ROBERTS
41	NORMAN & JOANNE NASHEM	90	ANTHONY MILAN
42	FRANK TAYLOR	91	JIM PATRICK
43	NO NAME-TACOMA	92	ROBERT J. AYLEN
44	DR. & MRS. D.T. BAER	93	DR. F.J.A. DITTER
45	TOM UTTERBACK	94	DENNIS H. MILLS
46	JERRY L. CECIL	95	DAVE GAROUTTE
47	EGLIN-YAKIMA	96	THOMAS UTTERBACK
48	JOHN DORLAND	97	DAVID OVERTON
49	PAUL W. PUCKETT	98	CHRIS ABLES
50	F.A. MONTGOMERY, M.D., INC. P.S.	99	RICHARD L. PORUS, M.D.



- 100 MARIAN MAE ROBISON  
101 RON GRAHAM  
102 ROD ROBERT  
103 DAMILE KEILY-ZENT  
104 FRED & PHYLLIS ARNOLD  
105 ROBERT E. OESTREICH  
106 DAVID MCDONNELL  
107 PHYLLIS DOLPH  
108 JOHN MCCOOL  
109 D. GLENN LAWYER  
110 YAKIMA INDIAN NATION-MELVIN R. SAMPSON, CHAIRMAN, YAKIMA TRIBAL COUNCIL  
111 WASHINGTON WILDERNESS COALITION-DOUG PAULY, PRESIDENT  
112 MELINDA GRANT  
113 S.D. WHITE  
114 KELLY BURKE  
115 WARD B. STYNER  
116 LARRY SASSER  
117 SCOTT ANDREWS  
118 WALDTRAUT PETRIE  
119 LU JACKSON  
120 LYLE G. ERLEWINE  
121 SIERRA CLUB-CASCADE CHAPTER-LIZ TANKE  
122 JIM SHELTON  
123 MR. & MRS. J.C. BIGAS  
124 STEVE DOUGLAS  
125 JACK TALERICO,  
126 TOM PAGANO  
127 THOMAS M. SCHIBIG  
128 STEVEN E. POLTROCK  
129 WOODY WHEELER  
130 WALTER M. VIEBROCK  
131 AARON J. SILVERLIGHT  
132 MARTIN ADAMS  
133 GUST BARDY, M.D.  
134 B.G. HARDING  
135 BERNARD F. DIXON  
136 DIANE LACHMAN  
137 CHARLES A. DEL SESTO  
138 GISCLA TRIVETTE  
139 GRACE KENT  
140 JON BENNETT  
141 JONATHAN & MARIE-ANN HARKNESS  
142 JOAN C. CAYCE  
143 JOAN TRUNK  
144 MARJORIE DREWES  
145 CHARLES M. BAGLEY, JR., M.D.  
146 ROLANDE CHESDRO  
147 JOHN H. SCHWAB  
148 VIRGINIA M. WALSH  
149 T.R. KURTZ, D.V.M.  
150 ROY O. MCMURTREY  
151 LISA DRILL  
152 PETER TITCOMB  
153 C. HOHNSON  
154 B. W. WAKEFIELD  
155 GERALDINE K. SCHWARZ  
156 JOHN F. WARTH  
157 JOE & EVA MEASSICK  
158 JANICE WAGNER  
159 UNITED STATES DEPARTMENT OF THE INTERIOR-OFFICE OF ENVIRONMENTAL PROJECT REVIEW  
160 DAN GREEN  
161 DOUGLAS J. VAUGHT  
162 FREDERICK S. SMITH  
163 JODY L. GRAHAM  
164 SUSAN E. COX  
165 STATE OF WASHINGTON DEPARTMENT OF WILDLIFE-TED A. CLAUSING, REGIONAL HABITAT BIOLOGIST  
166 TOM SNYDER  
167 ROLAND E. DAVIS  
168 DAVID REID  
169 NATIONAL AUDUBON SOCIETY (TACOMA)-HELEN ENGLE, DIRECTOR  
170 JOSEPH ELFELT  
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172 BILL WAYBURN  
173 BARBARA K. GARRISON  
174 MATTHEW O'CONNOR  
175 DAVID W. BRANCH, D.D.S.  
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177 LEN GARDNER  
178 DEBORAH BROOKINGS  
180 MICHAEL JACKSON  
181 CYNTHIA PETERS  
182 MARGARET ENGLE  
183 DAVID ENGLE  
184 GARRY & PAM BROWN  
185 PEGGY ALLAN  
186 RICK JOHNSON  
187 FLEMISTER-YAKIMA  
188 NO NAME-WENATCHEE POSTMARK  
189 SANDRA ST. MARY  
190 PAT MCGHEHEY  
191 CHERIE P. YATES  
192 ROBERT C. GUCHEE  
193 MELINDA GRANT  
194 DOUG DENNISON  
195 PETER J. PEDONE  
196 H.W. HEACOCK  
197 BRUCE RESTAD  
198 JOHN L. SMOOT  
199 BRIAN BARRY  
200 CAROL SYMOND  
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202 FREDERICK A. ROLL  
203 ANITA E. SMITH

- 204 MICHAEL A TAYLOR, M.D.  
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210 DIANA POSADA  
211 PEGGY STANFIELD  
212 SUSAN PAOLELLA  
213 D.W. HINZ  
214 NO NAME-SEATTLE POSTMARK  
215 EDRA HARRISON  
216 BETTY C. MARTINSEN  
217 LEWIS W. EHLERS  
218 DORIS L. STEEG  
219 SEAN HOLLAND  
220 RICHARD L. WIEHL  
221 LEON A UZIEL  
222 ROBERT W. BIRKELAND  
223 DAVE MOODY  
224 MARY V. SPLAWN  
225 HOMER B. SPLAWN  
226 JOANN EVANS FREEMAN  
227 MARY H. PEASE  
228 JEFF GAULKE  
229 C. PETERS  
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240 ROY SHERBAHN  
241 FRANK E. IRWIN  
242 ROBERT DREWES  
243 RAY PAOLELLA  
244 H.E. SMITH  
245 WILLIS L. MCGHEHEY  
246 JACK A. CASSEDAY  
247 JUSTINE F. NAGEL  
248 TOIVO PERALA  
249 BILL DUNBAR  
250 POLLY B. CADD  
251 GEORGE WILBUR  
252 D. WILBUR  
253 MCCLURE  
254 NICOLA BOCEK, M.D.  
255 DONALD M. HAVLIN  
256 DAVID HAGEN  
257 BANKCAL-THE BANK OF CALIFORNIA-  
ROBERT R. WILSON, VICE PRES. AND  
REGION MANAGER  
258 WASHINGTON TRAILS ASSOCIATION-  
SUSAN ANDERSON, EXECUTIVE  
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295 MIKE HILER  
296 JOAN CHAITEN  
297 DENNIS MILLER  
298 KALMAN BRAUNER  
299 MARY MAHRE  
300 ALBERTA KITTLESON  
301 PAUL GANZ  
302 TRAPPER JEFF ROBBINS  
303 DONALD R. SHANK  
304 MR.&MRS. SEWARD YOUNG

305	LORNA J. WILLIAMSON	360	DOUGLAS K. FISHBACK
306	CAROLE CHEATLE	361	D.F. DRYDEN
307	JOHN MORROW	362	PHYLLIS DRYDEN
308	GEORGE K. BRUHN	363	ASH & LAURIE MILLER
309	ERNESTINE HERR	364	BETSY FRANK
310	R.J. BROOKS	365	DON MILES
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312	ULRICH SCHOETTLE, MD	367	JAMES E. BURKE
313	LETHA M. JONES	368	FRANK S. JOHNSON
314	ERIK L. SPLAWN, DVM	369	RANDALL R. SHARP
315	SEVEN E. PAYNE	370	LOIS BRUHN
316	JAMES M. SCHINKE	371	DR. RALPH HILL
317	KATHLEEN BLANCHARD	372	JERRY KLOSTER
318	FRANK RETHERFORD	373	BARB REISENAUER
319	MICHAEL GAMBLE	374	NANCY TUKSAUDOM
320	STEVEN F. CROSS	375	JOYCE BRACK
321	CHRIS HANSEN	376	ELLEN QUIRING
322	LAWRENCE C. FRANK	377	CHRIS PUGH
323	ALAN R. JONES	378	HENRY PETERSEN
324	JANET E. TOBKIN	379	ROY W. ANDERSON
325	MARGARET MORRIS	380	JANE G. GAFFNEY
326	M. REINSMAN	381	MR.&MRS. WM. J. SUTHERLAND
327	CAROL M. DALE	382	MARTY SHAPIRO
328	CHUCK & CAROL LOCKWOOD	383	L. CARPENTER
329	BARBARA A. CELLARIUS	384	ARNE BEARD
330	RON NIELSON	385	CASEY BEARD
331	DAVID CORKRAN	386	STEVE REISENAUER
332	JAMES H. MORTON	387	JUSTIN LINDSAY
333	DORIS M. STERLING	388	JOHN YOUNG
334	JOHN D. HARLEY	389	DALE RADER8
335	KAREN RAYMOND	390	LAURA JENNINGS
336	BRYAN SCOTT	391	CHRISTINA CARLSON
337	DEBORAH HEATH	392	GWEN MCCULLOCH
338	KAREN FOSTER	393	DR. ELIZABETH PUTNAM
339	KAREN BERNDT	394	SUE CHICKMAN
340	"CY" PERKINS	395	PETITION-W/15 NAMES
341	<u>THE WINGS OF CONSERVATION-MARCIA</u> RUTAN LIGHTHAWK	396	WILLIAM MAHLER
342	DAN JOHNSON	397	<u>SOIL CONSERVATION SERVICE-LYNN A.</u> BROWN, STATE CONSERVATIONIST
343	KENT WILKINSON	398	IGAL DAHARI
344	SIDNEY DOLQUIST	399	DOROTHY JORDAN
345	HELEN ENGL	400	GUY EDWARDS
346	NO NAME-STATESBORO, GA POSTMARK	401	MICHAEL GROESCH
347	NO NAME-STATESBORO, GA POSTMARK	402	CAROL A. IVERSEN
348	STANLEY BERNDT	403	SANDY & DAVID ENGSTROM
349	JULIE I. WOLK	404	ROBERT ALDAG
350	MARK STOREY	405	TIM & DONNA HUDSON
351	LYNN SCHMIDT	406	JENNIFER STEIN
352	GEORGE R. ENGLE	407	NO NAME-SUNNYSIDE
353	LORI DOROUGH	408	CHUCK GUSTAFSON
354	VALARIE HESSENTHALER	409	DR. JEFFREY HAGEN
355	DAVID LACKEY	410	PEGGY PRINTZ
356	SARA JENSSEN	411	SUSIE BALL
357	GAIL & BILL HLAVECEK	412	JERRY SCOTT
358	TERESA LOUDIANA	413	NANCY YOUNG
359	NO NAME-YAKIMA POSTMARK	414	DALE SMITH

- 415 DEBORAH S. BROWN, AND 2 OTHER NAMES  
416 RODNEY K. NELSON  
417 STANLEY GRIFFITH  
418 CHARLES A. CECIL  
419 NO NAME-SUNNYSIDE  
420 W.D. FRANK  
421 NO NAME-WENATCHEE POSTMARK  
422 ANN BLAKLEY  
423 JOHN T. COLEMAN  
424 TOM GRAY  
425 WILL & FRAN WATT  
426 DAVID REEL  
427 MILFORD RIFFEW  
428 RUTH M. WARD  
429 ARNIE KUBIAK  
430 STEVEN G. ERWOOD  
431 JO ELLEN NAPIER  
432 STEPHEN R. BACHHUBER  
433 ROBERT STREBIN JR.  
434 INTERAGENCY COMMITTEE FOR OUTDOOR RECREATION-JIM EYCHANER  
435 PACIFIC CREST TRAIL CONFERENCE-LARRY CASH  
436 WASHINGTON STATE SKI INDUSTRIES-RICHARD C. VANDERFLUTE  
437 EARL B. HOVELAND  
438 PETITION-BROUGHT IN BY ALAN ROGERS WITH ABOUT 535 SIGNATURES  
439 B. ADKISSON  
440 CHUCK VIELE  
441 SCOTT BUSBY  
442 KATHY EVANS  
443 KEN EVANS  
444 HOFFMAN-ELLENSBURG  
445 REGINA SPOOR  
446 M. HOFFMAN  
447 LEE TRIVETTE  
448 WM. GRAY, JR  
449 JIM RUSSI  
450 BILL GILMORE  
451 ROBERT J. BRUCE  
452 NO NAME-NO POSTMARK  
453 ROSEMARY BOCEK-STRADER  
454 PEGGY S. WHITAKER  
455 RICHARD NAUGHT  
456 BOB STRADER  
457 DAVID WERTZ  
458 NIGEL BLAKLEY  
459 WM. DAVID PETERS  
460 JANICE C. DELACY  
461 JOHN R. SWANSON  
462 GORDON THOMSON  
463 MARK OLSON  
464 DR. STEVEN LEIFHEIT  
465 ELIZABETH M. BERGGREN  
466 ALAN ROGERS (SEE PETITION, RESP. #438)  
467 JOHN M. THORP  
468 DAVID PAVELCHEK  
469 WASHINGTON SKI TOURING CLUB-DOUGLAS FARNELL  
470 SUSAN HELF  
471 TIMOTHY J. WHITTERS  
472 CATHY A. SCHMID  
473 J. CAHILL  
474 THE CASCADIANS-RAYMOND PAOLELLA  
475 PCT CONFERENCE-PCT ADVISORY COMMITTEE-HOWARD W. MILLAN  
476 MARTHA BENN  
477 GLEN C. ACORD  
478 SARA CATE MAIER  
479 DOROTHY J. CARROLL, AND 6 OTHER SIGNATURES  
480 J. DANIEL KINNEY JR.  
481 YAKIMA VALLEY AUDUBON SOCIETY-J. DANIEL KINNEY JR.  
482 MARY KAUFMAN  
483 ROLAND LILLEY, M.A.  
484 BECKY LANG-BOYD  
485 BARBARA HALL  
486 KRIS NEWGARD  
487 BRUCE WARTER  
488 RONALD B. CASH  
489 ANDY SELTERS  
490 MARK LAWLER  
491 ELIZABETH KLUMPP  
492 HARRY E. WILSON  
493 TOM GNOJEK  
494 JEAN & DON STONACK  
495 PUBLIC HEALTH SERVICE-CENTERS FOR DISEASE CONTROL  
496 JERI BARTLEY  
497 ENVIRONMENTAL PROTECTION AGENCY
- 
-



## Appendix E

### Plant Species List

(alphabetically by family)

List of plant species found in the study area, 1987, by Dr. William W. Barker, Professor of Botany, Central Washington University.

<i>Athyrium filix-femina</i> .....	Polypodiaceae	<i>Clintonia uniflora</i> .....	Liliaceae
<i>Cystopteris fragilis</i> .....	Polypodiaceae	<i>Erythronium montanum</i> .....	Liliaceae
<i>Gymnocarpium dryopteris</i> ...	Polypodiaceae	<i>Erythronium grandiflorum</i> ...	Liliaceae
<i>Polysticum munitum</i> .....	Polypodiaceae	<i>Smilacina racemosa</i> .....	Liliaceae
<i>Chamaecyparis nootkatensis</i> .	Cupressaceae	<i>Trillium ovatum</i> .....	Liliaceae
<i>Abies amabilis</i> .....	Pinaceae	<i>Veratrum viride</i> .....	Liliaceae
<i>Abies lasiocarpa</i> .....	Pinaceae	<i>Xerophyllum tenax</i> .....	Liliaceae
<i>Picea engelmannii</i> .....	Pinaceae	<i>Calypso bulbosa</i> .....	Orchidaceae
<i>Pinus albicaulis</i> .....	Pinaceae	<i>Goodyera oblongifolia</i> .....	Orchidaceae
<i>Pinus monticola</i> .....	Pinaceae	<i>Habenaria saccata</i> .....	Orchidaceae
<i>Pseudotsuga menziesii</i> .....	Pinaceae	<i>Listera cordata</i> .....	Orchidaceae
<i>Tsuga heterophylla</i> .....	Pinaceae	<i>Phlox diffusa</i> .....	Polemoniaceae
<i>Tsuga mertensiana</i> .....	Pinaceae	<i>Oxyria digyna</i> .....	Polygonaceae
<i>Achlys triphylla</i> .....	Berberidaceae	<i>Montia cordifolia</i> .....	Portulacaceae
<i>Mertensia paniculata</i> .....	Boraginaceae	<i>Aquilegia fomosa</i> .....	Ranunculaceae
<i>Pachystima mysinites</i> .....	Celastraceae	<i>Lutkea pectinata</i> .....	Rosaceae
<i>Antennaria lanata</i> .....	Compositae	<i>Potentilla flabellifolia</i> .....	Rosaceae
<i>Arnica latifolia</i> .....	Compositae	<i>Rubus spectabilis</i> .....	Rosaceae
<i>Arnica mollis</i> .....	Compositae	<i>Rubus pedatus</i> .....	Rosaceae
<i>Hiercium gracile</i> .....	Compositae	<i>Galium aparine</i> .....	Rubiaceae
<i>Microseris alpestris</i> .....	Compositae	<i>Leptarrhena pyrolifolia</i> .....	Saxifragaceae
<i>Arctostaphylos uva-ursi</i> .....	Ericaceae	<i>Mitella breweri</i> .....	Saxifragaceae
<i>Cassiope mertensiana</i> .....	Ericaceae	<i>Saxifraga tolmei</i> .....	Saxifragaceae
<i>Menziesia ferruginea</i> .....	Ericaceae	<i>Saxifraga punctata</i> .....	Saxifragaceae
<i>Phyllodoce empetrifomis</i> ...	Ericaceae	<i>Tiarella unifoliata</i> .....	Saxifragaceae
<i>Pyrola secunda</i> .....	Ericaceae	<i>Castilleja parviflora</i> .....	Scrophulariaceae
<i>Rhododendron albiflorum</i> ...	Ericaceae	<i>Pedicularis bracteosa</i> .....	Scrophulariaceae
<i>Vaccinium scopulorum</i> .....	Ericaceae	<i>Pedicularis contorta</i> .....	Scrophulariaceae
<i>Vaccinium caespitosum</i> .....	Ericaceae	<i>Pedicularis omithorhyncha</i> ..	Scrophulariaceae
<i>Juncus mertensianus</i> .....	Juncaceae	<i>Veronica cusickii</i> .....	Scrophulariaceae
<i>Lupinus latifolius</i> .....	Leguminosae	<i>Heracleum lanatum</i> .....	Umbelliferae
		<i>Valeriana sitchensis</i> .....	Valerianaceae



## **APPENDIX F**

# **BOUNDARY MANAGEMENT GUIDELINES WHITE PASS SKI AREA**

### **A. GOAL**

To reduce exposure by members of the public to avalanche hazard adjacent to the White Pass Ski Area while providing a reasonable degree of opportunity for a backcountry experience.

### **B. OBJECTIVES**

The boundary management section of the Winter Operation Plan will:

1. Be coordinated with law enforcement officials.
2. Include awareness and education opportunities for individuals leaving the developed Ski Area.
3. Have consistent, easily understood gate systems, where authorized, and signing. Authorization and designation of gates will be done by the Forest Service at appropriate locations on the boundaries of the developed Ski Area.
4. Provide access to the backcountry consistent with these guidelines unless unique circumstances make it unwise in the estimation of the Forest Service.

### **C. GUIDELINES**

#### **1. RESPONSIBILITIES AND APPLICATION**

The Ski Area permittee has primary responsibilities for public safety within the Ski Area. The Ski Area operator has no duty from the status as a ski area operator to any skier skiing beyond properly marked Ski Area boundaries. The Forest Service has the same responsibilities for the public within the undeveloped portions of the Permit Area as it has for the public within National Forest land outside the Permit boundary.

The Winter Operation Plan will have a boundary management section for the Ski Area. The boundary management section will address aspects of the Ski Area boundary and how it will be signed and managed.



The boundary management section of the Winter Operation Plan shall include, or make reference to, an area map on a large enough scale to clearly show:

- The Ski Area boundary.
- The Ski Area Permit boundary.
- Permanently closed areas within and adjacent to the Ski Area boundary.
- Any designated access routes/gates that provide ingress and egress from the Ski Area.

## **2. COORDINATION WITH LOCAL LAW ENFORCEMENT AGENCIES**

The boundary management section of the Winter Operation Plan will be provided to the county sheriffs for comment and coordination. In addition, the local search and rescue organizations should have an opportunity to comment on coordination regarding search or rescue in the backcountry. Approval of the Winter Operation Plan, including this section, remains with the Ski Area permittee and the U.S. Forest Service. This coordination will be accomplished by the Forest Service.

## **3. EDUCATION AND AWARENESS**

The boundary management section of the Winter Operation Plan will include any guidelines for the Ski Area's safety program. These can include:

- a. The instructions for accessing the backcountry, where appropriate, and a map to show the Forest Service designated gates to be used, if any.
- b. The signs to be used, if any.
- c. The reasons why restrictions are needed.

This section will also define additional informational opportunities that may be used. A brochure shall be provided describing the hazards existing outside the Permit Area, locations of hazards, and safety tips.

## **4. GATES AND SIGNING**

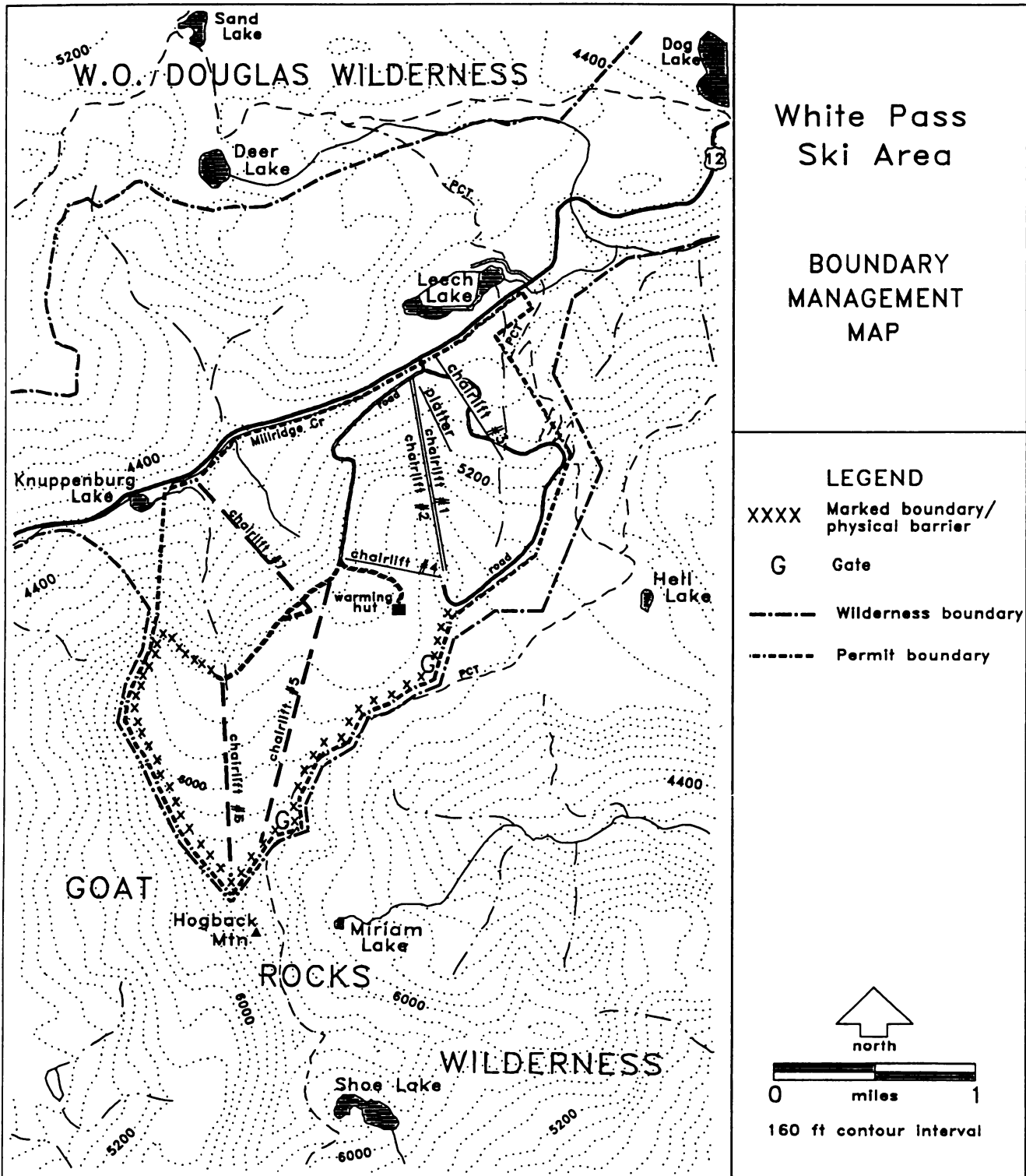
- a. Boundaries will be marked in accordance with approved standards.
- b. Gates that provide access beyond the Ski Area boundary will be designated by the Forest Service and will be marked as follows:
  - By a large sign that gives the Forest Service's instructions for leaving the boundary and information about any potential avalanche hazards that may exist beyond the boundary. This sign will also explain the reasons and rules for periodic closures of the gate that may occur.
  - If the Gate is closed, it will be closed by, or at the direction of, the Forest Service and will have the standard closure sign on it.
  - The Ski Area may provide additional information for skiers at the access points, if desired.

## **5. ACCESS TO AREAS BEYOND THE SKI AREA BOUNDARY**

The intent of the Forest Service is to provide skiers the opportunity to use an area's lifts for safe access to the backcountry. The access points to areas beyond the Ski Area boundary will be designated by the Forest Service in the boundary management section of the operating plan.

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FIGURE F-1





## Appendix G

# Treaty with the Yakima — 1855

12 Stat. 951, June 9, 1855 — Treaty

*Articles of agreement and convention made and concluded at the treaty ground, Camp Stevens, Walla-Walla Valley, this ninth day of June, in the year one thousand eight hundred and fifty-five, by and between Isaac I. Stevens, governor and superintendent of Indian Affairs for the Territory of Washington, on the part of the United States, and the undersigned head chief, chiefs, headmen and delegates of the Yakama, Palouse, Pisuose, Wenatchapam, Klikatat, Kliquit, Kow-was-say-ee, Li-ay-was, Skinpah, Wish-ham, Shyiks, Ochechotes, Kah-milt-pah, and Se-ap-cat, confederated tribes and bands of Indians, occupying land hereinafter bounded and described and lying in Washington Territory, who for the purposes of this treaty are to be considered as one nation, under the name of "Yakama," with Kamaiakun as its head chief, on behalf of and acting for said tribes and bands, and being duly authorized thereto by them.*

### CESSION OF LANDS

ARTICLE I. The aforesaid confederated tribes and bands of Indians hereby cede, relinquish, and convey to the United States all their right, title, interest in and to the lands and country occupied and claimed by them, and bounded and described as follows, to wit:

### BOUNDARIES

Commencing at Mount Rainier, thence northerly along the main ridge of the Cascade Mountains to the point where the northern tributaries of Lake Che-lan and the southern tributaries of the Methow River; thence, crossing the Columbia on a true east course, to a point whose longitude is one hundred and nineteen degrees and ten minutes (119°10'), which two latter lines separate the above confederated tribes and bands from the Oakinakane tribe of Indians; thence in a true south course to the 952 forty-seventh (47°) parallel of latitude; thence east on said parallel to the main Palouse River to its junction with the Moh-hah-ne-she, or southern tributary of the same; thence, in a southeasterly direction, to the Snake River, at the mouth of the Tucannon River, separating the above confederated tribes from Nez Perce tribe of Indians; thence down the Snake River to its junction with the Columbia River; thence up the Columbia River to the "White Banks," below the Priest's Rapids; thence westerly to a lake called "La Lac;" thence southerly to a point on the Yakama River called Toh-mah-luke; thence, in a southwesterly direction, to the Columbia River, at the western extremity of the "Big Island," between the mouths of the Umatilla River and Butler Creek; all of which latter boundaries separate the above confederated tribes and bands from the Walla-Walla, Cayuse, and Umatilla tribes and bands of Indians; thence down the Columbia River to midway between the mouths of White Salmon and Wind Rivers; thence along the divide between said rivers to the main ridge of the Cascade Mountain; and thence along said ridge to the place of beginning.

### RESERVATION

ARTICLE II. There is, however, reserved from the lands above ceded for the use and occupation of the aforesaid confederated tribes and bands of Indians, the tract of land included within the following boundaries, to wit:

### BOUNDARIES

Commencing on the Yakama River, at the mouth of the Attah-num River; thence westerly along said Attah-num River to the forks; Thence along the southern tributary to the Cascade Mountains; said thence southerly along the main ridge of said mountains, passing south and east to Mount Adams, to the spur whence flows the waters of the Klikatat and Pisco Rivers; thence down said spur to the divide between the waters of said rivers; thence along said divide to the divide separating the waters of the Satass River from those flowing into the Columbia River, thence along said divide to the main Yakima, eight miles below the mouth of the Satass River, and thence up the Yakama River to the place of beginning.

All of which tract shall be set apart, and, so far as necessary, surveyed and marked out, for the exclusive use and benefit of said confederated tribes and bands of Indians, as an Indian reservation; nor shall any white man, excepting those in the employment of the Indian Department, be permitted to reside upon the said reservation without permission of the tribe and the Superintendent and agent. And the said confederated tribes and bands agree to move to, and settle upon, the same within one year after the ratification of this treaty. In the meantime it shall be lawful for them to reside upon any ground not in the actual claim and occupation of citizens of the United States; and upon any ground claimed or occupied, if with the permission of the owner or claimant.

Guaranteeing, however, the right to all citizens of the United States, to enter upon and occupy as settlers any lands not actually occupied and cultivated by said Indians at this time, and not included in the reservation above named.

*And provided,* That any substantial improvements heretofore made by any Indian, such as fields enclosed and cultivated, and houses erected upon the lands hereby ceded, and which he may be compelled to abandon in consequence of this treaty, shall be valued, under the direction of the President of the United States, and payment made therefor in money; or improvement of an equal value made for said Indian upon the reservation. And no Indian will be required to abandon the improvements aforesaid, now occupied by him, until their value in money, or improvements of an equal value shall be furnished him as aforesaid.

ARTICLE III. *And provided,* That, if necessary for the public convenience, (953) roads may be run through the said reservation; and on the other hand, the right of way, with free access from the same to the nearest public highway, is secured to them; as also the right, in common with citizens of the United States, to travel upon all public highways.

### PRIVILEGES SECURED TO INDIANS

The exclusive right of taking fish in all the streams, where running through or bordering said reservations, is further secured to said confederated tribes and bands of Indians, as also the right of taking fish at all usual and accustomed places, in common with citizens of the Territory, and of erecting temporary buildings for curing them; together with the privilege of hunting, gathering roots and berries, and pasturing their horses and cattle upon open and unclaimed land.

### PAYMENT BY THE UNITED STATES

ARTICLE IV. In consideration of the above cession, the United States agree to pay to the said confederated tribes and bands of Indians, in addition to the goods and provisions distributed to them at the time of signing this treaty, the sum of two hundred thousand dollars, in the following manner, that is to say: sixty thousand, to be expended under the direction of the President of the United States, the first year after the ratification of this treaty, in providing for their removal to the reservation, breaking up and fencing farms, building houses for them, supplying them with provisions and suitable outfit, and for such other objects as he may deem necessary, and the remainder in annuities, as follows: for the first five years after the ratification of the treaty, ten thousand dollars each year, commencing on September first, 1856; for the next five years, eight thousand dollars each year; for the next five years, six thousand dollars per year; and for the next five years, four thousand per year.

All which sums of money shall be applied to the use and benefit of said Indians, under the direction of the president of the United States, who may from time to time determine, at his discretion, upon what beneficial objects to expend the same for them. And the superintendent of Indian affairs, or other proper officer, shall each year inform the President of the wishes of the Indians in relation thereto.

### UNITED STATES TO ESTABLISH SCHOOLS

ARTICLE V. The United States further agrees to establish at suitable points within said reservation, within one year after the ratification hereof, two schools, erecting the necessary buildings, keeping them in repair, and providing them with furniture, books, stationery, one of which shall be an agricultural and industrial school, to be located at the agency, and to be free to the children of the said confederated tribes and bands of Indians, and to employ one superintendent of teaching and two teachers; to build two blacksmiths' shops, to one of which shall be attached a tin shop, and the other a gunsmith's shop; one carpenter's shop, one wagon and ploughmaker's shop, and to keep the same in repair and furnished with the necessary tools; to employ one superintendent of farming and two farmers, two blacksmiths, one tinner, one gunsmith, one carpenter, one wagon and ploughmaker, for the instruction of the Indians in trades and to assist them in the same; to erect one saw-mill and one flouring-mill, keeping the same in repair and furnished with the necessary tools and fixtures; to erect a hospital, keeping the same in repair and provided with the necessary medicines and furniture, and to employ a physician; and to erect, keep in repair and provided with the necessary furniture, the buildings required for the accommodation of the said employees. The said buildings and establishments to be maintained and kept in repair as aforesaid, and the employees to be kept in service for the period of twenty years.

And in view of the fact that the head chief of the said confederated tribes and bands of Indians is expected, and will be called upon, to perform many services of a public character, occupying much of his time, the United States further agrees to pay to the said confederated tribes and bands of Indians five hundred dollars per year, for the term of twenty years after the ratification hereof, as a salary for such person as the said (954) confederated tribes and bands of Indians may select to be their head chief; to build for him at a suitable point on the reservation a comfortable house and properly furnish the same, and to plough and fence ten acres of land. The said salary to be paid to, and the said house to be occupied by, such head chief so long as he may continue to hold that office.

### KAMAIKUN IS THE HEAD CHIEF

And it is distinctly understood and agreed that at the time of the conclusion of this treaty Kamaiakun is the duly elected and authorized head chief of the confederated tribes and bands aforesaid, styled the Yakama nation, and is recognized as such by them and by the commissioners on the part of the United States holding this treaty; and all the expenditures and expenses contemplated in this article of this treaty shall be defrayed by the United States, and shall not be deducted from the annuities agreed to be paid to said confederated tribes and bands of Indians. Nor shall the cost of transporting the goods for the annuity payments be charged upon the annuities, but shall be defrayed by the United States.

### RESERVATION MAY BE SURVEYED

ARTICLE VI. The President may, from time to time, at his discretion, cause the whole or such portions of such reservation as he may think proper, to be surveyed into lots, and assign the same to such individuals or families of the said confederated tribes and bands of Indians as are willing to avail themselves of the privilege, and will locate on the same as a permanent home, on the same terms and subject to the same regulations as are provided in the sixth article of the treaty with the Omahas, so far as the same may be applicable.

### ANNUITIES NOT TO PAY DEBTS OF INDIVIDUALS

ARTICLE VII. The annuities of the aforesaid confederated tribes and bands of Indians shall not be taken to pay the debts of individuals.

ARTICLE VIII. The aforesaid confederated tribes and bands of Indians acknowledge their dependence upon the government of the United States, and promise to be friendly with all citizens thereof, and pledge themselves to commit no depredations upon upon the property of such citizens.

And should any one or more of them violate this pledge, and the fact be satisfactorily proved before the agent, the property taken shall be returned, or in default thereof, or if injured or destroyed, compensation may be made by the government out of the annuities.

**NOT TO MAKE WAR BUT IN SELF DEFENSE**

Nor will they make war upon any other tribe, except in self-defense, but will submit all matters of differences between them and other Indians to the government of the United States or its agent for decision, and abide thereby. And if any of the said Indians commit depredations on any other Indians within the territory of Washington and Oregon, the same rule shall prevail as that provided in this article in case of depredations against citizens. And the said confederated tribes and bands of Indians agree not to shelter or conceal offenders against the laws of the United States, but to deliver them up to the authorities for trial.

ARTICLE IX. The said confederated tribes and bands of Indians desire to exclude from their reservation the use of ardent spirits, and to prevent their people from drinking the same, and therefore, it is provided that any Indian belonging to said confederated tribes and bands of Indians, who is guilty of bringing liquor into said reservation, or who drinks liquor, may have his or her annuities withheld from him or her for such time as the President may determine.

**WENATSHAPAM FISHERY RESERVED**

ARTICLE X. *And provided,* That there is also reserved and set apart from the lands ceded by this treaty, for the use and benefit of the aforesaid confederated tribes and bands, a tract of land not exceeding in quantity one township of six miles square, situated at the forks of the Pisuouse or Wenatshapam River, and known as the "Wenatshapam fishery," which said reservation shall be surveyed and marked out whenever the President may direct, and be subject to the same provisions and restrictions as other Indian reservations.

**WHEN TREATY TO TAKE EFFECT**

ARTICLE XI. This treaty shall be obligatory upon the contracting parties as soon as the same shall be ratified by the President and Senate of the United States.

(955) In testimony whereof, the said Isaac I. Stevens, governor and superintendent of Indian affairs for the Territory of Washington, and the undersigned head chief, chiefs, headmen, and delegates to the aforesaid confederated tribes and bands of Indians, have hereunto set their hands and seals, at the place and on the day and year hereinbefore written.

ISAAC I. STEVENS, Governor and Superintendent  
KAMAIAKUN, his X mark  
SKLOOM, his X mark  
OWHI, his X mark  
TE-COLE-KUN, his X mark  
LA-HOOM, his X mark  
ME-NI-NOCK, his X mark  
ELIT PALMER, his X mark

WISH-OCH-KMPITS, his X mark  
KOO-LAT-TOOSE, his X mark  
SHEE-AH-COTTE, his X mark  
TUCK-QUILLE, his X mark  
KA-LOO-AS, his X mark  
SCHA-NOO-A, his X mark  
SLA-KISH, his X mark

Signed and sealed in presence of —

JAMES DOTY, Secretary of Treaties  
MIE. CLES (JEAN CHARLES) PANDOSY, O.M.I.  
WM. McKAY  
W.H. TAPPAN, sub Indian Agent, W.T.  
C. CHIROUSE, O.M.I.  
PATRICK McKENZIE, Interpreter  
A.D. PAMBURN (PAMBRUN), Interpreter  
JOEL PALMER, Supt. of Indian Affairs, O.T.  
W.D. BIGLOW  
A.D. PAMBURN (PAMBRUN), Interpreter

And whereas, the said treaty having been submitted to the Senate of the United States for its constitutional action thereon, the said Senate did, on the eight hundred and fifty-nine, advise and consent to the ratification of the same by a resolution in the words and figures following, to wit:

"IN EXECUTIVE SESSION,

"SENATE OF THE UNITED STATES, March 8, 1859.

"Resolved, (two thirds of the senators concurring), That the Senate advise and consent to the ratification of treaty between the United States and the head chief, chiefs, headmen and delegates of the Yakama, Palouse, and other confederated tribes and bands of Indians, occupying lands lying in Washington Territory, who, for the purpose of this treaty, are to be considered as one nation, under the name of 'Yakama,' with Kamaiakun as its head chief, signed 9th June, 1855.

"Attest: ASBURY DICKENS, Secretary."

Now, therefore, be it known that I, JAMES BUCHANAN, President of the United States of America, do, in pursuance of the advise and consent of the Senate, as expressed in their resolution of March eighth, one thousand eight hundred and fifty-nine, accept, ratify, and confirm the said treaty.

(956) In testimony whereof, I have hereunto caused the seal of the United States to be affixed, and have signed the same with my own hand.

Done at the city of Washington, this eighteenth day of April, in the year of our Lord one thousand eight hundred and fifty-nine, and of the independence of the the United States the eighty-third.

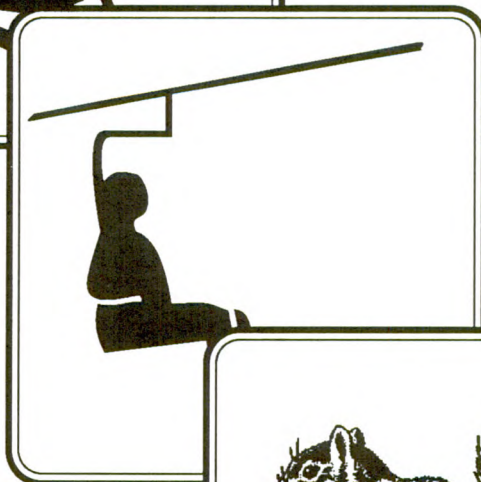
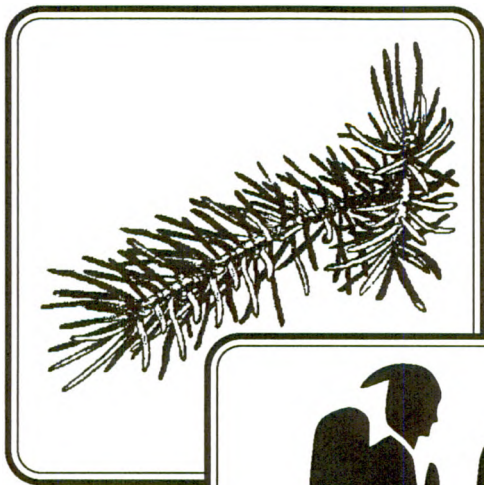
JAMES BUCHANAN

By the President:

LEWIS CASS, Secretary of State

# GLOSSARY

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## GLOSSARY

**Airshed**

A geographical area that, because of topography, meteorology and climate, shares the same air.

**Alpine**

Related to high-elevation slopes above timberline.

**Alpine Skiing**

Skiing where boot heel is secured tightly to the skies, on developed slopes using chairlifts – downhill skiing.

**Alternative**

One of several policies, plans or projects proposed for decision-making.

**Aquatic Ecosystem**

The stream channel, lake or estuary bed, water, biotic communities and the habitat features that occur within them.

**Background**

The visible terrain beyond the foreground and middleground where individual trees are not visible but blended into the total fabric of the forest stand.

**Base Area**

Related to the defined geographic area of a developed ski area where parking, lodge facilities, skier services, and/or retail and commercial services are usually provided.

**Big Game**

Those species of large mammals normally managed for sport hunting.

**Catchline (relative to this EIS)**

Road at lower end of the upper basins to “catch” skiers and prevent them from dropping into the steep Knuppenburg Lake slopes.

**CEQ**

The Council on Environmental Quality, an advisory council to the President established by the National Environmental Policy Act of 1969. It reviews federal programs for their effect on the environment, conducts environmental studies and advises the President on environmental matters.

**Comfortable Capacity**

Relative to this EIS, the number of skiers who can comfortably use the skiing areas at White Pass. This is a management term defined by the White Pass Company and relates to the skier capacity of the slopes and the company’s objective for “quality” skiing and is essentially measured by when it is exceeded, i.e., when skiing quality declines because of factors such as the number of runs a skier can make in a day, time waiting in lift lines and in lines for food service or restrooms, and, more subjectively, the feeling of how crowded the area is.

**Commercial Forest Land**

Land that is capable of producing crops of industrial wood and is not withdrawn from timber use by statute or administrative regulation.

**Compaction**

The act or process of becoming compact, usually applied in geology to the changing of loose sediments into hard, firm rock. In forest terms it usually refers to soil becoming compacted by surface pressure, often from heavy machinery or pedestrian traffic.

**Composting Toilet**

Unplumbed vault toilet where additives and air are circulated to increase the natural breakdown of waste.

**Cross-Country Skiing**

See Nordic Skiing.

**Cultural Resources**

Any site, structure or object, or group of sites, structures or objects that have been made, modified or used by man in the past, but may include presently-used structures, sites, etc. Usually considered to include architectural, archaeological and historical resources.

**Cumulative Effect**

The impact on the environment which results from the incremental impacts of an action when added to other past, present and reasonably foreseeable future actions regardless of what agent or person performs such other actions.

**DEIS**

Draft Environmental Impact Statement. Required by environmental law to assess effects of certain actions, it is an initial report on reasons for, and effects of these actions (projects, procedures, etc.) It usually includes alternative actions, or varying degrees of actions.

**Delivered Sediment**

The amount of eroded soil that enters a live stream or lake.

**Developed Recreation Site**

Distinctly designated area where facilities are provided for concentrated public use, e.g., campgrounds, picnic areas, boating sites, and ski areas.

**Dispersed Recreation**

Outdoor recreation that takes place outside developed recreation sites or Wilderness.

**DOE (WDOE)**

Washington State Department of Ecology

**DOT (WDOT)**

Washington State Department of Transportation

**DOW (WDOW)**

Washington State Department of Wildlife

**Downhill Skiing**

see Alpine Skiing.

**Duff**

Partly decayed organic matter on the forest floor.

**EA**

See Environmental Assessment

**Effects**

Environmental consequences as a result of a proposed action. Included are indirect effects, which are caused by the action and are later in time or further removed in space, but which are still reasonably foreseeable. Indirect effects may include population growth-inducing changes in the patterns of land use, population density or growth rate, and related effects on air, water and other natural systems, including ecosystems.

- EIS**  
Environmental Impact Statement. Required by law, this is a comprehensive report of reasons for and effects of actions, including studying and analyzing pertinent data, and proposing and examining alternatives to the action.
- Emissions**  
Substances discharged into the air, such as from stoves, fireplaces and autos.
- Endangered Species**  
Any species (animal or plant) which is in danger of extinction throughout all or a significant portion of its range. An Endangered Species must be designated in the Federal Register by the appropriate federal agency Secretary.
- EPA**  
The Federal Environmental Protection Agency.
- Erosion**  
The wearing away or detachment of the land surface by running water, wind, ice, or other geologic agents.
- Environmental Assessment**  
A concise public document required by the regulations implementing the National Environmental Policy Act. One step below an EIS, it can be used to decide if an EIS is needed.
- Eutrophication**  
Natural process in shallow lakes where plant growth in the lake increases and the ability to decompose organic material decreases. It leads to the gradual filling in of the lake.
- EVC**  
Existing Visual Condition. The current condition of the landscape from the visual management standpoint; description of the degree of visual alteration that has occurred at a place.
- FEIS**  
Final Environmental Impact Statement.
- Fishery**  
Lake or stream that contains fish. May naturally reproduce fish or be artificially stocked.
- Forbs**  
Low-growing, non-grass plants, sometimes called weeds. Can include flowering plants.
- Foreground**  
Visual (scenery) management term to describe what is adjacent to a high-value scenic area, recreation facility or forest highway.
- FSM**  
Forest Service Manual. Set of policy and management guidelines with which the Forest Service manages National Forests.
- Habitat**  
The place where a plant or animal can or does naturally or normally live or use.
- Headwall**  
Steep, upper part of a high-elevation basin, often with cliffs or talus slopes.
- Hydrologic**  
Relating to the properties, distribution and circulation of water.
- ID Team**  
Interdisciplinary team. A group of people that collectively represent several specialties and whose duty it is to coordinate and integrate the analysis for and preparation of the EIS.

**Impacts**

Any change in social, economic, physical or biological factors which result from direct or indirect effects on an action. They may be adverse or beneficial depending on the direction of change.

**Intermittent Stream**

A stream that flows above ground at intervals or only flows periodically during the year.

**Irretrievable**

Applies to losses of production, harvest, or use of renewable natural resources. For example, some or all of the timber production from an area is irretrievably lost during the time an area is used as a winter sports site. If the use is changed, timber production can be resumed. The production lost is irretrievable, but the action is not irreversible.

**Irreversible**

Applies primarily to the use of nonrenewable resources, such as mineral or cultural resources, or to factors, such as soil productivity, that are renewable only over a long time. Irreversible also includes loss of future options.

**Issue**

A point, matter, or question of public discussion or interest to be addressed or decided through the planning process.

**Krumholz**

Area of trees at the upper edge of timberline where environmental conditions are so severe that they are not upright, but rather grow as distorted shrubs or mats.

**Limiting Factor**

Physical or biological condition that constrains a population size of a species, e.g., winter range, for elk.

**Master Plan**

A concept and/or program for long-term development of a defined geographic area.

**Middleground**

The visible terrain beyond the foreground where individual trees can still be identified but are not seen as separate from the stand.

**Mitigation**

Actions to avoid, minimize, reduce, eliminate or rectify the impact of a management practice.

**NEPA**

The National Environmental Policy Act of 1969. This law requires the preparation of environmental impact statements for every major Federal Action which causes a significant effect on the quality of the human environment.

**Nonpoint Pollution**

Pollution whose source is an area, a collection of sites or some other type of "group" source. Erosion and sedimentation are examples. Exhaust from many autos, as in a parking lot, is generally considered nonpoint pollution. Compare with point pollution.

**Nordic Skiing**

Skiing when the boot heel is not fastened to the skis. Generally done in undeveloped areas, but may also be on trails and in tracks groomed especially for the sport. Same as cross-country skiing and is contrasted with Alpine, or downhill skiing.

**Old Growth**

Very old trees, usually well past physiological maturity. Definitions vary, but generally this class includes trees over 200 years old, in areas which have never been logged. The term can refer to a type of habitat, ecosystem or forest type.

**PAOT**

Persons at one time, a capacity measurement indicating the number of people that can use an area at one time. Here it includes skiers and non-skiers.

**Plant Community**

A combination of all plants living in a particular location under particular influences. A plant community is a reflection of integrated environmental influences on the site, such as soils, temperature, elevation, solar radiation, slope, aspect and rainfall.

**Platter Lift**

A conveyance that pushes skiers uphill while they remain on their skis and on the slope and rest against some fixture of the lift. Examples are J-bar, T-bar and Poma lifts. Compare with rope tow and chair lift.

**Point Pollution**

Pollution which originates at a single identifiable source, such as a sewage treatment plant or fireplace. Compare with nonpoint pollution.

**Potable**

Suitable for drinking.

**Ranger District**

An administrative subdivision of a National Forest, supervised by a District Ranger who reports to a Forest Supervisor.

**Recreation Opportunity**

A recreation activity available for those who want to take advantage of it. It may be a complete activity or an aspect of a situation.

**Recreation Visitor Day (RVD)**

A unit for measuring recreation use. There are 12 visitor hours in a visitor day, which may consist of one person for 12 hours, 12 persons for one hour, or any equivalent combination by individuals or groups.

**Retention**

A visual quality objective where human activities are not evident to the casual forest visitor.

**Riparian Areas**

Land adjacent to and affected by watercourses, lakes and sometimes seashores. The water bodies themselves are often included for management purposes. Wetlands, seeps and springs are also included.

**RVD**

See Recreation Visitor Day.

**SAOT**

Skiers at one time. A capacity measurement of the number of skiers that can use an area at one time. Compare to PAOT and "comfortable capacity."

**Scoping (Process)**

In conjunction with environmental analysis, an investigation which identifies issues and concerns associated with an action, within the authority of the Forest Service to analyze.

**Sediment**

Solid material, both mineral and organic, that is in suspension and is being transported from its site of origin by air, water, gravity or ice, or has come to rest on the earth's surface either above or below water level.

**Sensitive Species**

Those species of plants or animals that have appeared in the Federal Register as proposed for classification and are under consideration for official listing as Endangered or Threatened species, that are on an official state list, or that are recognized by the Regional Forester as needing special management to prevent their being placed on federal or state lists.

**Skier Visit**

One person visiting a ski area for all or any part of a day or night for the purpose of skiing.

**Sheet Erosion**

The removal of a fairly uniform layer of soil from the land surface by water runoff.

**Slash**

The wood residue left on the ground after timber cutting and/or accumulating there as a result of storm, fire, or other damage. It includes unused logs, uprooted stumps, broken or uprooted stems, branches, twigs, leaves, bark and chips.

**Snag**

Any standing dead tree or portion of the stem of one, having a minimum diameter at breast height of ten inches and a minimum height of ten feet.

**Snotel Gauge**

Recording weather instrument used by the Soil Conservation Service to measure precipitation and snowfall.

**Soil Displacement**

The movement of soil from one place to another by some management-activity-related practice. An example of soil displacement would be during road construction, moving soil and exposing it to the elements. Soil displacement usually removes the protective surface material (grasses, forbs, duff, etc.), thereby exposing the mineral soil to the erosional forces of water and wind.

**Soil Disturbance**

The mixing of duff or other woody material into the surface soil horizons without significant movement of the soil from one place to another. There is little if any bare soil created by this activity; therefore, soil erosion is seldom a problem as a result of soil disturbance.

**Study Area**

Geographic area analyzed in the EIS. Here, an area roughly bounded by Shoe Lake Basin to the south, Knuppenburg Lake to the west, Sand Lake to the north, and Dog Lake to the east. Indirect effects are included for the U.S. Highway 12 corridor.

**Subalpine**

Related to high-elevation slopes at and somewhat below timberline.

**Succession**

The process of plant community development that involves changes in species, structure and community processes with time, that is, one plant community changes into another.

**Talus**

Sloping pile of rock fragments at the foot of a cliff.

**T, E & S Species**

Plant or animal species listed as Endangered or Threatened by the Secretary of the Interior, or listed by a Regional Forester as Sensitive.

**Thermal Cover**

A habitat type for large herbivores that provided temperature protection. This usually is provided by stands of trees.

**Threatened Species**

Any species of animal or plant which is likely to become an Endangered species within the foreseeable future throughout all or a significant part of its range and which has been designated in the Federal Register by the Secretary of the Interior as a threatened species.

**Timberline**

Tree line; the upper elevation limits of tree growth. In the Pacific Northwest this is usually a broad, extended forest/meadow mosaic rather than a narrow, well-defined transition line.

**VAC**

**Visual Absorption Capability.** The relative degree that a landscape can accommodate change or alteration without adverse effects.

**Viewshed**

The total landscape seen or potentially seen from all or a logical part of a travel route, use area, or water body.

**Visual Management System**

The management system used to protect and enhance the visual resource. Involves mapping the characteristics of form, line, shape and color of an area and development of management objectives from a visual standpoint. See VQO, EVC and VAC.

**VQO**

**Visual (Scenic) Quality Objective.** Goals for management of the visual resource which describes various degrees of natural landscape character alteration.

**Water Quality**

The biological, physical and chemical properties of water that make it suitable for given specified uses.

**Wetlands**

Areas that are inundated by surface or ground water with a frequency sufficient to support a prevalence of vegetative or aquatic life that requires saturated or seasonally-saturated soil conditions for growth and reproduction (Executive Order 11990). Or an area that under normal circumstances would support that type of life.

**Washington State Wilderness Act**

(Wilderness Act of 1984, PL98-339). Comprehensive federal legislation to establish National Forest Wilderness areas within the State of Washington.

**Wilderness**

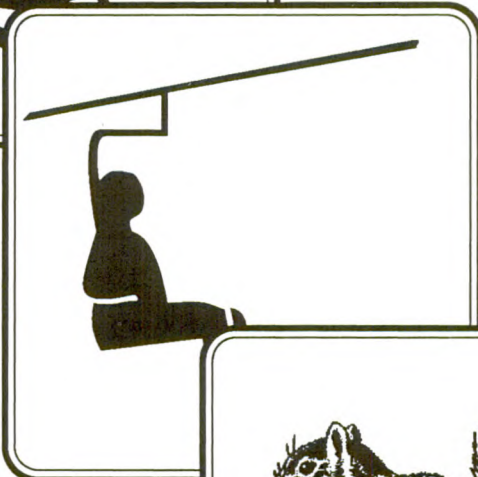
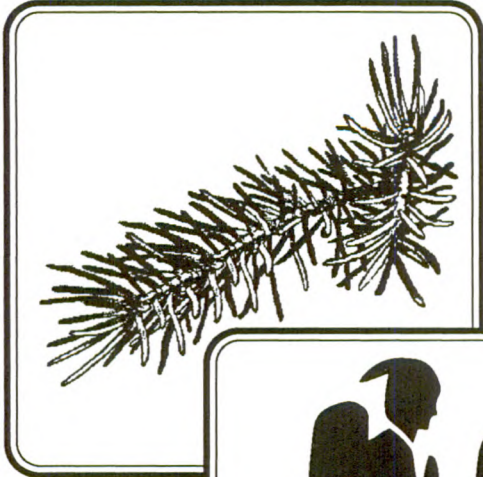
The Wilderness Act of 1964 defines Wilderness as follows: "A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean in this Act, an area of undeveloped federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the force of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive experience."





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*italics = figure; bold = section*

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