# 2.0 ALTERNATIVES

NEPA regulations require that all reasonable alternatives be considered to ensure that the proposed actions are well conceived and thoroughly evaluated (40 CFR 1502.14a). Reasonable alternatives include those that are practical or feasible from the technical and economic standpoint, using common sense, rather than those that are simply desirable (46 CFR 18027, Forty Most Asked Questions Concerning CEQ's NEPA Regulations).

This chapter identifies and compares a reasonable range of alternatives for the White Pass Expansion Proposal. A No Action Alternative and four Action Alternatives, which include the proponent's Proposed Action, are included within this range of alternatives. These alternatives have been developed in accordance with CEQ regulations to provide the decision-maker and the public with a clear basis for choice (40 CFR 1502.14).

Chapter 2 also identifies and discloses the process used to develop alternatives, alternatives considered but eliminated, alternatives considered in detail, mitigation, comparison of alternatives and monitoring requirements.

## 2.1 PROCESS USED TO DEVELOP ALTERNATIVES

A multi-step process was used to develop the range of alternatives considered in detail in this FEIS. This range is intended to:

- Provide clear choices for the decision-maker;
- Fulfill the Purpose and Need for the Proposed Action;
- Address significant issues; and
- Remain consistent with the goals, objectives, standards, and guidelines in the Forest Plan and other applicable laws, regulations, policies, and plans.

### *Step 1: Scoping and Identification of Issues*

During the scoping process, the public, tribal representatives, and other government agencies provided comments regarding the proposal. Following the initial scoping period, the IDT categorized these comments into approximately 22 different topic areas, and then sorted them into 11 public issues (refer to Section 1.5.1 – Scoping Process and Public Participation and Table 1-2). Based upon the public scoping issues and other issues raised by the IDT, the Forest Supervisors of the OWNF and GPNF then determined which individual issues or groups of issues were considered to be significant. This resulted in the identification of eight significant issues. Significant Issues (refer to Section 1.5.2 – Significant Issues) were then used to help frame alternatives to the Proposed Action.

### *Step 2: Conceptual Alternative Formulation*

Alternatives to the Proposed Action were formed in order to address the possible effects of the action as identified in the Significant Issues. Where feasible, potential effects of the construction of specific elements or groups of elements within the Proposed Action were reduced or eliminated by making revisions to the expansion proposal. Thirteen different alternatives were developed, including the No Action and Proposed Action.[13]

### *Step 3: Evaluation of Alternatives*

The feasibility of implementing the White Pass Expansion under each of the eleven Action Alternatives (excluding the Proposed Action and No Action) was then assessed. The IDT considered whether the resulting alternative could be feasibly implemented, if it would actually respond to the significant issues, and if it would meet the Purpose and Need for the Proposed Action.

### *Step 4: Refinement of a Range of Alternatives*

The Forest Supervisors of the OWNF and the GPNF approved a range of five alternatives, including the No Action Alternative and Proposed Action, for analysis in the Final EIS. This range meets the Purpose and Need to varying degrees and is intended to respond to the Significant Issues and provide a variety of scenarios for the White Pass Expansion Proposal.

### *Step 5: Identification of a Preferred Alternative*

NEPA requires that the Final EIS identify the agency's Preferred Alternative or Alternatives, if one or more exists after detailed review of the analyses of the potential environmental consequences prepared for the FEIS.

## 2.2 ALTERNATIVES AND COMPONENTS CONSIDERED, BUT ELIMINATED FROM FURTHER ANALYSIS

NEPA regulations require that this Final EIS discuss the reasons for eliminating any alternatives explored, but not developed in detail (40 CFR 1502.14a). A detailed discussion of alternatives, and alternative components considered but eliminated from further analysis, is presented below.

### 2.2.1 Alternatives Considered

#### *2.2.1.1 Alternative 3 - Original Chair 5 with Hogback Basin Nordic Trail*

Based on Alternative 3 from the 1998 White Pass Final EIS (USDA 1998c), Alternative 3 was originally formulated to respond to issues relating to the overall size and scope of the expansion (i.e., Water and Watershed Resources and Visual Resources) as well as Terrain Distribution and Recreation. Alternative 3

[13] For continuity, the preliminary alternatives were numbered Alternative 1 (No Action), Alternative 2 (Proposed Action) and Alternatives 3-11. These numbers stayed with the alternative, whether it was carried forward or not.

would partially address the Purpose and Need through expansion of the SUP area by approximately 767 acres and the installation of one chairlift in Pigtail Basin, which would provide additional terrain at higher elevations. Alternative 3 would also include development of a Nordic trail system, including a warming hut along Hogback Ridge, in order to provide additional winter recreation opportunities in Hogback Basin without development of a ski lift or alpine ski trails.

Under Alternative 3, the bottom terminal of the new chairlift would be in a flat area to the west of the Quail ski trail, at elevation 5,500 feet and the top terminal would be located at elevation 6,200 feet, approximately 1,150 feet northeast of the PCNST.

Unlike the 1998 Final EIS, Alternative 3 would utilize the existing yurt, located along the Quail trail, to provide restrooms and limited food services, with no lodge construction considered.

*Rationale for Elimination of Alternative 3*

1) Alternative 3 includes a bottom terminal site located adjacent to the Quail trail. In this alignment, all of the trails would include lengths of up to 600 feet with a slope gradient of 0 percent. As a result, skiers and snowboarders would not be able to access the bottom terminal.

2) Based on terrain distribution, Alternative 3 vastly increases low intermediate terrain, which is already in abundance at White Pass. In addition, Advanced Intermediate terrain, which is already well below market demand, would be reduced further in terms of percentage of total terrain.

3) A one-lift expansion can be better developed using the alignment provided in Alternative 6, which would avoid the flat area to the west of the Quail ski trail.

4) A need has not been established for additional Nordic terrain at White Pass or in Hogback Basin.

#### *2.2.1.2 Alternative 4 - Mitigated Two-Lift Expansion*

Alternative 4 was initially presented in the DEIS as a considered alternative; however, Alternative 4 was modified following the public comment period for the DEIS (refer to Section 2.3 and Chapter 3 for further details on Modified Alternative 4). As a result, the original Alternative 4 was subsequently eliminated from consideration and the rationale behind this elimination is detailed below.

Initially Alternative 4 was developed to address issues associated with riparian areas, terrain distribution and visual effects to the PCNST, while addressing the Purpose and Need in a manner similar to the Proposed Action. Alternative 4 would include the development of two lifts and associated trails in the expansion area. Under Alternative 4, the CCC at White Pass would increase from 2,670 to 4,100. Ski terrain at White Pass would have increased from 37 trails on 212.3 acres to 54 trails on 286.1 acres. Alternative 4 would have required an amendment of the GPNF Plan to allow for the crossing of riparian influence areas by ski trails and other related facilities.

Alternative 4 would have included the installation of a water supply line from the existing water treatment facility to the mid-mountain lodge and evaluation of a well, located upslope of the lodge within the 50-foot lodge building envelope.[14] Evaluation of both water supply systems for the lodge site would allow for selection of an alternative system in the event the preferred system proved to be infeasible at the time of construction.

*Rationale for Elimination of Alternative 4*

1) Compared to Modified Alternative 4, the original Alternative 4 would not address skier circulation and dispersal because it contains no improvements to the existing ski area.

2) Compared to Modified Alternative 4, the skier density on the Main Street trail under Alternative 4 would not be within acceptable limits.

3) Compared to Modified Alternative 4, the need for increased novice terrain would not be met, as Alternative 4 does not provide a suitable novice method of skiing down from the existing summit to the base area.

4) Alternative 4 would not address the need for improved skier densities because the comparatively higher capacity in the expansion area of Alternative 4 would result in unacceptably high egress densities to the Lower Paradise trail compared to Modified Alternative 4.

5) The parking lot under Alternative 4 would not be large enough to allow for off-highway parking (only during peak visitation) as compared to Modified Alternative 4.

### *2.2.1.3 Alternative 5 - Maximum Development within the Existing SUP Boundary*

Alternative 5 was developed to evaluate the potential to meet the Purpose and Need (e.g., additional terrain, better match to market demand, more terrain at higher elevations) by developing within the existing SUP area. Alternative 5 would include the development of a new chairlift and two trails in the western portion of the SUP area, to the north of the existing *Paradise* lift. The bottom terminal would be located at elevation 5,275 feet and the top terminal would be slightly above the 6,000-foot elevation. These trails would interconnect with the Paradise pod and would include an additional egress trail from elevation 4,900 to 4750 feet, upslope of the existing Main Street, along with a connector to the existing egress.[15] Development of this lift would require re-contouring of the area between elevation 5,750 feet and 5,925 feet, as well as the egress trails, in order to reduce slope gradients to a level below expert.

In the eastern portion of the SUP area, a new chairlift would be constructed with a series of new trails that take advantage of available terrain in the eastern portion of the SUP area. The bottom terminal of the lift

[14] The term "building envelope" refers to the total area of disturbance during construction, including the construction area for the lift terminal or building, along with stockpile areas, storage areas, and parking areas for machinery.
[15] In this EIS, the word "pod" refers to a lift and its associated trails.

would be situated at approximately 4,575 feet, with the top terminal located at elevation 5,425 feet, above the cliffline. This pod would interconnect with the existing trail network along the eastern side of the mountain.

In order to provide separation of lower level skiers on the *Lower Cascade* lift and upper level skiers on the new lift, portions of the Lower Holiday, Far Side, and Near Side trails would be revegetated with trees.

Alternative 5 would include significant re-contouring along the cliffline and *Cascade* traverse in order to reduce slope gradients along the cliffline.[16] In addition, a 2.5-acre parking lot would be developed below the bottom terminal of the *Lower Cascade* lift and the new lift. This parking lot would include a ticket booth and restroom, which would provide a second arrival portal for White Pass guests.

Alternative 5 would also include a 2-story mountain-top lodge, with a building footprint of approximately 3,000 square feet. The lodge would provide limited food service, 150 restaurant seats and restroom facilities. The lodge would also include a 10,000-gallon water tank and a gray water re-circulating gravel filter (RGF) wastewater treatment system with a drainfield occupying approximately one-quarter acre.

### *Rationale for Elimination of Alternative 5*

1) Based on terrain distribution by ability level, Alternative 5 would increase the proportion of low intermediate terrain, which is currently well above market demand at White Pass.

2) In order to reduce the effect of the cliffline on skier circulation at White Pass, a great deal of blasting would be required to cut into the cliffline and fill below the cliffline. Even with the trail recontouring, the majority of trails crossing the cliffline would remain expert level terrain due to the engineering constraints associated with lowering the slope gradients, while advanced intermediate terrain is needed. The resulting terrain over the cliffline, even with significant recontouring, would remain skewed toward the expert level.

3) The blasting required along the cliffline exceeds 80,000 cubic yards of material. The Yakama Nation has been sensitive to blasting of rock faces within the ski area. Mitigations for past projects have included protection of certain rock cliff features. The magnitude of blasting required by this alternative would make avoidance of rock cliff features impractical.

4) The beneficial aspects of Alternative 5, including increased use of the existing SUP area and projects designed to improve skier circulation, can be addressed in a lower impact manner, as shown in Alternative 9.

[16] For instance, the grading to widen Cascade and to reduce the slope gradients along Holiday Cliff, Cascade Cliff, and Hourglass, would require blasting the cliffline and removing over 80,000 cubic yards of material to create the appropriate slope gradients.

### *2.2.1.4 Alternative 7 - Mitigated Proposed Action*

Alternative 7 was developed in order to provide for development of two lifts in the expansion area. It would include lift and trail development similar to the Proposed Action, addressing the Purpose and Need in a manner similar to the Proposed Action, while minimizing impacts on riparian resources and enhancing skier circulation. As with the Proposed Action, Alternative 7 would include an SUP area expansion of 767 acres. Revisions to the Proposed Action include alternative routing of the access and egress trails to avoid wetland areas, narrower and/or slightly revised ski trails to minimize impacts on riparian areas, along with restrictions on the building envelope of bottom terminal sites to avoid wetlands and riparian areas. In addition, the top terminal of Chair 6 would be located approximately 600 feet down slope of the terminal location in the Proposed Action, at elevation 6,050 feet, to avoid wetlands and riparian areas, and to allow for less development along the SUP/Wilderness boundary. A mid-mountain lodge would be included, similar to the Proposed Action. However, water would be supplied to the lodge in a buried waterline, with aerial crossings over streams, in order to reduce the number of trips to the lodge by snowcat.

Alternative 7 would include an egress trail from the bottom of Chair 7 to allow skiers to access the base area without having to ride Chair 7 from lower Hogback Basin.

Similar to Alternative 5, a 2.5-acre parking lot would be developed below the bottom terminal of the *Lower Cascade* lift. This parking lot would include a ticket booth, which would provide a second arrival portal for White Pass guests.

Alternative 7 would include a re-route of the PCNST to the Wilderness boundary, within Hogback Basin, in order to avoid the proposed Chair 6 while still allowing hikers to view Mount Rainier.

#### *Rationale for Elimination of Alternative 7*

1) Alternative 7 was developed in a manner that would essentially build the Proposed Action, while addressing issues such as riparian impact, impacts on PCNST users, lack of emergency egress from the bottom of C-7 in Hogback Basin, and concern over hauling water to the lodge via snowcat. Originally, Alternative 4 was developed as a purely riparian avoidance alternative. The components of Alternative 7 were largely in common with Alternative 4, so it was determined by the IDT and Deciding Officials that the additional mitigating elements of Alternative 7 should be brought into Alternative 4. This would create an overall alternative that carries forward advantages of the Proposed Action but reduces development to address issues associated with terrain distribution, water and watershed, recreation, parking and visual resources. As a result, the issues addressed in Alternative 7 are now addressed in Modified Alternative 4.

### *2.2.1.5 Alternative 8 - Pigtail Basin Lift with Partial Infill*

Alternative 8 was developed to evaluate an alternative that would address the issues by providing for a reduced expansion, coupled with development in the existing SUP area. This alternative would address the Purpose and Need by providing additional terrain that is higher on the mountain, and by enhancing the terrain at White Pass to meet market demand. Alternative 8 would include the Basin lift, a bottom-drive, fixed grip quad chairlift, as described for the Proposed Action (refer to Section 1.1.2 – Purpose of and Need for Action). The *Basin* lift would be approximately 3,700 feet in length, have a base terminal elevation of roughly 5,520 feet, and a top terminal elevation of approximately 6,200 feet. The lift and associated trails would be constructed in Pigtail Basin, with no development in Hogback Basin.

Alternative 8 would also include the development of a new chairlift and two trails in the western portion of the existing SUP area, as described for Alternative 5. The bottom terminal would be located at elevation 5,275 feet and the top terminal would be slightly above the 6,000-foot elevation. These trails would interconnect with the Paradise pod and would include an additional egress trail from elevation 4,900 to 4750 feet, upslope of the existing Main Street, along with a connector to the existing egress. As in Alternative 5, development of this lift would require re-contouring of the area between elevation 5,750 feet and 5,925 feet, as well as the egress trails, in order to reduce slope gradients.

Alternative 8 would include a 2-story mid-mountain lodge, with a building footprint of approximately 3,000 square feet. The lodge would be located along the Quail trail at elevation 5,350 feet and in the vicinity of the egress from the Basin pod. The lodge would provide limited food service, 150 restaurant seats and restroom facilities. The lodge would be serviced by the existing water and wastewater systems through the installation of piping in mountain work roads.

*Rationale for Elimination of Alternative 8*

1) Alternative 8 includes no development proposal that is not provided in another alternative.

2) Alternative 8 includes the cliff blasting that the Deciding Officials had determined should be eliminated (refer to Alternative 5). Alternative 9 incorporates the remaining infill component of Alternative 8. Because the Deciding Officials could choose to authorize implementation of portions of more than one alternative, (e.g., portions of Alternatives 2, 4 or 6 coupled with Alternative 9), Alternative 8 was eliminated from further consideration.

### *2.2.1.6 Alternative 10 - Expand the White Pass Ski Area into areas other than the Pigtail and Hogback Basins (from 2000 EIS)*

This alternative would leave Pigtail and Hogback Basins undeveloped, but would address the Purpose and Need by providing additional alpine skiing through expanding into areas other than Hogback or Pigtail Basins. Expansion possibilities include Miriam Basin to the south, which was included in the 1979 White Pass Ski Area Master Plan, and the Twin Peaks area to the east.

*Rationale for Elimination of Alternative 10*

1) Miriam Basin is located in the Goat Rocks Wilderness Area and a portion of the Twin Peaks development would also require encroachment into the Wilderness. Wilderness classification makes these areas unavailable for developed ski area study or use.

2) Development in the eastern portion of the existing SUP area would be more feasible, but is already included in Alternative 9.

### *2.2.1.7 Alternative 11 - Snowcat skiing only in Hogback and Pigtail Basins*

Under Alternative 11, skiers would use existing chairlifts to access Pigtail Peak. At the summit, skiers would be transported to Hogback Ridge by snow-cat. Alternative 11 attempts to address the Purpose and Need by providing expanded winter recreation opportunities in Pigtail and Hogback Basins for some alpine skiers. It would also address the significant issue regarding loss of backcountry skiing opportunities.

*Rationale for Elimination of Alternative 11*

1) Development of snowcat skiing would allow the use of Hogback and Pigtail Basins for alpine skiing. The capacity of a snowcat, however, is typically fewer than 20 people. Provision of such a service would not meet the Purpose and Need (refer to Section 1.1.2 – Purpose of and Need for Action). More specifically, the Purpose and Need states that more terrain is needed to provide for increasing visitation/demand for lift-served skiing at White Pass. In addition, the Purpose and Need states that skier circulation and trail densities need to be addressed in order to provide for a quality experience at White Pass. By providing skiing for approximately 20 people at one time in Hogback and Pigtail Basins, increasing demand for lift-served skiing would not be met, trail densities would not be reduced and congestion would remain essentially the same within the current ski area.

### *2.2.1.8 Alternative 12 - Pigtail Basin Lift with Top Terminal Below the PCNST*

Under Alternative 12, a chairlift would be developed in Pigtail Basin, in the alignment of Alternative 3. The top terminal of the lift would be developed below the PCNST, at elevation 5,950 feet. The bottom terminal would be at elevation 5,520 feet. The purpose of this alignment would be to provide a chairlift in Pigtail Basin that would not cross the PCNST, while addressing the need to reduce congestion on the slopes and extend the season through additional terrain that is higher on the mountain.

*Rationale for Elimination of Alternative 12*

1) The topography below the PCNST would not allow for skiers to ascend to the skier's right of the chairlift, because the fall line is directed toward skier's left. In this alignment, the lift would support one main trail along the left portion of the pod, and one connector trail from the lift line

to the first trail. Generally, chairlifts require three to four ski trails in order to provide sufficient terrain for the uphill capacity.

2) With the top terminal at 5,950 feet, the traverse to the proposed mid-mountain lodge would not exhibit sufficient gradient to allow skiers and snowboarders to glide. The top terminal would have to be above the PCNST in order to provide enough elevation for a suitable glide to the lodge site (approximately 8 percent - 10 percent slope gradient).

#### *2.2.1.9 Alternative 13 – Lift Replacement and Upgrade*

In response to public comments to the DEIS, Alternative 13 was developed to evaluate the use of more high speed lifts in the existing SUP area. Under Alternative 13, no new lift alignments or terrain would be developed. The *Pigtail, Lower Cascade*, and *Paradise* lifts would be replaced by high speed, detachable quads, increasing the Comfortable Carrying Capacity (CCC) to 3,350. Alternative 13 provides upgraded lifts and increases the capacity of the mountain without any new development of lifts or terrain.

*Rationale for Elimination of Alternative 13*

1) Alternative 13 would not address the need for improved circulation and dispersal because it does not propose any modifications to existing ski trails, or any new trails as in the alternatives carried forward.

2) By providing high-speed lifts, Alternative 13 would significantly increase densities and crowding, which would exacerbate density issues associated with the existing terrain. While detachable lifts would provide quicker out-of-base lift convergence, it would also place too many people on ski trails (i.e., Holiday, Cascade, Main Street) to provide a quality or safe skiing experience.

3) Under Alternative 13, the need for increased novice and advanced intermediate terrain is not met, as no additional terrain is proposed.

4) Alternative 13 does not address the need for improved skiing during the early season, warm periods, and low snow years because it does not provide additional terrain at higher elevations.

### 2.2.2 Other Project Elements Considered

#### *2.2.2.1 Pedestrian Overpass Across US 12*

In order to address concerns over safety along US 12, the IDT and Deciding Officials evaluated the feasibility of installing a pedestrian bridge over US 12, or a tunnel under US 12, from the existing parking lot to the base area. This project element would address the Purpose and Need by improving safety for skiers crossing the highway and enhancing skier access to base areas facilities.

*Rationale for Elimination of Pedestrian Overpass/Tunnel*

1) In order to meet WSDOT standards, such a bridge would be more expensive than building a new parking lot on the south side of the highway. A new parking lot on the south side of the highway would be more efficient in terms of walking distance, and a new parking lot would provide an opportunity to develop a second portal into White Pass Ski area. As a result, a new parking lot is included in several of the Action Alternatives in order to address concerns over the safety of pedestrians along US 12 (refer to Section 2.3.4.8 – Pedestrian Management Plan).

### *2.2.2.2 Provide Mountain Bike access to Pigtail and Hogback Basins*

During the scoping comment period, several commenters requested that any approval of chairlifts in the expansion area include summer operations and allow for lift-served mountain biking in the expansion area. Such a proposal would increase recreational opportunities at White Pass, but would not address the Purpose and Need for the Proposed Action.

*Rationale for Elimination of Mountain Bike Access*

1) The proximity of the upper terminal of Chair 6 to the PCNST would increase the likelihood that mountain bikers would access the PCNST, on which mountain bikes are prohibited. The IDT and Deciding Officials determined that the potential for lift-served mountain bikers to access the PCNST was too high to consider such an operation.

2) Summertime use of the Hogback and Pigtail Basins would result in wildlife impacts that are otherwise avoided by winter-only use. These impacts include animal displacement and disturbance to nesting that currently occurs in the area.

3) There is no indication that lift-served mountain biking would result in a successful business venture. Nearby ski areas, including Crystal Mountain and The Summit at Snoqualmie, have eliminated mountain biking from their summer activities.

4) The Purpose and Need for the proposed project is specific to winter development and use only. The proponent has indicated that they have no desire to operate a mountain bike operation during the summer.

### *2.2.2.3 Location of Chair 6 (Basin) Under Originally-Proposed Action*

Under the original proposal by White Pass, the Chair 6 (C-6) (*Basin*) would access Advanced Intermediate to Low Intermediate level terrain. The bottom terminal would be located approximately 1,500 feet upslope (south) from the existing Quail ski trail at approximately 5,520 feet elevation The upper terminal would be located adjacent to the western boundary of the proposed SUP area, at approximately 6,160 feet elevation.

*Rationale for Elimination of the Original Chair 6 (Basin) Location*

1) It was determined during a meeting between the proponent, the Forest Service, and representatives of the Pacific Crest Trail Association (James Hilton – PCTA President and Mike Dawson- PCTA Trail Operations Director- refer to PCTA, 2004) on September 9, 2004, that the top terminal of C-6 (*Basin*) could be located due west by approximately 300 feet (as compared to the original Proposed Action) in order to eliminate direct views of the lift by PCNST users, provided that the PCNST would be rerouted to the Wilderness boundary and around the top terminal of the *Basin* lift. In addition, it was determined that this re-alignment of C-6 would not affect the quality of the trails associated with the ski pod, as originally designed. Therefore, White Pass Ski Company altered their Proposed Action to reflect the location agreed upon by themselves and PCTA representatives.

#### *2.2.2.4 Pacific Crest Trail Re-route into Miriam Basin*

The IDT and Deciding Officials considered a re-route of the PCNST into Miriam Basin onto the historic location of the Cascade Crest Trail, in order to address the break in experience to PCNST users. Specifically, the PCNST would be re-routed east into Miriam Basin, to the historic location of the Cascade Crest Trail to avoid passing under the *Basin* lift. The trail re-route would result in the construction of approximately 3,600 feet of trail. The trail would be constructed to pack and saddle standards (24-inch tread and 6-foot clearing width). The new trail construction would require approximately 0.9 acre of ground disturbance and 1.26 acres of disturbance to vegetation. In addition, a total of 0.10 acre of the existing PCNST (a segment within Hogback Basin and a segment in the Goat Rocks Wilderness) would be decommissioned by disguising the abandoned trails ends, and allowing the old trail to restore itself naturally.

*Rationale for Elimination of the PCNST Re-route into Miriam Basin*

1) After a meeting with representatives of the Pacific Crest Trail Association (James Hilton – PCTA President and Mike Dawson- PCTA Trail Operations Director- refer to PCTA, 2004) on September 9, 2004 it was determined that the preferred location for the PCNST would be on the ridge rather than east of the ridge. This revised alignment would be preferable to those utilizing the PCNST because it would reduce visual impacts associated with Chair 6 and other project-related development, while retaining views to the north (i.e., across Hogback Basin and toward Mount Rainier).

2) Modified Alternative 4 contains a PCNST re-alignment to the ridge between Hogback and Miriam Basins, and along the Wilderness boundary, thereby providing for the proposed re-alignment location. The range of Action Alternatives includes the possible combination of the revised Chair 6 top terminal location in the Proposed Action (Alternative 2), described above, and

the PCNST re-route around the top terminal (Modified Alternative 4). As a result, no demonstrated need exists to re-route the PCNST into the Wilderness.

3) Rerouting the PCNST into Miriam Basin would result in increased resource impacts, (including the increased likelihood of the PCNST trail being managed below Plan standards for soils and water). The historic Cascade Crest Trail crossed at least one perennial stream and numerous wet areas, and lies within 50 feet of Miriam Lake. In addition, trail grades out of Miriam Basin are very steep. Trail construction would require numerous trail structures to lessen impacts to wet areas (including a bridge, boardwalks, check dams, and water bars), along with many switchbacks to keep the grade south out of Miriam Basin within trail standards and to check soil erosion. Trail maintenance costs would be high for this section of trail due to the increased structures. Another concern was that camping opportunities along this stretch of the PCNST are few (Shoe Lake Basin is closed to camping) and there is a high likelihood of Wilderness Recreation Opportunity Spectrum guidelines and LAC standards for Miriam Lake being exceeded if travelers are guided into this currently lightly used area.

#### *2.2.2.5 Shuttle System from Packwood and Naches to White Pass Ski Area*

In an effort to avoid development of additional parking at White Pass, a shuttle system was analyzed. The shuttle system would use a fleet of busses running between Packwood and Naches to and from White Pass during winter months. Under this scenario, White Pass Ski Company would provide a shuttle fleet to transport guests from Packwood and Naches to the ski area and back.

The proposed shuttle system would provide for the capacity of the new improvements at White Pass, while the existing parking lots and parking along US 12 would be retained. During peak days under Alternative 2, approximately 1,360 additional guests would have to use the bus shuttle system. Assuming 40 guests per bus, this equates to a requirement to operate 34 buses between Packwood and Naches during peak times, with an appropriate turn-around time.

##### *Rationale for Elimination of the Shuttle System from Packwood and Naches to White Pass Ski Area*

1) The expenditure associated with hiring/purchasing rolling stock (equipment available for use as transportation), employee costs, and maintenance costs was considered to be significant, relative to the comparable capital and operational expenses associated with a parking lot.[17]

[17] For example, Steven's Pass implemented a trial shuttle program for the Winter 2000/01 ski season, offering free round-trip shuttle service between Sultan and Steven's Pass in an effort to provide parking for guests who are unable to park at the ski area due to limited parking space. The cost to the ski area was approximately $18 per skier (Pers. Comm. Marler, Chet 2001).

2) A bus shuttle system between Packwood and Naches has been considered to be a regional transportation issue, particularly from an economic perspective (refer to Section 3.10 – Social and Economic Factors). The Cumulative Effects analysis (Section 3.10.4 – Cumulative Effects) describes the opportunity for a future shuttle program serving more than White Pass, however none is deemed to be reasonably foreseeable.

3) Requiring a shuttle system to provide for the added capacity at White Pass would not address the need for improved pedestrian and vehicle circulation, including the needs and issues surrounding parking along US 12.

#### *2.2.2.6 Authorization of Snowshoe Trails and the Zig Zag Nordic Ski Trail*

The Draft EIS considered integration of the existing snowshoe trail and Nordic trail systems into the MDP. A portion of the Nordic system (the *Zig Zag* trail) and the snowshoe trails were installed and operated without proper NEPA compliance. During the NEPA process, the snowshoe trails and *Zig Zag* Nordic trail were authorized to operate under an annual SUP, pending the Decision on this EIS. However, due to the previous unauthorized installation and operation of these trails, the Forest Service has determined that they should no longer be authorized for use. As a result, the 2006/2007 annual SUP will expire and no new SUP will be issued until a formal proposal is made and NEPA compliance is completed to determine whether or not continued use of the snowshoe trails and the *Zig Zag* Nordic trail should be authorized.

## 2.3 ALTERNATIVES CONSIDERED IN DETAIL

Four Action Alternatives and a No Action Alternative (Alternative 1) are analyzed in detail in this Final EIS, including the White Pass Ski Company's Proposed Action (Alternative 2).

Table 2.3-1 summarizes the range of alternatives considered in detail in this FEIS. Table 2.6-1, at the end of Chapter 2, provides a detailed comparison of the alternatives. Table 2.6-2 presents a comparison of environmental consequences by alternative.

**Table 2.3-1:**
**White Pass Expansion Proposal Final EIS -Range of Alternatives**

| Master Plan Components | Alt. 1 (Existing Conditions) | Alt. 2 (Proposed Action) | Modified Alt. 4 | Alt. 6 | Alt. 9 |
|---|---|---|---|---|---|
| Alpine Ski Area Capacity (CCC)[a] | 2,670 | 4,250 | 3,800 | 3,640 | 3,280 |
| SUP Area (acres) | 805[b] | 1,572 | 1,572 | 1,087 | 805 |
| Total Number of Lifts | 5 | 7 | 7 | 6 | 6 |
| Number of Trails | 37 | 52 | 55 | 44 | 44 |
| Formal Ski Terrain (acres) | 212.3 | 282.3 | 297.6 | 241.1 | 259.7 |

[a] CCC is also commonly referred to as "Skiers-At-One-Time".
[b] The current Special Use Permit indicates that the permit area is 710 acres. However, GIS analysis indicates that the actual SUP area is approximately 805 acres. As a result of the NEPA process, of which this FEIS is a part, the acreage has been re-calculated based on the best available data.

## 2.3.1 Assumptions and Actions Common to All Action Alternatives

### *2.3.1.1 Forest Plan Amendment*

All Action Alternatives would include an amendment to the 1990 GPNF Land and Resource Management Plan. The riparian area standards and guidelines for recreation currently specify that:

> "Neither newly developed recreation sites nor expansions to existing sites would be located on the riparian influence area of riparian areas A, B, or C. Developed and dispersed recreation sites should be located at least 100 feet from the edges of lakes, streams, ponds, wet meadows, marshes and springs. (GPNF Plan 1990, page iv-70)."

The rationale for the existing standards and guidelines is provided in the analysis file. This amendment would modify the standards and guidelines to allow for downhill ski trails and other ski area infrastructure to cross riparian influence areas within the existing SUP area and the proposed expansion area. (Riparian influence areas include those areas within 25 feet on either side of a stream or waterway, and are included within Riparian Reserves). The amended Standard and Guideline would read:

> "Neither newly developed recreation sites nor expansions to existing sites will be located on the riparian influence area of Riparian Areas A, B or C, with the exception of specified ski area developments within the existing and expanded permitted area for the White Pass Ski Area. Within this permitted area, ski trails, chairlifts, buildings, utilities, and associated infrastructure may be allowed where avoidance of these features proves

> infeasible. With the exception of the described ski area facilities, developed and dispersed recreation sites should be located at least 100 feet from the edges of lakes, streams, ponds…"

Riparian area B under the GPNF Plan typically has a riparian influence area that is 25-feet wide. No ski lift terminals or towers would be located within the riparian influence areas under any alternative. Final location of the two bottom lift terminals may be located within riparian areas, but would not encroach into any riparian influence areas (these lift terminals would each occupy approximately 2,400 square feet – an area 40 feet x 60 feet, and encompassing between 1/8 and 1/4 acres). The proposed day lodge would also not encroach into any riparian influence areas.

Ski trails, including some that would require tree removal, would cross or be located in riparian and/or riparian influence areas. Where vegetation, (primarily trees), is required to be removed to facilitate the alignment and ski-ability of ski trails where they do cross riparian influence areas, no trees less than 3 feet in height would be cut. Under the Proposed Action, for example, approximately 20 acres of vegetation would be removed within the 70 acres of proposed ski trails. Of these 20 acres, about 68.5 percent (13.5 acres) would be within Riparian Reserves, a portion of which would fall within the riparian influence area (refer to Section 3.3 – Watershed Resources). The proposed amendment would be fully consistent with the NWFP standards and guidelines for Riparian Reserves (refer to Chapter 3, Section 3.7 – Aquatic Conservation Strategy).

#### *2.3.1.2 Zig Zag Nordic Trail Authorization*

The DEIS described that under all Action Alternatives, the continued operation of the existing Zig Zag Nordic Trail would be authorized under the SUP. Under the FEIS, this trail authorization component has been removed from all alternatives, and will not be part of the NEPA decision for the Proposed White Pass Expansion.

#### *2.3.1.3 Snowshoe Trail Authorization*

The DEIS described that under all Action Alternatives, the continued operation of the existing snowshoe trail network would be authorized under the SUP. Under the FEIS, this trail authorization component has been removed from all alternatives, and will not be part of the NEPA decision.

#### *2.3.1.4 Capacity*

The single most important parameter considered when planning guest support facilities at mountain resorts is the mountain's CCC (Comfortable Carrying Capacity).[18] The CCC of a mountain resort is the number of skiers an entire resort can comfortably accommodate at any given time and still guarantee a

[18] CCC is also commonly referred to as "Skiers-At-One-Time" (SAOT). Refer to Appendix B – Mountain Plan Specifications for additional information regarding Comfortable Carrying Capacity (CCC).

pleasant recreation experience. As described in Chapter 1, a resort's CCC does not reflect the number of skiers on the mountain at one time. Rather, 70 to 85 percent of a mountain's total CCC would be active skiers, including those on the trails, riding lifts, and waiting in lift lines. The remaining 15 to 30 percent would be using guest service facilities or milling in areas near these facilities.

The CCC is a calculation based upon uphill lift capacity, trail density and capacity, lift type, hours of operation, and other planning parameters. The CCC does not consider previous skier visits, nor does it predict future visitation of the resort. The CCC is a planning parameter by which other skier services can be designed. For example, the capacity of parking spaces, restaurant seats, utilities and infrastructure must be designed to accommodate the CCC for the resort to operate efficiently (e.g., no long lift lines, sufficient parking).

#### *2.3.1.5 Skier Ability*

As used in this Final EIS, skier ability levels are defined based on the slope gradient, as shown in Table 2.3.1-1.

**Table 2.3.1-1:**
**Slope Gradient by Ability Level**

| Skier Ability Level[a] | Acceptable Slope Gradient (percent slope) |
|---|---|
| Beginner | 8 to 12 |
| Novice | to 25 (short pitches of 30) |
| Low Intermediate | to 30 (short pitches of 35) |
| Intermediate | to 40 (short pitches of 45) |
| Advanced Intermediate | to 50 (short pitches of 55) |
| Expert | over 50 (maximum of 80) |

[a] The ability level designation of any given ski trail also includes consideration of the access to, or egress from the trail.
Source: SE Group

#### *2.3.1.6 Construction*

The majority of direct effects to resources would be related to treatments (clearing) for the development of the lift and associated ski trails. Estimates on the amount of clearing that would occur for specific activities proposed in the Action Alternatives are shown in Table 2.3.1-2 (for analysis purposes, clearing widths should be considered "worst-case"; actual clearing would not exceed the stated limit and may be less). With the exception of Alternative 6, all transport of equipment or materials would be limited to helicopter transport, transport over the snow, or use of low-impact equipment over the ground, with a focus on minimizing the number of entries needed (refer to Table 2.4-1). With the exception of one

Action Alternative, no road construction would be required (refer to Alternative 6 - Section 2.3.5.5 for a description of the exception).[19]

**Table 2.3.1-2:**
**White Pass Expansion FEIS**
**Clearing and Other Assumptions**

| Ski Area Component | Clearing Requirement[a] |
|---|---|
| **Ski Lift** | |
| Alignment Clearing | 60-foot corridor |
| Terminal Ground Disturbance | 0.50 acre |
| Tower Ground Disturbance | 100 square feet |
| **Service Roads (Alt. 6 only)**[b] | |
| Tread Width | 16 feet |
| Ground Disturbance Width[c] | 34 feet |
| **Bridge (Alt. 9 only)** | |
| Bridge Tread Width | 40 feet |
| **Utility Lines**[d] | |
| Power | 15-foot corridor |
| Communications | 15-foot corridor |
| Water | 15-foot corridor |
| **Other** | |
| Buildings[e] | 50-foot corridor |
| Parking Lots[e] | 30-foot corridor |
| Corduroy Crossing Width | Approximately 8 feet |

[a] "Worst case" estimate of clearing, grading, machinery operation, storage of spoils, etc
[b] For further details refer to Section 2.3.5.5.
[c] "Worst case" estimate of clearing, grading, machinery operation, storage of spoils, etc.
[d] Underground utilities would be grouped and/or placed in ski trails to the maximum extent practicable.
[e] Represents a construction corridor surrounding the development footprint.

A detailed breakdown of the location and extent of each treatment technique is provided in the description of alternatives (refer to Sections 2.3.2-Alternative 1 - No Action Alternative through 2.3.6-Alternative 9) and in Table 2.6-2 - Summary Comparison of Environmental Consequences. Treatment techniques include:

Full Clearing with No Grading: After felling, all trees would be maintained on the ground within the construction limits, along ski trail edges, in Riparian Reserves, or in streams for LWD recruitment and erosion control. Trees would be cut flush to the ground and stumps would not be removed. The surface

[19] Under FSM 7705, a road is defined as "A motor vehicle travelway over 50 inches wide, unless designated and managed as a trail."

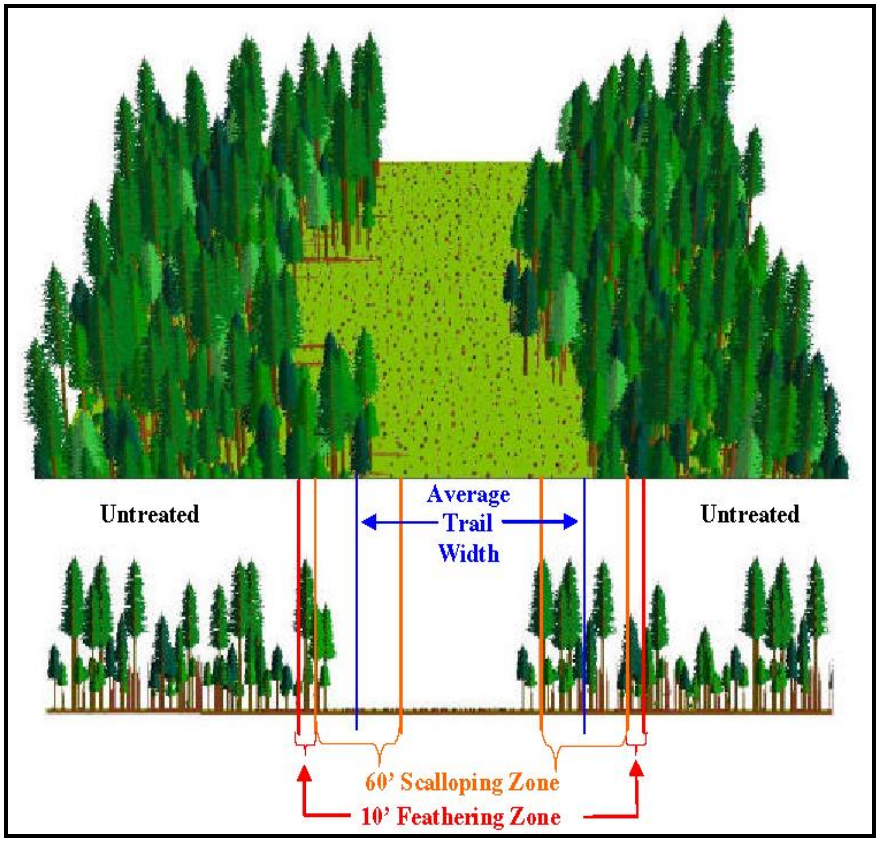
would not be graded and the natural ground cover would be maintained (refer to Illustration 2.3 FEIS1). Tree removal would be accomplished by hand, or with processors such as feller/bunchers on snow, where possible, or helicopters. All woody material would be retained onsite, along trail edges, in Riparian Reserves, or in streams for Large Woody Debris (LWD) recruitment, Large Woody Material for wildlife habitat, and erosion control.

Full Clearing with Grading: All trees would be removed within the construction limits, stumps would be removed, and the surface would be graded and re-vegetated, where appropriate (refer to Illustration 2.3 FEIS2). Grading would occur at all locations where structures are proposed (e.g., lift towers, buildings) and along key trails where a smooth surface is necessary. Grading may include the use of explosives for the removal of bedrock or large boulders, or the use of heavy equipment (e.g., excavators, bulldozers, etc.) for earthmoving. The removal of trees would be accomplished by hand, or with processors such as feller/bunchers over the snow, where possible, or helicopters. All woody material would be retained onsite (along trail edges, in Riparian Reserves, or in streams) to retain LWD recruitment potential to the extent possible. Large Woody Material would be left for wildlife habitat, and erosion control.

Tree Island Removal: Islands of trees would be removed within the ski trail/ lift corridor to connect existing canopy openings. Trees would be flush cut to the ground and stumps would not be removed. The surface would not be graded and the natural ground cover would be maintained. Where lop and scatter is not possible, downed wood would be retained onsite, along trail edges, in Riparian Reserves, or in streams for LWD recruitment, Large Woody Material would be left for wildlife habitat and erosion control (refer to Illustration 2.3 FEIS3 and FEIS4).

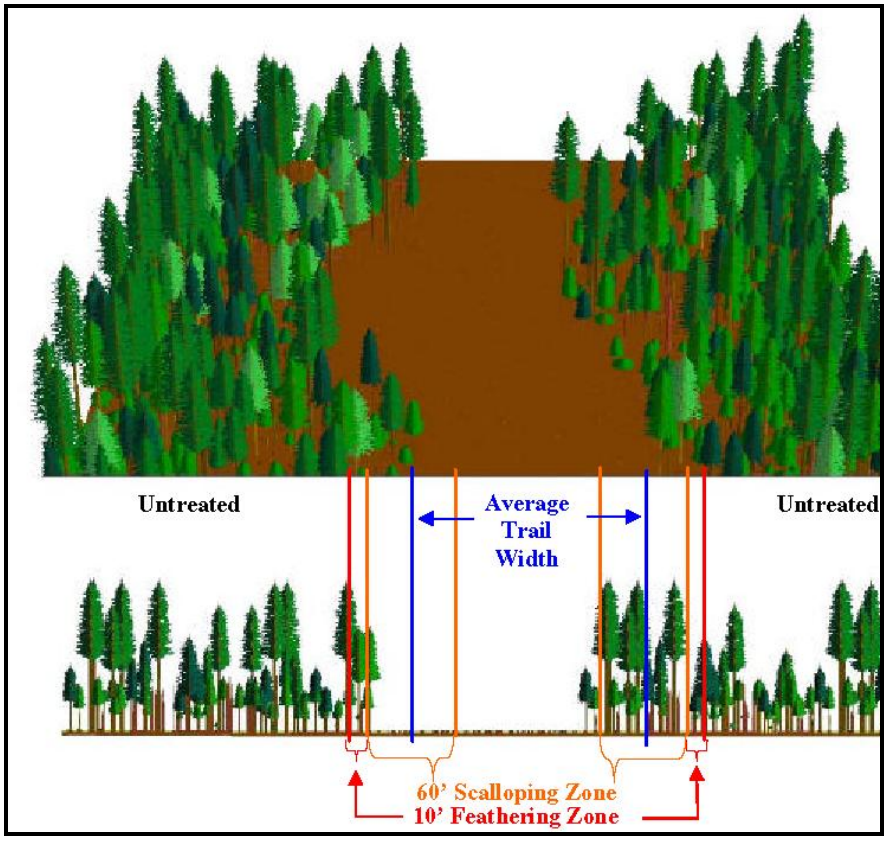
Tree Island Retention: Existing tree islands or shrub/herbaceous vegetation would be retained within the ski trail/lift corridor in their current condition.

**Illustration 2.3 FEIS1:**
**Typical Full Clearing Treatment With No Grading[a]**



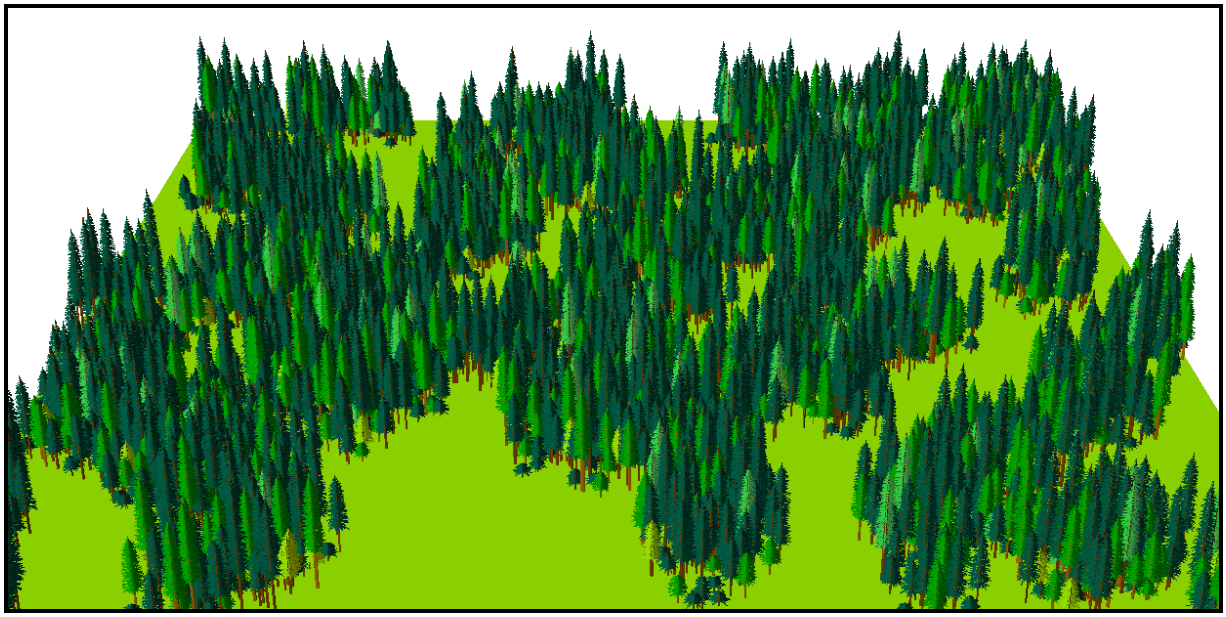

[a] Not to scale – for illustrative purposes only.

**Illustration 2.3 FEIS2:**
**Typical Full Clearing Treatment With Grading[a]**



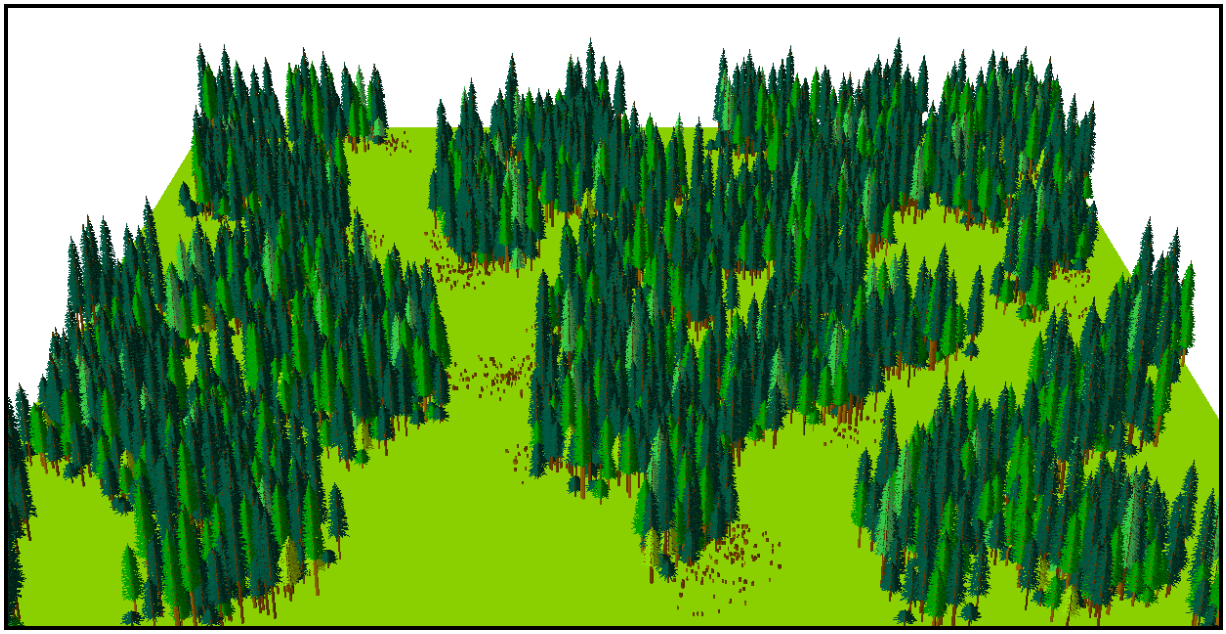

[a] Not to scale – for illustrative purposes only.

**Illustration 2.3 FEIS3:**
**Typical Parkland Prior to Tree Island Removal[a]**



[a] Not to scale – for illustrative purposes only.

**Illustration 2.3 FEIS4:**
**Typical Parkland With Tree Island Removal Treatment[a]**



[a] Not to scale – for illustrative purposes only.

In addition to the clearing prescription outlined above, ski trail clearing would include edge treatments that are intended to reduce the visual effects of trail clearing and to enhance the skiing opportunities along the trail edge. These prescriptions include:

Forest Edge Scalloping: Flagging a separate limit of clearing boundary outside of the trail edge so the boundary is non-linear, in order to reduce visual impacts associated with straight trail edges. The limit of clearing would resemble an irregular sine wave that is outside of, but adjacent to, the flagged trail edge. The limit of clearing would not exceed a maximum distance of 30 feet from the original flagged trail edge.

Forest Edge Feathering: Selectively removing trees along the limit of clearing, where appropriate, so that a hard line in the new trail-to-forest transition is not evident. The area to be thinned for forest edge feathering would be approximately 10 feet wide. Large trees (i.e., greater than 8 inches dbh) would be selectively removed starting at the limit of clearing, so that the tree density would get progressively lower toward the interior of the trail and within the 10-foot feathering area.

Ongoing clearing to maintain openings would occur over the life of the Special Use Permit (>10 years).

Standard construction techniques would be used for erecting lift terminal structures. Access to terminal locations would occur over snow when possible and impacts would be minimized by making one entry and exit. Historically, snow remains in the expansion area throughout most of June. Terminals would be constructed onsite and the footings would be excavated by machine. Equipment access to the terminal and tower locations would not require construction or reconstruction of a road.

Lift tower footings would be excavated by hand or by small, low impact excavators. Concrete for footings and lift towers would be flown in by helicopter in situations where it could not be transported on the ground. Standard and site-specific Best Management Practices (BMPs) and Mitigation Measures would be implemented (refer to Section 2.4 – Mitigation).

Facilities would be constructed with the same equipment access methods described for lift terminals and towers. Trees would be cleared for ski trails by hand (i.e., chainsaw).

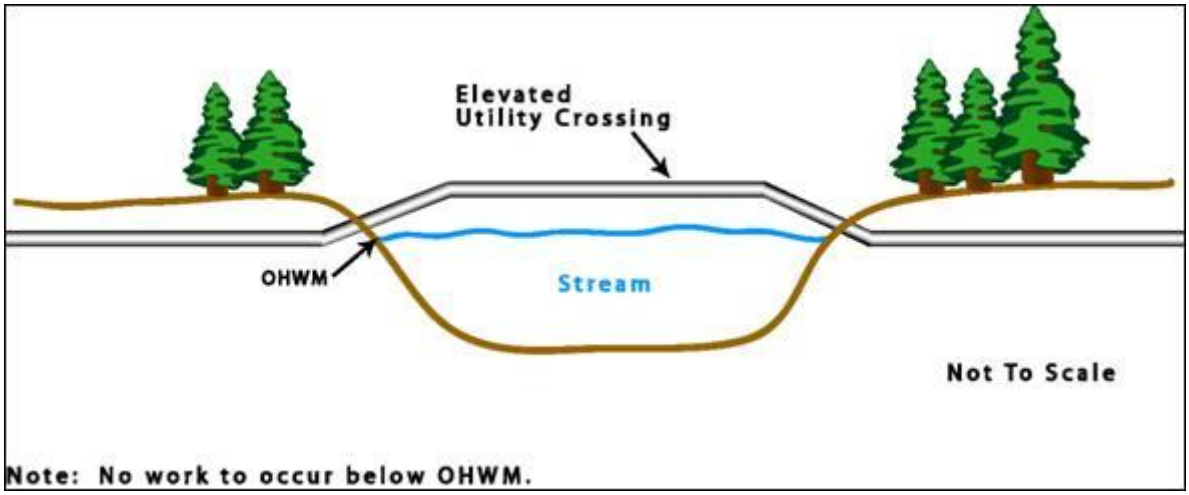
#### *2.3.1.7 Culvert Placement*

Under the Action Alternatives, culverts are proposed for non-road project elements, including the construction of lift terminals. For development in Hogback and Pigtail Basins and with the exception of the road segment in Alternative 6, culvert placement is intended as a temporary stream protection measure in locations where construction may encroach on the riparian influence area. No lift towers or terminals are proposed directly in streams. Therefore, after completion of construction, any culverts associated with lift terminal construction would be removed.

### *2.3.1.8 Utility Crossings*

Utilities would be trenched in existing and/or proposed ski trails and roads. A trackhoe would be used to excavate the trench and backfill the trench following utility installation. Trenching would not be allowed in streams or wetlands. Low elevation aerial crossings would be used to protect streams and wetlands (refer to Illustration 2.3 FEIS5). The trench would daylight prior to the Ordinary High Water Mark and no ground disturbance would occur below Ordinary High Water Mark.

**Illustration 2.3 FEIS5:**
**Typical Low Elevation Aerial Utility Crossing**




## 2.3.2 Alternative 1 (No Action Alternative)

As required by NEPA, a No Action Alternative is included in this FEIS as a benchmark against which the Action Alternatives can be compared (refer to Figure 2-1). The No Action Alternative also serves as a means of analyzing the effects of "no future development" within the Project Area. Under Alternative 1, there would be no additional development of new facilities.

White Pass would continue to operate five lifts on approximately 212.3 acres of formal terrain. White Pass' CCC would remain at 2,670 skiers.

Alternative 1 would not provide any additional recreational activities within the present permit area, nor does it affect current conditions in the western adjacent Pigtail and Hogback Basins (refer to Figure 2-1). Construction or modification in the existing SUP area would consist of normal maintenance items and upgrading when obsolete, worn or inadequate facilities are replaced. System upgrading would conform to the currently-approved ski area's Master Development Plan and all state and county specifications.

### *2.3.2.1 Lifts*

Under the No Action Alternative, White Pass would continue to operate four chairlifts and one surface (platter pull) lift. Any future lift replacements would utilize an alignment and configuration similar to the original lift, and require project-specific approval from the USFS. Table 2.3.2-1 summarizes the specifications of the lift network at White Pass under Alternative 1.

**Table 2.3.2-1:**
**White Pass Lift Specifications Under Alternative 1**

| Lift Name | Lift Type | Vertical Rise (feet) | Horizontal Rise (feet) | Slope Length (feet) | Hourly Capacity (pph) |
|---|---|---|---|---|---|
| 1. Great White Express | Detachable Quad | 1,521 | 4,814 | 5,125 | 2,100 |
| 2. Pigtail | Fixed-Grip Double | 1,493 | 4,628 | 4,987 | 900 |
| 3. Lower Cascade | Fixed-Grip Triple | 510 | 2,166 | 2,232 | 1,800 |
| 4. Paradise | Fixed-Grip Double | 712 | 2,675 | 2,804 | 1,200 |
| 5. Platter | Surface Lift | 66 | 512 | 517 | 400 |

Refer to Appendix B – Mountain Plan Specifications for additional information.
Source: White Pass

### *2.3.2.2 Ski Trails*

The existing terrain would be maintained under Alternative 1, including 37 named trails on approximately 212.3 acres, accommodating a CCC of 2,670 skiers. The existing trail network accommodates the range of skier abilities from novice to expert, comprised of approximately 0.5 acre of beginner terrain, 1.4 acres of novice terrain, 67.7 acres of low-intermediate terrain, 80.9 acres of intermediate terrain, 10.0 acres of advanced-intermediate terrain and 51.7 acres of expert terrain. Table 2.3.2-2 summarizes the White Pass trail network under Alternative 1.

**Table 2.3.2-2:**
**White Pass Terrain Specifications Under Alternative 1**

| Number | Trail / Area Name | Top Elev. (ft.) | Bot. Elev. (ft) | Slope Length (ft) | Avg. Width (ft) | Slope Area (ac) | Avg. Grade (%) | Max. Grade (%) | Ability Level |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Beginner no-name Trail | 4,547 | 4,478 | 589 | 104 | 1.4 | 12% | 17% | Novice |
| 2 | Cascade | 5,967 | 4,971 | 5,131 | 170 | 20.1 | 20% | 43% | Intermediate |
| 3 | Cascade Cliff | 5,266 | 5,050 | 896 | 206 | 4.2 | 25% | 64% | Expert |
| 4 | Chair Trail | 5,688 | 5,466 | 817 | 147 | 2.8 | 29% | 57% | Expert |
| 5 | Elevator Shaft | 5,206 | 5,087 | 380 | 150 | 1.3 | 34% | 48% | Expert |
| 6 | Execution | 5,415 | 5,027 | 723 | 162 | 2.7 | 65% | 99% | Expert |
| 7 | Far Side | 5,023 | 4,517 | 2,631 | 270 | 16.3 | 20% | 35% | Low Intermediate |
| 8 | Grouse | 5,851 | 5,339 | 3,113 | 80 | 5.7 | 17% | 33% | Low Intermediate |
| 9 | Holicade | 5,704 | 5,544 | 862 | 68 | 1.3 | 19% | 35% | Intermediate |
| 10 | Holiday | 5,975 | 4,816 | 8,713 | 106 | 21.3 | 14% | 39% | Intermediate |
| 11 | Holiday Cliff | 5,487 | 5,132 | 1,372 | 100 | 3.2 | 27% | 65% | Expert |
| 12 | Jaw Breaker | 5,518 | 5,388 | 1,444 | 83 | 2.8 | 9% | 20% | Intermediate |
| 13 | Lower Holiday | 4,816 | 4,509 | 2,213 | 208 | 10.5 | 14% | 25% | Low Intermediate |
| 14 | Lower Hour Glass | 5,139 | 4,918 | 802 | 131 | 2.4 | 29% | 45% | Intermediate |
| 15 | Lower Paradise | 4,766 | 4,475 | 3,548 | 60 | 4.9 | 8% | 23% | Expert |
| 16 | Lower Roller | 4,972 | 4,504 | 1,445 | 303 | 10.0 | 34% | 53% | Advanced Intermediate |
| 17 | Mach V | 5,943 | 5,635 | 1,102 | 109 | 2.8 | 30% | 66% | Expert |
| 18 | Main Street | 5,286 | 4,771 | 3,204 | 84 | 6.1 | 16% | 56% | Expert |
| 19 | Midway | 5,725 | 5,318 | 1,448 | 79 | 2.6 | 30% | 53% | Expert |
| 20 | Near Side | 5,038 | 4,475 | 2,549 | 309 | 18.1 | 23% | 35% | Low Intermediate |
| 21 | Noname Trail | 5,170 | 4,854 | 1,241 | 225 | 6.4 | 26% | 38% | Intermediate |
| 22 | North Peak | 5,905 | 5,632 | 1,264 | 78 | 2.3 | 23% | 73% | Expert |
| 23 | Outhouse | 5,979 | 5,812 | 353 | 195 | 1.6 | 55% | 76% | Expert |
| 24 | Paradise Cliff | 5,163 | 4,766 | 2,105 | 77 | 3.7 | 20% | 55% | Expert |
| 25 | Poma Bowl | 5,063 | 4,486 | 2,005 | 218 | 10.0 | 30% | 45% | Intermediate |
| 26 | Poma Face | 4,966 | 4,483 | 1,698 | 261 | 10.2 | 30% | 41% | Intermediate |
| 27 | Ptarmigan | 5,683 | 5,359 | 1,541 | 147 | 5.2 | 22% | 29% | Low Intermediate |
| 28 | Quail | 5,748 | 5,163 | 3,194 | 87 | 6.4 | 19% | 33% | Low Intermediate |
| 29 | Raven's Haven | 5,921 | 5,756 | 354 | 147 | 1.2 | 54% | 59% | Expert |
| 30 | Roller Cattrac | 5,975 | 5,670 | 1,589 | 83 | 3.0 | 20% | 41% | Expert |
| 31 | Roller Cliff | 5,318 | 4,972 | 748 | 106 | 1.8 | 53% | 69% | Expert |

**Table 2.3.2-2:**
**White Pass Terrain Specifications Under Alternative 1**

| Number | Trail / Area Name | Top Elev. (ft.) | Bot. Elev. (ft) | Slope Length (ft) | Avg. Width (ft) | Slope Area (ac) | Avg. Grade (%) | Max. Grade (%) | Ability Level |
|---|---|---|---|---|---|---|---|---|---|
| 32 | Tucker | 5,829 | 5,487 | 2,282 | 84 | 4.4 | 15% | 36% | Intermediate |
| 33 | Upper Hour Glass | 5,635 | 5,210 | 1,104 | 141 | 3.6 | 43% | 97% | Expert |
| 34 | Upper Paradise | 5,736 | 5,286 | 2,240 | 117 | 6.0 | 21% | 33% | Low Intermediate |
| 35 | Upper Roller | 5,670 | 5,364 | 1,047 | 114 | 2.7 | 31% | 43% | Expert |
| 36 | Water Fall | 4,833 | 4,681 | 384 | 140 | 1.2 | 44% | 55% | Expert |
| 37 | What | 5,648 | 5,398 | 1,297 | 68 | 2.0 | 20% | 39% | Intermediate |

Note: Trail 15 (Paradise) is considered an Expert trail because it is accessed via Trail 24 (Paradise Cliff), which is an expert trail.
Source: White Pass

### *2.3.2.3 Nordic and Snowshoe Trails*

Under Alternative 1, the Nordic trail system at White Pass would continue to cover approximately 13.64 kilometers over five distinct loop and connector trails (refer to Figure 1-3). The Nordic ski area is located north of US 12. The trail network varies in elevation from 4,300 feet to a high of 4,800 feet. Trails are maintained and groomed to provide both traditional kick and glide skiing as well as skate surfaces. The majority of the trails are intermediate, with some novice and advanced trails present.

### *2.3.2.4 Facilities*

#### *Buildings*

Currently sixteen major buildings are present within the White Pass Ski Area. These include the existing daylodge at the base of the mountain, ticket booth, employee residences, maintenance shops, and a general store. Additionally, several minor buildings and other buildings not operated by White Pass are present. For example, the Olympic and Yakima Valley Ski Clubs operate under their own SUPs.

#### *Parking Lots*

Currently, there is parking capacity for approximately 1,100 cars and nine busses on six designated lots and along US 12. Parking is divided between parking on the highway (550 cars) and off highway parking (550 cars) (McCarthy 2005).

Under Alternative 1, parking would remain as under the current condition.

### *2.3.2.5 Utilities*

#### *Power*

Under Alternative 1 electricity would continue to be supplied to White Pass by Benton Rural Electric Association. Current power usage at White Pass is 2,970 kW. A backup 125 kW diesel generator support for emergency electrical power for lift evacuation is provided as required by law. Upgrades to the existing White Pass power system have been discussed since preparation of the previous EIS in 1998. Currently no improvements have been made.

#### *Communications*

Telephone services would continue to be provided by Century Telephone. Relay stations are located within the White Pass SUP area, but do not interfere with daily operations.

#### *Water*

The water supply for White Pass comes from an artesian spring located within the White Pass SUP area at an elevation of 5,200 feet. Water is captured underground and is piped to the treatment facility, and ultimately to the ski area facilities, as well as to the nearby Washington State Department of Transportation US 12 maintenance facility.

#### *Wastewater*

The current wastewater management system at White Pass meets or exceeds all site and health requirements. The current waste management at the White Pass Ski Area consists of two treatment systems, referred to here as the north and south systems. The north treatment system, located on the north side of US 12, was rebuilt in 1991-1992 and includes a 'treatment train' consisting of three structures: septic tank, RGF and a drainfield. The total volume of the septic tanks is 24,570 gallons. The RGF consists of a 12,000 gallon re-circulating tank and a 4,000-square foot gravel filter. The drainfield covers 12,877 square feet and there is one emergency gravity-fed reserve drainfield covering 1,567 linear feet. Current peak use of this system is approximately 9,000 GPD, or 37 percent of its maximum capacity.

The south treatment system consists of a 26,690-gallon septic tank with an 18,800-square foot drainfield. The system's overall design capacity is 12,000 GPD, and the current peak use of the treatment system is approximately 9,200 GPD (McCarthy 2005). The septic tank is designed at a capacity of 16,500 GPD. However, the overall design capacity of 12,000 GPD limits the flow rate of the entire system. Waste management capacity at present is adequate for the projected base area use.

Under Alternative 1, the wastewater facilities would remain unchanged.

#### *2.3.2.6 SUP Boundary*

The current SUP boundary encompasses approximately 805 acres.[20] Under Alternative 1, no changes to the SUP boundary would take place.

#### *2.3.2.7 Pacific Crest National Scenic Trail*

Under Alternative 1, no alterations to the location of the PCNST would occur.

#### *2.3.2.8 Pedestrian Management Plan*

Under Alternative 1, development of a Pedestrian Management Plan is not required.

### 2.3.3 Alternative 2: (Proposed Action)

Under Alternative 2, White Pass would expand into Hogback Basin with the development of two chairlifts, associated trails and a mid-mountain lodge (refer to Figure 2-2). The CCC of White Pass would increase from 2,670 to 4,250, and the terrain at White Pass would increase from 37 trails on 212.3 acres of formal terrain to 52 trails on 282.3 acres.

Alternative 2 would require an amendment of the GPNF Plan to allow for the crossing of riparian influence areas by ski trails (refer to Section 2.3.1.1).

#### *2.3.3.1 Lifts*

Under Alternative 2, White Pass would operate six chairlifts and one platter lift. At full build out, all five existing lifts at White Pass would remain in their current state. Two new chairlifts, the C-6 (*Basin*) and C-7 (*Hogback Express*) would be constructed. Table 2.3.3-1 summarizes the specifications of the lift network at White Pass under Alternative 2.

[20] The current Special Use Permit indicates that the permit area is 710 acres. However, GIS analysis indicates that the actual SUP area is approximately 805 acres. As a result of the NEPA process, of which this FEIS is a part, the acreage has been re-calculated based on the best available data.

**Table 2.3.3-1:**
**White Pass Lift Specifications under Alternative 2**

| Lift Name | Lift Type | Top Elev. (ft.) | Bot. Elev. (ft.) | Vert. Rise (ft.) | Horiz Rise (ft.) | Slope Length (ft.) | Avg. Grade (%) | Hourly Cap. (pph) |
|---|---|---|---|---|---|---|---|---|
| 1. Great White Express | Detachable Quad | 5,999 | 4,477 | 1,521 | 4,814 | 5,125 | 32% | 2,100 |
| 2. Pigtail | Fixed-Grip Double | 5,978 | 4,485 | 1,493 | 4,628 | 4,987 | 32% | 900 |
| 3. Lower Cascade | Fixed-Grip Triple | 5,024 | 4,514 | 510 | 2,166 | 2,232 | 24% | 1,800 |
| 4. Paradise | Fixed-Grip Double | 5,961 | 5,249 | 712 | 2,675 | 2,804 | 27% | 1,200 |
| 5. Platter | Surface Lift | 4,545 | 4,479 | 66 | 512 | 517 | 13% | 400 |
| 6. Basin | Fixed-Grip Quad | 6,169 | 5,552 | 617 | 3,497 | 3,560 | 18% | 2,400 |
| 7. Hogback Express | Detachable Quad | 6,473 | 5,605 | 867 | 4,041 | 4,162 | 21% | 2,400 |

Refer to Appendix B – Mountain Plan Specifications for additional information.
Source: SE Group

Under Alternative 2, the C-6 (*Basin*) would access advanced intermediate to low intermediate level terrain. The bottom terminal would be located approximately 1,500 feet upslope (south) from the existing Quail ski trail at approximately 5,552 feet elevation. The upper terminal would be located adjacent to western boundary of the proposed SUP area, at approximately 6,169 feet elevation, and approximately 240 feet, at its closest point, from the Wilderness/SUP boundary. The *Basin* chairlift is proposed as a bottom drive, fixed-grip quad chairlift. The proposed lift would accommodate 2,400 skiers per hour.

Under Alternative 2, the *Hogback Express* chairlift would access advanced intermediate to low intermediate level terrain. The bottom terminal would be located at approximately 5,605 feet elevation, southwest of the existing SUP boundary. The upper terminal would be located at approximately 6,473 feet elevation, approximately 430 feet from the Wilderness/SUP boundary at its closest point. The *Hogback Express* chairlift is proposed as a top drive, detachable quad. The proposed lift would accommodate 2,400 skiers per hour.

Under Alternative 2, full clearing with grading would be required at the proposed terminals of *Basin* and *Hogback Express*. Full clearing with no grading would be required for lift corridor construction.

### *2.3.3.2 Ski Trails*

Alternative 2 includes the addition of 15 new trails associated with the *Basin* and the *Hogback Express* pods. Under Alternative 2, the trail network would increase by approximately 70 acres, from the existing

37 named trails on approximately 212 acres, to 52 trails on approximately 282 acres (refer to Table 2.3.3-2). The trail network would accommodate the range of skier abilities from novice to expert, comprised of approximately 0.5 acre of beginner terrain, 1.4 acres of novice terrain, 95.1 acres of low-intermediate terrain, 80.9 acres of intermediate terrain, 52.6 acres of advanced-intermediate terrain, and 51.7 acres of expert terrain.

**Table 2.3.3-2:**
**White Pass Terrain Specifications Under Alternative 2**

| Number | Trail / Area Name | Top Elev. (ft.) | Bottom Elev. (ft) | Slope Length (ft) | Avg. Width (ft) | Slope Area (ac) | Avg. Grade (%) | Max. Grade (%) | Ability Level |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Beginner no-name Trail | 4,547 | 4,478 | 589 | 104 | 1.4 | 12% | 17% | Novice |
| 2 | Cascade | 5,967 | 4,971 | 5,131 | 170 | 20.1 | 20% | 43% | Intermediate |
| 3 | Cascade Cliff | 5,266 | 5,050 | 896 | 206 | 4.2 | 25% | 64% | Expert |
| 4 | Chair Trail | 5,688 | 5,466 | 817 | 147 | 2.8 | 29% | 57% | Expert |
| 5 | Elevator Shaft | 5,206 | 5,087 | 380 | 150 | 1.3 | 34% | 48% | Expert |
| 6 | Execution | 5,415 | 5,027 | 723 | 162 | 2.7 | 65% | 99% | Expert |
| 7 | Far Side | 5,023 | 4,517 | 2,631 | 270 | 16.3 | 20% | 35% | Low Intermediate |
| 8 | Grouse | 5,851 | 5,339 | 3,113 | 80 | 5.7 | 17% | 33% | Low Intermediate |
| 9 | Holicade | 5,704 | 5,544 | 862 | 68 | 1.3 | 19% | 35% | Intermediate |
| 10 | Holiday | 5,975 | 4,816 | 8,713 | 106 | 21.3 | 14% | 39% | Intermediate |
| 11 | Holiday Cliff | 5,487 | 5,132 | 1,372 | 100 | 3.2 | 27% | 65% | Expert |
| 12 | Jaw Breaker | 5,518 | 5,388 | 1,444 | 83 | 2.8 | 9% | 20% | Intermediate |
| 13 | Lower Holiday | 4,816 | 4,509 | 2,213 | 208 | 10.5 | 14% | 25% | Low Intermediate |
| 14 | Lower Hour Glass | 5,139 | 4,918 | 802 | 13. | 2.4 | 29% | 45% | Intermediate |
| 15 | Lower Paradise | 4,766 | 4,475 | 3,548 | 60 | 4.9 | 8% | 23% | Expert |
| 16 | Lower Roller | 4,972 | 4,504 | 1,445 | 303 | 10.0 | 34% | 53% | Advanced Intermediate |
| 17 | Mach V | 5,943 | 5,635 | 1,102 | 109 | 2.8 | 30% | 66% | Expert |
| 18 | Main Street | 5,286 | 4,771 | 3,204 | 84 | 6.1 | 16% | 56% | Expert |
| 19 | Midway | 5,725 | 5,318 | 1,448 | 79 | 2.6 | 30% | 53% | Expert |
| 20 | Near Side | 5,038 | 4,475 | 2,549 | 309 | 18.1 | 23% | 35% | Low Intermediate |
| 21 | Noname Trail | 5,170 | 4,854 | 1,241 | 225 | 6.4 | 26% | 38% | Intermediate |
| 22 | North Peak | 5,905 | 5,632 | 1,264 | 78 | 2.3 | 23% | 73% | Expert |
| 23 | Outhouse | 5,979 | 5,812 | 353 | 195 | 1.6 | 55% | 76% | Expert |
| 24 | Paradise Cliff | 5,163 | 4,766 | 2,105 | 77 | 3.7 | 20% | 55% | Expert |
| 25 | Poma Bowl | 5,063 | 4,486 | 2,005 | 218 | 10.0 | 30% | 45% | Intermediate |
| 26 | Poma Face | 4,966 | 4,483 | 1,698 | 261 | 10.2 | 30% | 41% | Intermediate |
| 27 | Ptarmigan | 5,683 | 5,359 | 1,541 | 147 | 5.2 | 22% | 29% | Low Intermediate |

**Table 2.3.3-2:**
**White Pass Terrain Specifications Under Alternative 2**

| Number | Trail / Area Name | Top Elev. (ft.) | Bottom Elev. (ft) | Slope Length (ft) | Avg. Width (ft) | Slope Area (ac) | Avg. Grade (%) | Max. Grade (%) | Ability Level |
|---|---|---|---|---|---|---|---|---|---|
| 28 | Quail | 5,748 | 5,163 | 3,194 | 87 | 6.4 | 19% | 33% | Low Intermediate |
| 29 | Raven's Haven | 5,921 | 5,756 | 354 | 147 | 1.2 | 54% | 59% | Expert |
| 30 | Roller Cattrac | 5,975 | 5,670 | 1,589 | 83 | 3.0 | 20% | 41% | Expert |
| 31 | Roller Cliff | 5,318 | 4,972 | 748 | 106 | 1.8 | 53% | 69% | Expert |
| 32 | Tucker | 5,829 | 5,487 | 2,282 | 84 | 4.4 | 15% | 36% | Intermediate |
| 33 | Upper Hour Glass | 5,635 | 5,210 | 1,104 | 141 | 3.6 | 43% | 97% | Expert |
| 34 | Upper Paradise | 5,736 | 5,286 | 2,240 | 117 | 6.0 | 21% | 33% | Low Intermediate |
| 35 | Upper Roller | 5,670 | 5,364 | 1,047 | 114 | 2.7 | 31% | 43% | Expert |
| 36 | Water Fall | 4,833 | 4,681 | 384 | 140 | 1.2 | 44% | 55% | Expert |
| 37 | What | 5,648 | 5,398 | 1,297 | 68 | 2.0 | 20% | 39% | Intermediate |
| 38 | Alt 2-1 | 5,547 | 5,442 | 1,747 | 34 | 1.4 | 6% | 17% | Low Intermediate |
| 39 | Alt 2-2 | 5,833 | 5,554 | 3,309 | 39 | 2.9 | 9% | 19% | Low Intermediate |
| 40 | Alt 2-3 | 5,820 | 5,558 | 1,518 | 90 | 3.1 | 18% | 25% | Low Intermediate |
| 41 | Alt 2-4 | 6,190 | 5,554 | 3,668 | 105 | 8.8 | 18% | 28% | Low Intermediate |
| 42 | Alt 2-5 | 6,069 | 5,653 | 2,493 | 82 | 4.7 | 17% | 33% | Low Intermediate |
| 43 | Alt 2-6 | 6,150 | 5,776 | 2,249 | 103 | 5.3 | 17% | 30% | Low Intermediate |
| 44 | Alt 2-7 | 6,153 | 5,974 | 1,146 | 39 | 1.0 | 16% | 27% | Low Intermediate |
| 45 | Alt 2-8 | 6,120 | 5,889 | 2,315 | 67 | 3.6 | 10% | 28% | Advanced Intermediate |
| 46 | Alt 2-9 | 5,960 | 5,618 | 2,008 | 76 | 3.5 | 17% | 31% | Advanced Intermediate |
| 47 | Alt 2-10 | 6,038 | 5,741 | 1,508 | 118 | 4.1 | 20% | 39% | Advanced Intermediate |
| 48 | Alt 2-11 | 6,465 | 6,120 | 1,532 | 81 | 2.9 | 23% | 50% | Advanced Intermediate |
| 49 | Alt 2-12 | 6,484 | 5,621 | 4,198 | 114 | 11.0 | 21% | 42% | Advanced Intermediate |
| 50 | Alt 2-13 | 6,264 | 5,618 | 3,797 | 96 | 8.3 | 17% | 43% | Advanced Intermediate |
| 51 | Alt 2-14 | 6,297 | 5,741 | 2,521 | 95 | 5.5 | 23% | 52% | Advanced Intermediate |
| 52 | Alt 2-15 | 6,463 | 6,000 | 2,592 | 63 | 3.7 | 18% | 41% | Advanced Intermediate |

Note: Trail 15 (Paradise) is considered an expert trail because it is accessed via Trail 24 (Paradise Cliff), which is an expert trail.
Source: SE Group

*Access/ Egress Trails*

Under Alternative 2, construction of access and egress trails would occur. The access trail would be constructed approximately 850 feet south of the top terminal of the *Great White Express* lift on the existing Holiday trail. The egress trail would be constructed from the base terminal of the proposed *Basin* lift north to the existing Quail ski trail. Tree island removal and full clearing with no grading would be required for construction of the access and egress trails.

Table 2.3.3-3 provides a summary of new trail construction and ground disturbance areas (including utility installation) under Alternative 2. Refer to Figures 2-2 and 2-3 for the locations of the proposed activities. Approximately 0.1 acre of trail grading would take place at approximately elevation 6,025 feet to remove a slight uphill portion of a ski trail upslope of the proposed mid-mountain lodge (refer to Figure 2-2). The remaining grading shown in Table 2.3.3-3 includes utility installation or lift terminal construction.

**Table 2.3.3-3:**
**Ground Disturbance under Alternative 2**

| Trail Name | Full Clearing with Grading[a] (acres) | Full Clearing with No Grading (acres) | Tree Island Removal (acres) | Tree Island Retention (acres) |
|---|---|---|---|---|
| Alt 2-1 | 0.61 | 0.24 | - | - |
| Alt 2-2 | - | 1.11 | - | - |
| Alt 2-3 | - | - | 0.75 | 0.08 |
| Alt 2-4 | 1.18 | 2.68 | 1.90 | 0.16 |
| Alt 2-5 | 0.32 | 0.27 | 0.48 | 0.06 |
| Alt 2-6 | 0.27 | - | 0.38 | 0.26 |
| Alt 2-7 | - | - | 0.04 | 0.01 |
| Alt 2-8 | 0.90 | 0.03 | 0.05 | 0.01 |
| Alt 2-9 | 0.55 | 0.46 | 0.97 | - |
| Alt 2-10 | - | - | 0.57 | 0.21 |
| Alt 2-11 | 0.02 | - | 0.17 | - |
| Alt 2-12 | 0.95 | 1.25 | 0.83 | 0.87 |
| Alt 2-13 | - | - | 0.90 | 0.10 |
| Alt 2-14 | - | - | 0.31 | 0.19 |
| Alt 2-15 | - | - | 0.12 | - |
| Total | 4.81 | 6.04 | 7.47 | 1.94 |

[a] No full-scale trail re-contouring is proposed for ski trail construction, only Trail 2-8 includes ski trail grading (refer to Figure 3-8), totaling approximately 0.1 acre. The remaining grading in ski trails depicted in this table represents utility installation along the trails.

### *2.3.3.3 Nordic and Snowshoe Trails*

The existing Nordic trail network, excluding the 2.1-kilometer *Zig Zag* trail, would be incorporated in to the MDP, as mapped using GPS (refer to Figure 1-3). The *Zig Zag* Nordic trail and snowshoe trails would

not be included in the MDP, and the USFS would no longer authorize use of the trails after 2007, unless future site-specific NEPA analysis should determine otherwise.

#### *2.3.3.4 Facilities*

##### *Buildings*

Under Alternative 2, a two-story mid-mountain lodge would be constructed within the expanded SUP area. The footprint of the proposed lodge would total 2,000 square feet. The lodge would provide a limited food service, 150 seats and restroom facilities with composting toilets during the winter ski season. The lodge would meet ADA requirements, with all offered amenities being provided on the first (ground-level) floor. No services would be provided on the second floor other than those already provided on the first floor. Food supplies and trash would be transported via snowcat between the base area and the proposed lodge. The lodge would not be utilized outside the ski season.

##### *Parking Lots*

No new parking lots would be constructed. Parking capacity would remain as described under Alternative 1. White Pass would initiate an "in-resort" shuttle service to the more distant parking (along US 12) areas to reduce the need for additional parking lot construction closer to the lodge. The shuttles would consist of two 35-passenger, open air trailers (similar to the shuttle system operated by Crystal Mountain).

#### *2.3.3.5 Utilities*

Figure 2-3 depicts the proposed utility installations under Alternative 2.

##### *Roads*

Alternative 2 would require no additional roads or road reconstruction.

##### *Stream Crossings*

Alternative 2 would require 12 new stream crossings, including 11 aerial utility crossings and one culvert below the bottom terminal of Chair 7.

##### *Power*

Under Alternative 2, the power demand in the White Pass SUP would increase to 4,000kW with the installation of the proposed lifts and mid-mountain lodge. The existing Benton REA power lines and transformer would be upgraded with larger capacity conductors on the existing pole alignment to accommodate the increased demand. Power to the new chairlifts and lodge would be buried underground, within the limits of proposed ski trails, and with low–elevation, aerial crossings over streams (refer to Illustration 2.3 FEIS5).

*Communications*

Under Alternative 2, the existing communications network at White Pass would remain in service. The proposed chairlift installation would be outfitted with a low voltage intercom system and a telephone line. Communication lines would be trenched with power lines along ski trails, with low-elevation, aerial crossings over streams (refer to Illustration 2.3 FEIS5).

*Water*

Under Alternative 2, potable water use at the mid-mountain lodge would total approximately 225 gallons per day (GPD). Water would be supplied by transporting it in sanitized tanks to a 500 gallon sanitized storage tank at the mid-mountain lodge. A separate, 10,000 gallon water tank for fire protection would also be installed. Water for both storage tanks would be transported via snowcat from the base area, with snowcat supply trips of no more than one per day.

*Wastewater*

Gray water from the proposed mid-mountain lodge would be disposed of using a recirculating gravel filter (RGF) system comprised of two septic tanks and a drainfield, which would provide secondary treatment for the wastewater. Capacities of the septic tanks would be sized to adequately accommodate water consumption at the lodge. The drainfield for the lodge would be approximately one-quarter acre in size (sufficient to treat the projected 225 GPD requirement) and located down slope of the lodge site, within the 50-foot building envelope for the lodge. The use of composting toilets would reduce wastewater treatment volumes at the mid-mountain lodge.

The existing base area wastewater treatment facilities would be sufficient to accommodate increased visitation through storage of the over-capacity flows under Alternative 2. However, upgrading of the sewage treatment system by equalization or additional drainfield is included in Alternative 2 to ensure sufficient wastewater treatment and disposal capacities.

### *2.3.3.6 SUP Boundary*

Under Alternative 2, the SUP boundary would be expanded to include 767 acres of land southwest of the current SUP boundary (refer to Figure 2-2). This land is currently allocated to 2L – Developed Recreation and lies entirely within the White Pass Inventoried Roadless Area (IRA) of the Gifford Pinchot National Forest.

### *2.3.3.7 Pacific Crest National Scenic Trail*

Under Alternative 2, no alterations to the location of the PCNST would be required.

### *2.3.3.8 Pedestrian Management Plan*

Under Alternative 2, implementation of a Pedestrian Management Plan is not required.

### 2.3.4 Modified Alternative 4: (Mitigated Two-Lift Expansion with Density Improvements)

Modified Alternative 4 was developed to address issues associated with riparian areas, terrain distribution, terrain safety, off-piste skiing terrain, and visual effects to the PCNST, while addressing the Purpose and Need in a manner similar to the Proposed Action. Modified Alternative 4 was developed from Draft EIS Alternative 4 as a response to recommendations provided by the public, after publication of the Draft EIS. Like Alternative 2, Modified Alternative 4 would include the development of two lifts and associated trails in the expansion area (refer to Figure 2-4). Under Modified Alternative 4, the CCC at White Pass would increase from 2,670 to 3,800. Ski terrain at White Pass would increase from 37 trails on 212.3 acres to 55 trails on 297.6 acres.

Modified Alternative 4 would require an amendment of the GPNF Plan to allow for the crossing of riparian influence areas by ski trails (refer to Section 2.3.1.1).

Differences between the original Alternative 4 from the DEIS (refer to DEIS Section 2.2.1.2 – Alternative 4 – Mitigated Two-Lift Expansion) and the current Modified Alternative 4 are summarized in Table 2.3-FEIS 1.

**Table 2.3 FEIS1:**
**Comparison Between the Original Alternative 4 and the Current Modified Alternative 4**

| Resource/Item | Alternative 4 (DEIS) | Modified Alternative 4 (FEIS) |
|---|---|---|
| Lift Capacity | *Basin* (Fixed Grip Quad): 2,400 people/hour; *Hogback Express*: 2,400 people/hour; CCC = 4,100 | *Basin* (Fixed Grip Triple): 1,800 people/hour; *Hogback Express*: 1,800 people/hour; CCC = 3,800 |
| *Basin* Lift Top Terminal | Top terminal at 6,066 feet elevation, approximately 600 feet downslope of the Alternative 2 location, approximately 300 feet from the Wilderness/SUP boundary – as described in the DEIS. | Top terminal at 6,169 feet elevation, approximately 240 feet from the Wilderness/SUP boundary. |
| New Parking Lot | 2.5 acres - approximately 340 cars – as described in the DEIS. | 7 acres - approx. 946 cars. Parking would be off-highway. |
| Trailer Shuttle System | Yes – Resort shuttle as described for Alternative 2. | No trailer shuttle system. |
| Trail Density | Trail 9-7 not proposed under Alternative 4 in the DEIS | Addition of the ski trail (labeled Trail 9-l) adjacent to the bird trails (additional advanced intermediate terrain within the existing SUP area). |

**Table 2.3 FEIS1:**
**Comparison Between the Original Alternative 4 and the Current Modified Alternative 4**

| Resource/Item | Alternative 4 (DEIS) | Modified Alternative 4 (FEIS) |
|---|---|---|
| | Holiday re-grade not proposed under Alternative 4 in the DEIS | Trail re-grading to the upper section of the Holiday trail to allow novice skiers to ride up the *Paradise* Chairlift and egress via the Holiday trail to the base area and parking lot. |
| | Not proposed under Alternative 4 in the DEIS | Include a second egress trail above Lower Paradise trail, allowing skiers to choose to glide to the base area on a trail other than Lower Paradise. |
| Revegetation of Tree Islands | Not proposed under Alternative 4 in the DEIS | Incorporating tree islands on the lower face nearby to the *Lower Cascades* chairlift- incorporated from Alternative 9 for safety purposes. |

### *2.3.4.1 Lifts*

Under Modified Alternative 4, White Pass would operate a total of six chairlifts and one platter lift, similar to Alternative 2. The *Basin* (C-6) and *Hogback Express* (C-7) chairlifts would be constructed in addition to the five existing lifts within the current SUP boundary. The bottom terminal of the proposed *Basin* chairlift would be located approximately 1,500 feet upslope (south) from the existing Quail trail at approximately 5,552 feet elevation. The upper terminal would be located adjacent to the western boundary of the proposed SUP, at approximately 6,169 feet elevation, and approximately 240 feet at its closest point from the Wilderness/SUP boundary. The *Basin* lift would have an hourly capacity of 1,800 people per hour. The bottom terminal of the *Hogback Express* would be located approximately 3,600 feet east of the *Basin* lift at an elevation of approximately 5,605 feet. The upper terminal of the *Hogback* lift would be located at approximately 6,473 feet elevation, approximately 430 feet at its closest point from the Wilderness/SUP boundary. The *Hogback Express* lift would accommodate an hourly capacity of 1,800 people per hour.

The lift corridors would be fully cleared along the entire length of the chairlifts with no grading. Table 2.3.4-1 summarizes the specifications of the lift network at White Pass under Modified Alternative 4.

**Table 2.3.4-1:**
**White Pass Lift Specifications under Modified Alternative 4**

| Lift Name | Lift Type | Top Elev. (ft.) | Bot. Elev. (ft.) | Vert. Rise (ft.) | Horiz. Length (ft.) | Slope Length (ft.) | Avg. Grade (%) | Hourly Capacity (pph) |
|---|---|---|---|---|---|---|---|---|
| 1. Great White Express | Detachable Quad | 5,999 | 4,477 | 1,521 | 4,814 | 5,125 | 32% | 2,100 |
| 2. Pigtail | Fixed-Grip Double | 5,978 | 4,485 | 1,493 | 4,628 | 4,987 | 32% | 900 |
| 3. Lower Cascade | Fixed-Grip Triple | 5,024 | 4,514 | 510 | 2,166 | 2,232 | 24% | 1,800 |
| 4. Paradise | Fixed-Grip Double | 5,961 | 5,249 | 712 | 2,675 | 2,804 | 27% | 1,200 |
| 5. Platter | Surface Lift | 4,545 | 4,479 | 66 | 512 | 517 | 13% | 400 |
| 6. Basin | Fixed-Grip Triple | 6,169 | 5,552 | 617 | 3,497 | 3,560 | 18% | 1,800 |
| 7. Hogback Express | Detachable Quad | 6,473 | 5,605 | 867 | 4,041 | 4,162 | 21% | 1,800 |

Refer to Appendix B – Mountain Plan Specifications for additional information.
Source: SE Group

### *2.3.4.2 Ski Trails*

Under Modified Alternative 4, White Pass would add approximately 90 acres of terrain on eighteen new trails, and restore and revegetate 5.4 acres of existing terrain, for a net increase of approximately 85 acres of terrain. The trail network under Modified Alternative 4 would increase from the existing 37 named trails on approximately 212 acres to 55 trails on approximately 298 acres (refer to Table 2.3.4-2). The trail network would accommodate the range of skier abilities from novice to expert, comprised of approximately 0.5 acre of beginner terrain, 22.7 acres of novice terrain, 94.6 acres of low-intermediate terrain, 59.7 acres of intermediate terrain, 68.5 acres of advanced-intermediate terrain, and 51.7 acres of expert terrain.

In addition to the new terrain associated with the *Hogback Express* and *Basin* chairlifts, a new trail would be developed in the *Paradise* pod to provide more low intermediate and intermediate terrain. Additionally, portions of the existing trails along the existing *Cascade* lift would be re-vegetated to provide better separation of skiers of differing abilities, more aesthetic ski terrain and improved safety conditions on the lower mountain.

Modified Alternative 4 would include grading on the Holiday trail, enabling it to be classified as novice terrain.

**Table 2.3.4-2:**
**White Pass Terrain Specifications Under Modified Alternative 4**

| Number | Trail / Area Name | Top Elev. (ft.) | Bottom Elev. (ft) | Slope Length (ft) | Avg, Width (ft) | Slope Area (ac) | Avg. Grade (%) | Max. Grade (%) | Ability Level |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Beginner no-name Trail | 4,547 | 4,478 | 589 | 104 | 1.4 | 12% | 17% | Novice |
| 2 | Cascade | 5,967 | 4,971 | 5,131 | 170 | 20.1 | 20% | 43% | Intermediate |
| 3 | Cascade Cliff | 5,266 | 5,050 | 896 | 206 | 4.2 | 25% | 64% | Expert |
| 4 | Chair Trail | 5,688 | 5,466 | 817 | 147 | 2.8 | 29% | 57% | Expert |
| 5 | Elevator Shaft | 5,206 | 5,087 | 380 | 150 | 1.3 | 34% | 48% | Expert |
| 6 | Execution | 5,415 | 5,027 | 723 | 162 | 2.7 | 65% | 99% | Expert |
| 7 | Far Side | 5,023 | 4,517 | 2,631 | 249 | 15.0 | 20% | 35% | Low Intermediate |
| 8 | Grouse | 5,851 | 5,339 | 3,113 | 80 | 5.7 | 17% | 33% | Low Intermediate |
| 9 | Holicade | 5,704 | 5,544 | 862 | 68 | 1.3 | 19% | 35% | Intermediate |
| 10 | Holiday | 5,975 | 4,816 | 8,713 | 106 | 21.3 | 14% | 25% | Novice |
| 11 | Holiday Cliff | 5,487 | 5,132 | 1,372 | 100 | 3.2 | 27% | 65% | Expert |
| 12 | Jaw Breaker | 5,518 | 5,388 | 1,444 | 83 | 2.8 | 9% | 20% | Intermediate |
| 13 | Lower Holiday | 4,816 | 4,509 | 2,213 | 185 | 9.4 | 14% | 25% | Low Intermediate |
| 14 | Lower Hour Glass | 5,139 | 4,918 | 802 | 131 | 2.4 | 29% | 45% | Intermediate |
| 15 | Lower Paradise | 4,766 | 4,475 | 3,548 | 60 | 4.9 | 8% | 23% | Expert |
| 16 | Lower Roller | 4,972 | 4,504 | 1,445 | 303 | 10.0 | 34% | 53% | Advanced Intermediate |
| 17 | Mach V | 5,943 | 5,635 | 1,102 | 109 | 2.8 | 30% | 66% | Expert |
| 18 | Main Street | 5,286 | 4,771 | 3,204 | 84 | 6.1 | 16% | 56% | Expert |
| 19 | Midway | 5,725 | 5,318 | 1,448 | 79 | 2.6 | 30% | 53% | Expert |
| 20 | Near Side | 5,038 | 4,475 | 2,549 | 272 | 15.9 | 23% | 35% | Low Intermediate |
| 21 | Noname Trail | 5,170 | 4,854 | 1,241 | 225 | 6.4 | 26% | 38% | Intermediate |
| 22 | North Peak | 5,905 | 5,632 | 1,264 | 78 | 2.3 | 23% | 73% | Expert |
| 23 | Outhouse | 5,979 | 5,812 | 353 | 195 | 1.6 | 55% | 76% | Expert |
| 24 | Paradise Cliff | 5,163 | 4,766 | 2,105 | 77 | 3.7 | 20% | 55% | Expert |
| 25 | Poma Bowl | 5,063 | 4,486 | 2,005 | 218 | 10.0 | 30% | 45% | Intermediate |
| 26 | Poma Face | 4,966 | 4,483 | 1,698 | 261 | 10.2 | 30% | 41% | Intermediate |
| 27 | Ptarmigan | 5,683 | 5,359 | 1,541 | 147 | 5.2 | 22% | 29% | Low Intermediate |
| 28 | Quail | 5,748 | 5,163 | 3,194 | 87 | 6.4 | 19% | 33% | Low Intermediate |
| 29 | Raven's Haven | 5,921 | 5,756 | 354 | 147 | 1.2 | 54% | 59% | Expert |
| 30 | Roller Cattrac | 5,975 | 5,670 | 1,589 | 83 | 3.0 | 20% | 41% | Expert |
| 31 | Roller Cliff | 5,318 | 4,972 | 748 | 106 | 1.8 | 53% | 69% | Expert |
| 32 | Tucker | 5,829 | 5,487 | 2,282 | 84 | 4.4 | 15% | 36% | Intermediate |
| 33 | Upper Hour Glass | 5,635 | 5,210 | 1,104 | 141 | 3.6 | 43% | 97% | Expert |

**Table 2.3.4-2:**
**White Pass Terrain Specifications Under Modified Alternative 4**

| Number | Trail / Area Name | Top Elev. (ft.) | Bottom Elev. (ft) | Slope Length (ft) | Avg, Width (ft) | Slope Area (ac) | Avg. Grade (%) | Max. Grade (%) | Ability Level |
|---|---|---|---|---|---|---|---|---|---|
| 34 | Upper Paradise | 5,736 | 5,286 | 2,240 | 117 | 6.0 | 21% | 33% | Low Intermediate |
| 35 | Upper Roller | 5,670 | 5,364 | 1,047 | 114 | 2.7 | 31% | 43% | Expert |
| 36 | Water Fall | 4,833 | 4,681 | 384 | 140 | 1.2 | 44% | 55% | Expert |
| 37 | What | 5,648 | 5,398 | 1,297 | 68 | 2.0 | 20% | 39% | Intermediate |
| 38 | Alt 4-1 | 5,547 | 5,442 | 1,747 | 34 | 1.4 | 6% | 17% | Low Intermediate |
| 39 | Alt 4-2 | 5,833 | 5,554 | 3,309 | 39 | 2.9 | 9% | 19% | Low Intermediate |
| 40 | Alt 4-3 | 5,820 | 5,558 | 1,518 | 90 | 3.1 | 18% | 25% | Low Intermediate |
| 41 | Alt 4-4 | 6,190 | 5,554 | 3,668 | 105 | 8.8 | 18% | 28% | Low Intermediate |
| 42 | Alt 4-5 | 6,069 | 5,653 | 2,493 | 82 | 4.7 | 17% | 33% | Low Intermediate |
| 43 | Alt 4-6 | 6,150 | 5,776 | 2,249 | 103 | 5.3 | 17% | 30% | Low Intermediate |
| 44 | Alt 4-7 | 6,153 | 5,974 | 1,146 | 39 | 1.0 | 16% | 27% | Low Intermediate |
| 45 | Alt 4-8 | 6,120 | 5,889 | 2,315 | 67 | 3.6 | 10% | 28% | Advanced Intermediate |
| 46 | Alt 4-9 | 5,960 | 5,618 | 2,008 | 76 | 3.5 | 17% | 31% | Advanced Intermediate |
| 47 | Alt 4-10 | 6,038 | 5,741 | 1,508 | 118 | 4.1 | 20% | 39% | Advanced Intermediate |
| 48 | Alt 4-11 | 6,465 | 6,120 | 1,532 | 81 | 2.9 | 23% | 50% | Advanced Intermediate |
| 49 | Alt 4-12 | 6,484 | 5,621 | 4,198 | 114 | 11.0 | 21% | 42% | Advanced Intermediate |
| 50 | Alt 4-13 | 6,264 | 5,618 | 3,797 | 96 | 8.3 | 17% | 43% | Advanced Intermediate |
| 51 | Alt 4-14 | 6,297 | 5,741 | 2,521 | 95 | 5.5 | 23% | 52% | Advanced Intermediate |
| 52 | Alt 4-15 | 6,463 | 6,000 | 2,592 | 63 | 3.7 | 18% | 41% | Advanced Intermediate |
| 53 | Alt 4-16 | 5,608 | 5,270 | 4,563 | 39 | 4.1 | 8% | 12% | Advanced Intermediate |
| 54 | Alt 4-17 | 5,851 | 5,315 | 2,326 | 219 | 11.7 | 24% | 45% | Advanced Intermediate |
| 55 | Alt 4-18 | 4,974 | 4,637 | 3,138 | 56 | 4.0 | 11% | 22% | Low Intermediate |

Note : Trail 15 (Paradise) is considered an Expert trail because it is accessed via Trail 24 (Paradise Cliff), which is an expert trail.
Source: SE Group

*Access/Egress Trails*

Development of access, egress and ski trails would be as described under Alternative 2, with modifications to trail width and locations to minimize impacts to wetlands. Unlike Alternative 2, Modified Alternative 4 would include an egress trail from the bottom of C-7 to the Quail ski trail to provide access to the base area from the lower Hogback Basin.

Table 2.3.4-3 provides a summary of trail construction and ground disturbance areas under Modified Alternative 4, including utility installation, disturbance associated with the mid-mountain lodge, and lift terminal construction. Refer to Figure 2-4 for the location of the proposed activities.

**Table 2.3.4-3:**
**Ground Disturbance under Modified Alternative 4**

| Trail Name | Full Clearing with Grading[a] (acres) | Full Clearing with No Grading (acres) | Tree Island Removal (acres) | Tree Island Retention (acres) |
|---|---|---|---|---|
| Alt 4-1 | - | - | - | - |
| Alt 4-2 | - | - | - | - |
| Alt 4-3 | 0.26 | 2.02 | 0.01 | - |
| Alt 4-4 | 0.61 | 0.79 | - | - |
| Alt 4-5 | 0.19 | 0.00 | 1.27 | 0.41 |
| Alt 4-6 | 0.44 | 2.02 | 1.01 | 0.01 |
| Alt 4-7 | 0.59 | 0.00 | 0.58 | 0.29 |
| Alt 4-8 | - | 0.00 | 0.16 | 0.00 |
| Alt 4-9 | 0.15 | 0.56 | 0.63 | 0.06 |
| Alt 4-10 | 0.87 | 0.08 | 0.92 | - |
| Alt 4-11 | 0.62 | 0.03 | - | - |
| Alt 4-12 | 0.24 | - | 0.49 | 0.22 |
| Alt 4-13 | 0.03 | - | 0.17 | - |
| Alt 4-14 | 0.79 | 1.10 | 0.90 | 0.87 |
| Alt 4-15 | 2.46 | 0.58 | - | - |
| Alt 4-16 | - | - | 0.67 | - |
| Alt 4-17 | - | - | 0.65 | 0.15 |
| Alt 4-18 | 3.56 | - | - | - |
| Total | 10.81 | 7.18 | 7.60 | 2.00 |

[a] No full-scale trail re-contouring is proposed for ski trail construction. Trail 9-6 (also known as 4-18) and Holiday include only ski trail grading (refer to Figure 3-8). The remaining grading in ski trails depicted in this table represents utility installation along the trails.

### *2.3.4.3 Nordic and Snowshoe Trails*

Nordic and snowshoe trails would be as described under Alternative 2.

### *2.3.4.4 Facilities*

#### *Buildings*

Under Modified Alternative 4, a two-story mid-mountain lodge would be constructed as described for Alternative 2.

Unlike Alternative 2, Modified Alternative 4 would include construction of a ticket booth on currently disturbed ground adjacent to the Yakima Ski Club building and the proposed parking lot. The wooden structure would have a building footprint of 400 square feet and would include a composting toilet.

#### *Parking Lots*

A 7-acre parking lot would be constructed in the northeast corner of the SUP area between US 12, existing ski trails, and the White Pass drainfields. This lot would accommodate approximately 946 cars and all parking would be off-highway. The parking lot would be constructed by clearing, creating an access onto US 12, leveling the parking area, and establishing a gravel surface. The parking lot would be screened from US 12 by existing vegetation.

### *2.3.4.5 Utilities*

Refer to Figure 2-5 for proposed utility locations under Modified Alternative 4.

#### *Roads*

Modified Alternative 4 would require no additional roads or road reconstruction.

#### *Stream Crossing*

Modified Alternative 4 would require 12 new stream crossings, including 11 low elevation, aerial utility crossings (refer to Illustration 2.3 FEIS5) and one temporary culvert below the bottom terminal of Chair 6 - *Basin.* The culvert would be placed in the stream during construction and removed following stabilization of the construction site.

#### *Power*

Power lines for the proposed lodge, ticket booth and chairlifts would be trenched within existing and proposed ski trails, with low elevation aerial crossings over streams. Upgrades to the existing power system would be as described under Alternative 2.

#### *Communications*

Communications would be as described for Alternative 2.

*Water*

Modified Alternative 4 would include the installation of a water supply line from the existing water treatment facility to the mid-mountain lodge. Modified Alternative 4 also includes the option for installation of a well within the 50-foot disturbance corridor upslope of the mid-mountain lodge in the event that the water supply line proves non-feasible at the time of construction.

*Wastewater*

Wastewater facilities for the mid-mountain lodge would be as described under Alternative 2.

#### *2.3.4.6 SUP Boundary*

Under Modified Alternative 4, the SUP boundary would be modified to include 767 additional acres, as described for Alternative 2.

#### *2.3.4.7 Pacific Crest National Scenic Trail*

The Pacific Crest National Scenic Trail would be re-routed to the Wilderness boundary within the expansion area to avoid passing under the *Basin* chairlift. The trail re-route would result in the construction of approximately 2,000 feet of trail. The trail would be constructed to pack and saddle standards (24-inch tread and 6-foot clearing width). The new trail construction would require approximately 0.12 acre of ground disturbance and 0.36 acre of disturbance to vegetation. The re-routed trail would be sited along the ridge to maintain the continuity of the experience and to minimize views of the ski area structures and facilities. The portions of the original trail within view of the proposed reroute would be disguised and the remaining trail would be allowed to naturally re-vegetate.

#### *2.3.4.8 Pedestrian Management Plan*

Under Modified Alternative 4, the White Pass Company would develop a Pedestrian Management Plan to address the need for improved safety along US 12 and issues associated with pedestrian use of the highway. The plan would address opportunities to improve the efficiency of parking operations at the existing and proposed parking lots, prioritization of parking to allow for all available parking lots to be filled prior to parking along the highway, placement of signage along US 12 to inform visitors of parking options, designation of highway crossing areas and other management actions that would improve the safety for arriving and departing White Pass guests.

### 2.3.5 Alternative 6: (Chair 6 With No Hogback Development)

Alternative 6 was developed to address issues associated with riparian areas in Hogback Basin, terrain distribution, and the Inventoried Roadless Area. Alternative 6 would address the Purpose and Need by including the development of one lift, similar to the Chair 6 development in Alternative 2, and associated trails in the expansion area (refer to Figure 2-6). Under Alternative 6, the CCC at White Pass would

increase from 2,670 to 3,640. Ski terrain at White Pass would increase from 37 trails on 212 acres to 44 trails on 241 acres. The total SUP expansion area under Alternative 6 would be 282 acres.

Alternative 6 would require an amendment of the GPNF Plan to allow for the crossing of riparian influence areas by ski trails (refer to Section 2.3.1).

### *2.3.5.1 Lifts*

Under Alternative 6, White Pass would operate five chairlifts and one platter lift. At full build out, all four existing chairlifts at White Pass and one platter lift would remain in their current state. One new chairlift, C-6 (*Basin*) would be constructed with a lift alignment as described under Alternative 2. Under Alterative 6, however, the *Basin* chairlift would be a high-speed detachable quad. Table 2.3.5-1 summarizes the specifications of the lift network at White Pass under Alternative 6.

**Table 2.3.5-1:**
**White Pass Lift Specifications under Alternative 6**

| Lift Name | Lift Type | Top Elev. (ft.) | Bot. Elev. (ft.) | Vert. Rise (ft.) | Horiz. Rise (ft.) | Slope Length (ft.) | Avg. Grade (%) | Hourly Cap. (pph) |
|---|---|---|---|---|---|---|---|---|
| 1. Great White Express | Detachable Quad | 5,999 | 4,477 | 1,521 | 4,814 | 5,125 | 32% | 2,100 |
| 2. Pigtail | Fixed-Grip Double | 5,978 | 4,485 | 1,493 | 4,628 | 4,987 | 32% | 900 |
| 3. Lower Cascade | Fixed-Grip Triple | 5,024 | 4,514 | 510 | 2,166 | 2,232 | 24% | 1,800 |
| 4. Paradise | Fixed-Grip Double | 5,961 | 5,249 | 712 | 2,675 | 2,804 | 27% | 1,200 |
| 5. Platter | Surface Lift | 4,545 | 4,479 | 66 | 512 | 517 | 13% | 400 |
| 6. Basin | Detachable Quad | 6,169 | 5,552 | 617 | 3,497 | 3,560 | 18% | 2,400 |

Refer to Appendix B – Mountain Plan Specifications for additional information.
Source: SE Group

### *2.3.5.2 Ski Trails*

Alternative 6 includes the addition of seven new trails associated with the *Basin* pod. Under Alternative 6 the trail network would increase by approximately 28.8 acres, from the existing 37 named trails on approximately 212 acres, to 44 trails on approximately 241 acres (refer to Table 2.3.5-2). The trail network would accommodate the range of skier abilities from novice to expert, comprised of approximately 0.5 acre of beginner terrain, 1.4 acres of novice terrain, 96.5 acres of low-intermediate terrain, 80.9 acres of intermediate terrain, 10.0 acres of advanced-intermediate terrain, and 51.7 acres of expert terrain.

**Table 2.3.5-2:**
**White Pass Terrain Specifications Under Alternative 6**

| Number | Trail / Area Name | Top Elev. (ft.) | Bottom Elev. (ft) | Slope Length (ft) | Avg, Width (ft) | Slope Area (ac) | Avg. Grade (%) | Max. Grade (%) | Ability Level |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Beginner no-name Trail | 4,547 | 4,478 | 589 | 104 | 1.4 | 12% | 17% | Novice |
| 2 | Cascade | 5,967 | 4,971 | 5,131 | 170 | 20.1 | 20% | 43% | Intermediate |
| 3 | Cascade Cliff | 5,266 | 5,050 | 896 | 206 | 4.2 | 25% | 64% | Expert |
| 4 | Chair Trail | 5,688 | 5,466 | 817 | 147 | 2.8 | 29% | 57% | Expert |
| 5 | Elevator Shaft | 5,206 | 5,087 | 380 | 150 | 1.3 | 34% | 48% | Expert |
| 6 | Execution | 5,415 | 5,027 | 723 | 162 | 2.7 | 65% | 99% | Expert |
| 7 | Far Side | 5,023 | 4,517 | 2,631 | 270 | 16.3 | 20% | 35% | Low Intermediate |
| 8 | Grouse | 5,851 | 5,339 | 3,113 | 80 | 5.7 | 17% | 33% | Low Intermediate |
| 9 | Holicade | 5,704 | 5,544 | 862 | 68 | 1.3 | 19% | 35% | Intermediate |
| 10 | Holiday | 5,975 | 4,816 | 8,713 | 106 | 21.3 | 14% | 39% | Intermediate |
| 11 | Holiday Cliff | 5,487 | 5,132 | 1,372 | 100 | 3.2 | 27% | 65% | Expert |
| 12 | Jaw Breaker | 5,518 | 5,388 | 1,444 | 83 | 2.8 | 9% | 20% | Intermediate |
| 13 | Lower Holiday | 4,816 | 4,509 | 2,213 | 208 | 10.5 | 14% | 25% | Low Intermediate |
| 14 | Lower Hour Glass | 5,139 | 4,918 | 802 | 131 | 2.4 | 29% | 45% | Intermediate |
| 15 | Lower Paradise | 4,766 | 4,475 | 3,548 | 60 | 4.9 | 8% | 23% | Expert |
| 16 | Lower Roller | 4,972 | 4,504 | 1,445 | 303 | 10.0 | 34% | 53% | Advanced Intermediate |
| 17 | Mach V | 5,943 | 5,635 | 1,102 | 109 | 2.8 | 30% | 66% | Expert |
| 18 | Main Street | 5,286 | 4,771 | 3,204 | 84 | 6.1 | 16% | 56% | Expert |
| 19 | Midway | 5,725 | 5,318 | 1,448 | 79 | 2.6 | 30% | 53% | Expert |
| 20 | Near Side | 5,038 | 4,475 | 2,549 | 309 | 18.1 | 23% | 35% | Low Intermediate |
| 21 | Noname Trail | 5,170 | 4,854 | 1,241 | 225 | 6.4 | 26% | 38% | Intermediate |
| 22 | North Peak | 5,905 | 5,632 | 1,264 | 78 | 2.3 | 23% | 73% | Expert |
| 23 | Outhouse | 5,979 | 5,812 | 353 | 195 | 1.6 | 55% | 76% | Expert |
| 24 | Paradise Cliff | 5,163 | 4,766 | 2,105 | 77 | 3.7 | 20% | 55% | Expert |
| 25 | Poma Bowl | 5,063 | 4,486 | 2,005 | 218 | 10.0 | 30% | 45% | Intermediate |
| 26 | Poma Face | 4,966 | 4,483 | 1,698 | 261 | 10.2 | 30% | 41% | Intermediate |
| 27 | Ptarmigan | 5,683 | 5,359 | 1,541 | 147 | 5.2 | 22% | 29% | Low Intermediate |
| 28 | Quail | 5,748 | 5,163 | 3,194 | 87 | 6.4 | 19% | 33% | Low Intermediate |
| 29 | Raven's Haven | 5,921 | 5,756 | 354 | 147 | 1.2 | 54% | 59% | Expert |
| 30 | Roller Cattrac | 5,975 | 5,670 | 1,589 | 83 | 3.0 | 20% | 41% | Expert |
| 31 | Roller Cliff | 5,318 | 4,972 | 748 | 106 | 1.8 | 53% | 69% | Expert |
| 32 | Tucker | 5,829 | 5,487 | 2,282 | 84 | 4.4 | 15% | 36% | Intermediate |

**Table 2.3.5-2:**
**White Pass Terrain Specifications Under Alternative 6**

| Number | Trail / Area Name | Top Elev. (ft.) | Bottom Elev. (ft) | Slope Length (ft) | Avg, Width (ft) | Slope Area (ac) | Avg. Grade (%) | Max. Grade (%) | Ability Level |
|---|---|---|---|---|---|---|---|---|---|
| 33 | Upper Hour Glass | 5,635 | 5,210 | 1,104 | 141 | 3.6 | 43% | 97% | Expert |
| 34 | Upper Paradise | 5,736 | 5,286 | 2,240 | 117 | 6.0 | 21% | 33% | Low Intermediate |
| 35 | Upper Roller | 5,670 | 5,364 | 1,047 | 114 | 2.7 | 31% | 43% | Expert |
| 36 | Water Fall | 4,833 | 4,681 | 384 | 140 | 1.2 | 44% | 55% | Expert |
| 37 | What | 5,648 | 5,398 | 1,297 | 68 | 2.0 | 20% | 39% | Intermediate |
| 38 | Alt 6-1 | 5,833 | 5,559 | 3,071 | 36 | 2.5 | 9% | 19% | Low Intermediate |
| 39 | Alt 6-2 | 5,546 | 5,443 | 1,738 | 34 | 1.4 | 6% | 18% | Low Intermediate |
| 40 | Alt 6-3 | 5,817 | 5,553 | 1,662 | 87 | 3.3 | 16% | 25% | Low Intermediate |
| 41 | Alt 6-4 | 6,187 | 5,551 | 3,772 | 109 | 9.4 | 17% | 28% | Low Intermediate |
| 42 | Alt 6-5 | 6,055 | 5,772 | 1,496 | 94 | 3.2 | 19% | 33% | Low Intermediate |
| 43 | Alt 6-6 | 6,142 | 5,883 | 1,499 | 127 | 4.4 | 18% | 29% | Low Intermediate |
| 44 | Alt 6-7 | 6,153 | 5,656 | 3,684 | 54 | 4.5 | 14% | 27% | Low Intermediate |

Note : Trail 15 (Paradise) is considered an Expert trail because it is accessed via Trail 24 (Paradise Cliff), which is an expert trail.
Source: SE Group

Table 2.3.5-3 provides a summary of new trail construction and ground disturbance areas (including utility installation) under Alternative 6. Refer to Figure 2-6 for the location of the proposed activities.

**Table 2.3.5-3:**
**Ground Disturbance under Alternative 6**

| Trail Name | Full Clearing with Grading[a] (acres) | Full Clearing with No Grading (acres) | Tree Island Removal | Tree Island Retention |
|---|---|---|---|---|
| Alt 6-1 | 0.27 | 2.34 | 0.00 | - |
| Alt 6-2 | 0.64 | 1.14 | - | - |
| Alt 6-3 | - | - | 0.79 | 0.08 |
| Alt 6-4 | 2.02 | 1.57 | 1.12 | 0.24 |
| Alt 6-5 | - | - | 0.39 | 0.10 |
| Alt 6-6 | - | - | 0.28 | 0.40 |
| Alt 6-7 | 0.00 | - | 0.55 | 0.03 |
| Total | 2.93 | 5.06 | 3.13 | 0.85 |

[a] No full-scale trail re-contouring is proposed for ski trail construction (refer to Figure 3-9). All grading in ski trails depicted in this table represents utility installation along the trails.

### *2.3.5.3 Nordic and Snowshoe Trails*

Nordic and snowshoe trails would be as described under Alternative 2.

### *2.3.5.4 Facilities*

#### *Buildings*

Under Alternative 6, a ticket booth would be constructed adjacent to the Yakima Ski Club building, adjacent to the proposed parking lot. The wooden structure would have a building footprint of 400 square feet and would include a composting toilet.

A two-story mid-mountain lodge would be constructed along the existing Quail Trail at the intersection with the proposed egress trail from the *Basin* pod. The footprint of the proposed lodge would be 2,000 square feet. The lodge would provide a limited food service, 150 seats, and restroom facilities with composting toilets during the winter ski season. The lodge would meet ADA requirements, with all offered amenities being provided on the first (ground-level) floor. No services would be provided on the second floor other than those already provided on the first floor. Food supplies and trash would be transported via snowcat between the base area and the proposed lodge.

#### *Parking Lots*

A 2.5-acre parking lot would be constructed in the northeast corner of the SUP area, adjacent to the existing drainfield. This lot would accommodate approximately 340 cars. The parking lot would be constructed by clearing approximately 3 acres, creating an access onto US 12, leveling the parking area, and establishing a gravel surface. The parking lot would be screened from US 12 by existing vegetation.

### *2.3.5.5 Utilities*

Refer to Figure 2-7 for proposed utility locations.

#### *Roads*

A new permanent road, approximately 0.25 mile, would be constructed from the existing Quail Trail to the base of the *Basin* chairlift. This road would also serve as the egress trail from the Basin pod.[21] The permanent road would be used during construction of the Chair 5 pod and for maintenance of the bottom terminal after construction. The road would cross four intermittent streams (refer to Stream Crossings), and occupy approximately 1 acre of Riparian Reserves. In order not to increase the mileage of roads in the Clear Fork Cowlitz Tier II Key Watershed, obliteration of 0.6 mile of Road 1284.016, an existing native surface road located approximately 1 mile northwest of White Pass, would occur under Alternative 6. The road to be obliterated was originally constructed for timber harvest and is now in Late Successional Reserves. The road segment to be obliterated is at an operational maintenance level 1 and is proposed to remain at this level into the future under current management. Construction of the new road would only take place after obliteration of the existing road, for a net loss of 0.35 mile of road in the watershed.

#### *Stream Crossings*

Alternative 6 would require four new permanent, culverted stream crossings for the access road to the bottom terminal of Chair 5.

#### *Power*

Power to the *Basin* chairlift would be trenched within proposed ski trail clearings, as in Alternative 2, except that the utility corridor would also serve as a permanent road (approximately 0.25 mile) to the bottom terminal site. Power demand would increase to approximately 3,500 kW. The power supply conductor size would be upgraded to accommodate the increased demand, as described for Alternative 2.

#### *Communications*

Communications would be developed as described under Alternative 2.

#### *Water*

Water would be transported to the mid-mountain lodge from the existing water system through the installation of a supply line in the existing mountain work road along Main Street and Quail.

[21] The road would include approximately 0.25 mile inside the White Pass IRA, which is also in a Tier II Key Watershed. In order for the Decision-makers to select this road and for the road to be constructed, the Regional Executive Interagency Committee would have to formally determine the construction of such a road would be consistent with the Aquatic Conservation Strategy, as outlined in the Northwest Forest Plan (USDA, USDI, 1994). If the Roadless Area Conservation Rule is formally implemented then this road would not be allowed in the White Pass IRA, therefore construction techniques (as described in the other Action Alternatives) would be implemented.

*Wastewater*

Wastewater from the mid-mountain lodge would be gravity fed to the existing wastewater system. Wastewater treatment in the base area would be as described for Alternative 2, except under Alternative 6 approximately 20,020 gallons of wastewater would be generated in the base area per day, which is above the 12,000 gallon flow capacity of the existing wastewater treatment system (refer to Section 3-13 - Utilities). As the demand for wastewater treatment (20,020 gallons) would exceed the capacity of the current wastewater treatment facilities under Alternative 6, White Pass would install storage tanks to hold wastewater during peak periods, and/or construct an additional drainfield. For equalization, one or more tanks, totaling 8,000 gallons, would be installed underground in the previously-disturbed area immediately west of the existing Day Lodge, requiring disturbance to approximately 0.05 acre of ground for installation. During low-use periods, wastewater would be pumped from the storage tanks to the septic tanks and into the wastewater treatment system. The additional drainfield would be approximately 0.03 acres and located near the existing drainfield and parking lot.

#### *2.3.5.6 SUP Boundary*

Under Alternative 6, the White Pass SUP area would be expanded by approximately 282 acres.

#### *2.3.5.7 Pacific Crest National Scenic Trail*

Under Alternative 6, no modifications to the PCNST would occur.

#### *2.3.5.8 Pedestrian Management Plan*

Under Alternative 6, implementation of a Pedestrian Management Plan would not be required.

### 2.3.6 Alternative 9: (Infill – Maintain Existing Cliffline)

Alternative 9 was developed to address issues associated with dispersed recreation, terrain distribution, visual quality and the Inventoried Roadless Area. Alternative 9 would address the Purpose and Need by including the development of one new lift and associated trails in the eastern portion of the existing SUP area (refer to Figure 2-8). Under Alternative 9, the CCC at White Pass would increase from 2,670 to 3,280. Ski terrain at White Pass would increase from 37 trails on approximately 212.3 acres, to 44 trails on approximately 259.7 acres.

Alternative 9 includes the addition of a single chairlift, the *PCT* chairlift, and associated ski trails. Under Alternative 9, no expansion of the SUP area boundary would take place.

Alternative 9 would require an amendment of the GPNF Plan to allow for the crossing of riparian influence areas by ski trails (refer to Section 2.3.1).

### *2.3.6.1 Lifts*

Under Alternative 9, White Pass would operate five chairlifts and one platter lift. At full build out, all four existing chairlifts and platter lift at White Pass would remain in their current state. One new chairlift, the *PCT* chairlift would be constructed in the eastern portion of the existing SUP area, east of the existing Holiday trail and would have five associated trails (refer to Figure 2-8). Table 2.3.6-1 summarizes the specifications of the lift network at White Pass under Alternative 9.

**Table 2.3.6-1:**
**White Pass Lift Specifications under Alternative 9**

| Lift Name | Lift Type | Top Elev. (ft.) | Bot. Elev. (ft.) | Vert. Rise (ft.) | Horiz. Rise (ft.) | Avg. Grade (%) | Slope Length (ft.) | Hourly Capacity (pph) |
|---|---|---|---|---|---|---|---|---|
| 1. Great White Express | Detachable Quad | 5,999 | 4,477 | 1,521 | 4,814 | 32% | 5,125 | 2,100 |
| 2. Pigtail | Fixed-Grip Double | 5,978 | 4,485 | 1,493 | 4,628 | 32% | 4,987 | 900 |
| 3. Lower Cascade | Fixed-Grip Triple | 5,024 | 4,514 | 510 | 2,166 | 24% | 2,232 | 1,800 |
| 4. Paradise | Fixed-Grip Double | 5,961 | 5,249 | 712 | 2,675 | 27% | 2,804 | 1,200 |
| 5. Platter | Surface Lift | 4,545 | 4,479 | 66 | 512 | 13% | 517 | 400 |
| 6. PCT | Fixed-Grip Triple | 5,092 | 4,573 | 519 | 2,855 | 18% | 2,919 | 1,800 |

Refer to Appendix B – Mountain Plan Specifications for additional information.
Source: SE Group

Under Alternative 9, the *PCT* chairlift would access low intermediate to intermediate level terrain. The bottom terminal would be located approximately 780 feet east of the bottom terminal of the existing *Cascade* chairlift at 4,573 feet elevation. The upper terminal would be located at approximately 5,100 feet elevation approximately 100 feet north of the intersection of the Holiday and Holiday Cliff trails. The *PCT* chairlift is proposed as a bottom drive, fixed grip triple chairlift. The proposed lift would accommodate 1,800 intermediate and expert level skiers per hour.

### *2.3.6.2 Ski Trails*

Alternative 9 includes the addition of seven new trails associated with the *PCT* pod. Under Alternative 9, approximately 53 acres of terrain would be added to the trail network, and 5.4 acres would be revegetated, for a total increase of approximately 48 acres. The trail network at White Pass would increase from the existing 37 named trails on approximately 212.3 acres, to 44 trails on approximately 259.7 acres (refer to Table 2.3.6-2). The trail network would accommodate the range of skier abilities from beginner to expert, comprised of approximately 1.9 acres of beginner terrain, 35.8 acres of novice terrain, 58.9 acres of low-intermediate terrain, 85.6 acres of intermediate terrain, 25.7 acres of advanced-intermediate terrain, and 51.7 acres of expert terrain.

**Table 2.3.6-2:**
**White Pass Terrain Specifications Under Alternative 9**

| Number | Trail / Area Name | Top Elev. (ft.) | Bot. Elev. (ft) | Slope Length (ft) | Avg, Width (ft) | Slope Area (ac) | Avg. Grade (%) | Max. Grade (%) | Ability Level |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Beginner no-name Trail | 4,547 | 4,478 | 589 | 142 | 1.9 | 12% | 17% | Beginner |
| 2 | Cascade | 5,967 | 4,971 | 5,131 | 170 | 20.1 | 20% | 43% | Intermediate |
| 3 | Cascade Cliff | 5,266 | 5,050 | 896 | 206 | 4.2 | 25% | 64% | Expert |
| 4 | Chair Run | 5,688 | 5,466 | 817 | 147 | 2.8 | 29% | 57% | Expert |
| 5 | Elevator Shaft | 5,206 | 5,087 | 380 | 150 | 1.3 | 34% | 48% | Expert |
| 6 | Execution | 5,415 | 5,027 | 723 | 162 | 2.7 | 65% | 99% | Expert |
| 7 | Far Side | 5,023 | 4,517 | 2,631 | 241 | 14.6 | 20% | 35% | Novice |
| 8 | Grouse | 5,851 | 5,339 | 3,113 | 80 | 5.7 | 17% | 33% | Low Intermediate |
| 9 | Holicade | 5,704 | 5,544 | 862 | 68 | 1.3 | 19% | 35% | Intermediate |
| 10 | Holiday | 5,975 | 4,816 | 8,713 | 106 | 21.3 | 14% | 25% | Novice |
| 11 | Holiday Cliff | 5,487 | 5,132 | 1,372 | 100 | 3.2 | 27% | 65% | Expert |
| 12 | Jaw Breaker | 5,518 | 5,388 | 1,444 | 83 | 2.8 | 9% | 20% | Intermediate |
| 13 | Lower Holiday | 4,816 | 4,509 | 2,213 | 185 | 9.4 | 14% | 25% | Low Intermediate |
| 14 | Lower Hour Glass | 5,139 | 4,918 | 802 | 131 | 2.4 | 29% | 45% | Intermediate |
| 15 | Lower Paradise | 4,766 | 4,475 | 3,548 | 60 | 4.9 | 8% | 23% | Expert |
| 16 | Lower Roller | 4,972 | 4,504 | 1,445 | 303 | 10.0 | 34% | 53% | Advanced Intermediate |
| 17 | Mach V | 5,943 | 5,635 | 1,102 | 109 | 2.8 | 30% | 66% | Expert |
| 18 | Main Street | 5,286 | 4,771 | 3,204 | 84 | 6.1 | 16% | 56% | Expert |
| 19 | Midway | 5,725 | 5,318 | 1,448 | 79 | 2.6 | 30% | 53% | Expert |
| 20 | Near Side | 5,038 | 4,475 | 2,549 | 257 | 15.0 | 23% | 35% | Low Intermediate |
| 21 | Noname Trail | 5,170 | 4,854 | 1,241 | 225 | 6.4 | 26% | 38% | Intermediate |
| 22 | North Peak | 5,905 | 5,632 | 1,264 | 78 | 2.3 | 23% | 73% | Expert |
| 23 | Outhouse | 5,979 | 5,812 | 353 | 195 | 1.6 | 55% | 76% | Expert |
| 24 | Paradise Cliff | 5,163 | 4,766 | 2,105 | 77 | 3.7 | 20% | 55% | Expert |
| 25 | Poma Bowl | 5,063 | 4,486 | 2,005 | 218 | 10.0 | 30% | 45% | Intermediate |
| 26 | Poma Face | 4,966 | 4,483 | 1,698 | 261 | 10.2 | 30% | 41% | Intermediate |
| 27 | Ptarmigan | 5,683 | 5,359 | 1,541 | 147 | 5.2 | 22% | 29% | Low Intermediate |
| 28 | Quail | 5,748 | 5,163 | 3,194 | 87 | 6.4 | 19% | 33% | Low Intermediate |
| 29 | Raven's Haven | 5,921 | 5,756 | 354 | 147 | 1.2 | 54% | 59% | Expert |
| 30 | Roller Cattrac | 5,975 | 5,670 | 1,589 | 83 | 3.0 | 20% | 41% | Expert |
| 31 | Roller Cliff | 5,318 | 4,972 | 748 | 106 | 1.8 | 53% | 69% | Expert |
| 32 | Tucker | 5,829 | 5,487 | 2,282 | 84 | 4.4 | 15% | 36% | Intermediate |

**Table 2.3.6-2:**
**White Pass Terrain Specifications Under Alternative 9**

| Number | Trail / Area Name | Top Elev. (ft.) | Bot. Elev. (ft) | Slope Length (ft) | Avg, Width (ft) | Slope Area (ac) | Avg. Grade (%) | Max. Grade (%) | Ability Level |
|---|---|---|---|---|---|---|---|---|---|
| 33 | Upper Hour Glass | 5,635 | 5,210 | 1,104 | 141 | 3.6 | 43% | 97% | Expert |
| 34 | Upper Paradise | 5,736 | 5,286 | 2,240 | 117 | 6.0 | 21% | 33% | Low Intermediate |
| 35 | Upper Roller | 5,670 | 5,364 | 1,047 | 114 | 2.7 | 31% | 43% | Expert |
| 36 | Water Fall | 4,833 | 4,681 | 384 | 140 | 1.2 | 44% | 55% | Expert |
| 37 | What | 5,648 | 5,398 | 1,297 | 68 | 2.0 | 20% | 39% | Intermediate |
| 38 | Alt 9-1 | 5,202 | 4,920 | 871 | 199 | 4.0 | 34% | 49% | Advanced Intermediate |
| 39 | Alt 9-2 | 5,089 | 4,573 | 3,455 | 168 | 13.3 | 15% | 35% | Intermediate |
| 40 | Alt 9-3 | 5,090 | 4,684 | 2,015 | 172 | 8.0 | 21% | 36% | Intermediate |
| 41 | Alt 9-4 | 5,067 | 4,813 | 1,126 | 179 | 4.6 | 23% | 36% | Intermediate |
| 42 | Alt 9-5 | 5,012 | 4,664 | 1,519 | 205 | 7.2 | 24% | 34% | Low Intermediate |
| 43 | Alt 9-6 | 4,974 | 4,637 | 3,138 | 56 | 4.0 | 11% | 22% | Low Intermediate |
| 44 | Alt 9-7 | 5,851 | 5,315 | 2,326 | 219 | 11.7 | 24% | 45% | Advanced Intermediate |

Note : Trail 15 (Paradise) is considered an Expert trail because it is accessed via Trail 24 (Paradise Cliff), which is an expert trail.
Source: SE Group

Trails would be developed in the eastern portion of the existing SUP area in association with the PCT Chair. Additional trails in the *Paradise* pod would be developed to provide more low intermediate and intermediate terrain. An alternative egress route from the western portion of the *Paradise* pod would be constructed from the existing Main Street trail at approximately 4,950 feet elevation. Grading of the Holiday and Elevator Shaft trails would occur to reduce slope gradients from 65 percent to a maximum of 48 percent. Additionally, portions of the existing trails (approximately 12 acres) along the existing *Cascade* lift would be re-vegetated to provide better separation of skiers of differing abilities and more aesthetic ski terrain on the lower mountain.

Table 2.3.6-3 provides a summary of new trail construction and ground disturbance areas (including utility installation) under Alternative 9. Refer to Figure 2-8 for the location of the proposed activities.

**Table 2.3.6-3:**
**Ground Disturbance under Alternative 9**

| Trail Name | Full Clearing with Grading[a] (acres) | Full Clearing with No Grading (acres) |
|---|---|---|
| Beginner no-name Trail | 1.09 | - |
| Far Side | 0.97 | - |
| Holiday | 1.21 | - |
| 9-1 | - | 1.73 |
| 9-2 | 1.57 | 6.53 |
| 9-3 | 0.13 | 4.71 |
| 9-4 | - | 2.68 |
| 9-5 | - | 3.09 |
| 9-6 | 3.56 | - |
| 9-7 | - | 6.47 |
| Total | 8.54 | 25.21 |

[a] No full-scale trail re-contouring is proposed for ski trail construction, only Trail 9-6, Holiday, and the Platter (no-name) trails include ski trail grading (refer to Figure 3-10). The remaining grading in ski trails depicted in this table represents utility installation along the trails.

### *2.3.6.3 Nordic and Snowshoe Trails*

Nordic and snowshoe trails would be as described under Alternative 2.

### *2.3.6.4 Facilities*

#### *Buildings*

A 2-story mountain-top lodge with a 3,000-square foot footprint would be constructed at the summit of Pigtail Peak, within the existing ski area permit boundary. The larger footprint compared to Alternatives 2 and 4 allows for more space for lodge users. The lodge would provide a limited food service, 150 seats, and restroom facilities with composting toilets. Food supplies and trash would be transported via snowcat between the base area and the proposed lodge.

Under Alternative 9, a ticket booth would be constructed adjacent to the Yakima Ski Club building, adjacent to the proposed parking lot. The wooden structure would have a building footprint of 400 square feet and would include a composting toilet.

#### *Parking Lots*

Parking under Alternative 9 would be as described for Alternative 6.

### *2.3.6.5 Utilities*

#### *Roads*

Alternative 9 would require no additional roads or road reconstruction.

#### *Stream Crossings*

Alternative 9 would require 15 new stream crossings, including 11 permanent culverts and four bridges for ski trails.

#### *Power*

Power to PCT Chair would be trenched from the base lodge to the bottom terminal following existing ski trails. Power demand would increase to approximately 3,500 kW, as described for Alternative 6. The Benton REA would increase the size of the conductors on the powerline, as described for Alternative 2.

#### *Communications*

Communications would be trenched from the base lodge with the power lines, as described under Alternative 2.

#### *Water*

Water would be transported to the mountain top lodge from the existing water system through the installation of a supply line in the mountain work road along Main Street and Quail, similar to Alternative 6.

#### *Wastewater*

Wastewater from the mountain top lodge would be gravity fed to the existing wastewater system. Wastewater treatment and capacity in the base area would be as described for Alternative 2, except approximately 17,751 gallons of wastewater would be generated in the base area per day, which is above the 12,000 gallon flow capacity of the existing wastewater treatment system (refer to Section 3-13 - Utilities). As the demand for wastewater treatment (18,040 gallons) under Alternative 9 would exceed the capacity of the current wastewater treatment facilities, White Pass would install storage tanks to hold wastewater during peak periods and/or add a drainfield. One or more tanks, totaling 8,000 gallons, would be installed underground in the previously-disturbed area immediately west of the existing Day Lodge, requiring disturbance to approximately 0.05 acre of ground for installation. During low-use periods, wastewater would be pumped from the storage tanks to the septic tanks and into the wastewater treatment system. The approximately 0.03-acre additional drainfield would be located near the existing drainfield and parking lot.

### *2.3.6.6 SUP Boundary*

There would be no expansion of the existing SUP Boundary under Alternative 9.

### *2.3.6.7 Pacific Crest National Scenic Trail*

Under Alternative 9 the Pacific Crest Trail National Scenic Trail would be re-aligned to avoid passing through a new ski trail. The trail re-alignment would result in the construction of approximately 225 feet of trail. The trail would be constructed to pack and saddle standards (24-inch tread and 6-foot clearing width). The new trail construction would require approximately 0.01 acre (448 square feet) of ground disturbance and 0.03 acre (1,348 square feet) of disturbance to vegetation. The retired portion of the PCNST would be located within a new ski trail and would not be restored to original forested conditions. The abandoned tread would be stabilized to prevent erosion using mulch and/or re-vegetation in conjunction with ski trail re-vegetation.

### *2.3.6.8 Pedestrian Management Plan*

Under Alternative 9, implementation of a Pedestrian Management Plan would not be required.

## 2.4 RESOURCE PROTECTION AND MITIGATION MEASURES

Resource protection measures can be incorporated directly into the design of all of the Action Alternatives to reduce the likelihood of impacts and to ensure that Forest Plan standards and guidelines are met. Among these for the White Pass Expansion project are specific lift and trail construction techniques.

Lift and trail construction techniques vary, depending upon access and slope gradient, as well as potential environmental effects. Construction techniques would be implemented to avoid and minimize environmental effects (e.g., helicopter access, tree-cutting/construction over snow). Table 2.4-1 presents the construction techniques for the proposed lifts and trails.

**Table 2.4-1:**
**Lift and Trail Construction Techniques**

| Lift/Trail Name | Upper and Lower Lift Terminal | Lift Towers | Lift Corridor and Trail Construction |
|---|---|---|---|
| *Basin* pod (Alternatives 2, 6, and Modified Alternative 4) | • Footings would be machine excavated.<br>• Under Alternative 2 and Modified Alternative 4, no roads would be constructed to access lift terminal locations. Transport methods would be consistent with ID 19202004-1 Management of Inventoried Roadless Areas. Construction would include helicopter transport, transport over snow, low-impact | • All lift towers would be constructed offsite and airlifted into place.<br>• Tower footings would be excavated by hand, over snow when possible. A small excavator, transported to the sites by helicopter or cross-country, may be necessary if weather conditions do not permit hand excavation. Low impact equipment would be used as necessary. | • All trees would be removed by manual methods. Felled trees would be lopped and scattered along ski trail edges or in Riparian Reserves.<br>• Grading would not occur during periods where runoff conditions would exist (i.e., if ½-inch of rain occurs or is deemed likely to occur during a 24-hour period). This would prevent excessive |

**Table 2.4-1:**
**Lift and Trail Construction Techniques**

| Lift/Trail Name | Upper and Lower Lift Terminal | Lift Towers | Lift Corridor and Trail Construction |
|---|---|---|---|
| | equipment, and narrow four-wheeled vehicles cross country. Under Alternative 6, a road would access the bottom terminal site.<br>• A small crane or boom truck would be necessary for terminal construction. Equipment would access the site according to the Travel Route Plan (refer to MM11 in Table 2.4-2). The equipment would remain onsite until construction was completed and would then leave the site according to the Travel Route Plan (refer to MM11 in Table 2.4-2).<br>• Lift terminals would be constructed onsite.<br>• Lift terminals would be excavated by machine. Low impact equipment would be used and enter and leave the site as described in the Travel Route Plan, over snow when possible.<br>• Grading for lift terminals would be limited by construction envelopes.<br>• Silt fence and erosion control blankets would be used as necessary as specified by USFS hydrologist. Exposed areas would be seeded with native grasses and covered with straw after completion of construction. Straw cover to minimize erosion prior to completion of construction would be applied, if soil becomes saturated and/or runoff | | erosion caused by grading to occur during unusually heavy summer rains and/or fall rains. The surface would be seeded with native vegetation and covered with certified weed free straw after grading is completed. Silt fence and/or erosion control blankets would be used as necessary if specified by USFS hydrologist.<br>• All understory vegetation less than 3 feet tall would be retained. |

**Table 2.4-1:**
**Lift and Trail Construction Techniques**

| Lift/Trail Name | Upper and Lower Lift Terminal | Lift Towers | Lift Corridor and Trail Construction |
|---|---|---|---|
| | occurs from the disturbed areas. | | |
| *Hogback Express* pod (Alternative 2 and Modified Alternative 4) | • Footings would be machine excavated.<br>• No roads would be constructed to access lift terminal locations. Transport methods would be consistent with ID 1920-2004-1 Management of Inventoried Roadless Areas and include helicopter transport, transport over snow, low-impact equipment.<br>• Lift terminals would be constructed onsite.<br>• Lift terminals would be excavated by machine. Low impact equipment would be used and operated according to the Travel Route Plan (refer to MM11 in Table 2.4-2), over snow when possible, otherwise cross country.<br>• Grading for lift terminals would be limited by construction envelopes.<br>• Silt fence and erosion control blankets would be used as necessary, as specified by the USFS hydrologist. Exposed areas would be seeded with native grasses and covered with straw after completion of construction. Straw cover to minimize erosion prior to completion of construction would be applied, if soil becomes saturated and/or runoff occurs from the disturbed areas. | • All lift towers would be constructed offsite and airlifted into place.<br>• Tower footings would be excavated by hand, over snow when possible. A small excavator, transported to the sites by helicopter or cross-country, may be necessary if weather conditions do not permit hand excavation. Low impact equipment would be used as necessary. | • All trees would be removed by manual methods. Felled trees would be lopped and scattered. Excess slash would be chipped or scattered onsite in accordance with USFS guidelines.<br>• Grading would not occur during periods where runoff conditions would exist (i.e., if ½-inch of rain occurs or is deemed likely to occur during a 24-hour period). This would prevent excessive erosion caused by grading to occur during unusually heavy summer rains and/or fall rains. The surface would be seeded with native vegetation and covered with certified weed free straw after grading is completed. Silt fence and/or erosion control blankets would be used as necessary if specified by USFS hydrologist.<br>• All understory vegetation less than 3 feet tall would be retained. |

**Table 2.4-1:**
**Lift and Trail Construction Techniques**

| Lift/Trail Name | Upper and Lower Lift Terminal | Lift Towers | Lift Corridor and Trail Construction |
|---|---|---|---|
| *PCT* chairlift ski pod (Alternative 9) | • Footings would be machine excavated.<br>• Equipment would access the site via existing roads and ski trails where possible.<br>• Grading for lift terminals would be limited by construction envelopes. The lower terminal would be constructed adjacent to the proposed parking lot. Construction materials and equipment would be staged within the parking lot to minimize impacts.<br>• Silt fence and erosion control blankets would be used as necessary, as specified by USFS hydrologist. Exposed areas would be seeded with native grasses and covered with straw after completion of construction. Straw cover to minimize erosion prior to completion of construction would be applied, if soil becomes saturated and/or runoff occurs from the disturbed areas.<br>• Lift terminals would be constructed onsite. | • All lift towers would be constructed offsite and airlifted into place.<br>• Tower footings would be excavated by hand, over snow when possible. A small excavator, transported to the sites by helicopter or cross-country, may be necessary if weather conditions do not permit hand excavation. Low impact equipment would be used as necessary. | • Trees would be removed by mechanical methods (i.e., processor forwarder operating on a slash bed). Merchantable trees would be removed by helicopter or processor forwarder and decked in the existing or proposed parking lot for sale. Non-merchantable trees would be chipped or lopped and scattered. Excess slash would be burned, chipped, or lopped and scattered.<br>• Grading would occur within one of the proposed trails and two existing trails to reduce slope gradients Grading would be accomplished by bulldozer that would enter the construction site over existing roads. Grading would not occur during periods where runoff conditions would exist (i.e., if ½-inch of rain occurs or is deemed likely to occur during a 24-hour period) This would prevent excessive erosion caused by grading to occur during unusually heavy summer rains and/or fall rains. The surface would be seeded with native grasses and covered with straw after grading is completed. Erosion control blankets would be used as necessary.<br>• All understory vegetation less than 3 feet tall would be retained. |

In addition to the resource protection measures described above, NEPA and CEQ regulations require identification of all relevant, reasonable Mitigation Measures that could reduce the impacts of the project, even if those measures are outside the jurisdiction of the USFS.

Mitigation Measures would be applied to National Forest System lands affected by implementation of the project. Local governments and state and federal agencies may require additional Mitigation Measures as conditions of permits. Any such measures would be automatically incorporated as required measures. Required USFS Mitigation Measures would be implemented under terms of the SUP.

Mitigation Measures intended to avoid, minimize, rectify, and reduce or eliminate potential negative impacts associated with the proposed projects are summarized in Table 2.4-2. These Mitigation Measures are an integral part of each of the Action Alternatives. They are listed here separately to avoid repeating them in each alternative description. In many cases, Mitigation Measures include design criteria that are intended to avoid an impact altogether.

The effectiveness of each measure is rated as high, moderate, or low to provide a qualitative assessment of expected effectiveness that the implemented practice would have in preventing or reducing impacts on resources. These Mitigation Measures are considered in the effects discussions of Chapter 3.

Effectiveness ratings of High, Moderate or Low are based on the following criteria: a) literature and research; b) administrative studies (local or within similar ecosystem); c) experience (judgment of qualified personnel by education and/or experience); d) fact (obvious by reasoned, logical response). The definition of each rating is provided below.

> *High*: Practice is highly effective (greater than 90 percent), meets one or more of the rating criteria above, and documentation is available.
>
> *Moderate*: Documentation shows that the practice is 75 percent to 90 percent effective; or logic indicates that the practice is highly effective, but there is no documentation. Implementation and effectiveness of this practice needs to be monitored and the practice would be modified if necessary to achieve the mitigation objective.
>
> *Low*: Effectiveness is unknown or unverified, and there is little or no documentation; or applied logic is uncertain and practice is estimated to be less than 60 percent effective. This practice is speculative and needs both effectiveness and validation monitoring.

Table 2.4-3 lists other Management Requirements, which would be implemented as a requirement of law, regulation, or policy. Table 2.4-4 presents Other Management Provisions that would be implemented *to protect resources* during construction, operations, and maintenance of the ski area facilities, but which are not intended *to mitigate effects to resources.*

**Table 2.4-2:**
**Mitigation Measures for the White Pass Ski Area Expansion**

The Mitigation Measures identified below would be included in the site plans and construction plans, as appropriate. These plans would be approved by the USFS prior to authorization for construction.

| Mitigation ID | Water and Watershed Resources | Effectiveness | Documentation |
|---|---|---|---|
| MM1 | All proposed stream and wetland crossings by utilities would use aerial crossing structures to prevent direct impacts to stream channels or wetlands. The crossing structures would include a rigid conduit over the jurisdictional limit of the stream and/or wetland and bracing to anchor the conduit in place. Project design would be modified to the extent that a Clean Water Act Section 404 permit would not be required from the Army Corps of Engineers. | High | Section 404 (b) (1) of the Clean Water Act guidelines for sequencing of impacts to Waters of the U. S. (avoidance) |
| MM2 | Water quality monitoring for parameters (e.g., turbidity, pH, temperature.) before, during, and after completion of the project would be performed to ensure that the erosion control practices in the Stormwater Pollution Prevention Plans (SWPPP) are implemented, effective and trigger appropriate responses. | Moderate | Section 402 of the Clean Water Act (National Pollutant Discharge Elimination System) |
| MM3 | Riparian Reserves would be protected to the fullest extent practical by flagging the clearing limits and any trees to be removed in the field, which would be approved by the USFS prior to ground disturbance. Trees cleared would be felled towards stream channels and left on site to provide in-channel LWD and streambank stability. Ski trails crossing streams and Riparian Reserves would be narrowed to minimize future loss of LWD. Riparian understory vegetation adjacent to stream channels would be avoided where possible to maintain bank stability and channel shading. The exception to this would be the new parking lot proposed in Modified Alternative 4, Alternative 6 and Alternative 9, where full clearing would occur. | Moderate | Logic dictates that leaving LWD in Riparian Reserves and stream channels would help to maintain CWD recruitment as compared to removing downed trees from these areas. |
| MM4 | White Pass Company would develop a Spill Prevention and Response Plan, which would be included in the SWPPP as part of the construction documents. Petroleum products would not be discharged into drainages or bodies of water. No fuels or construction machinery would be stored within Riparian Reserves. | Moderate | Section 402 of the Clean Water Act (National Pollutant Discharge Elimination System) |
| MM5 | Bridge crossings installed over intermittent/perennial channels would be completed in a single span to minimize in-water work. All footings would be constructed above the bankfull channel width. Additional short and long-term erosion control measures (e.g., erosion blanket, straw bales, rip-rap) and water quality monitoring (e.g., pH, turbidity) would be specified in the SWPPP for the bridge crossing projects. | Moderate | Section 402 of the Clean Water Act (National Pollutant Discharge Elimination System) |

**Table 2.4-2:**
**Mitigation Measures for the White Pass Ski Area Expansion**

| The Mitigation Measures identified below would be included in the site plans and construction plans, as appropriate. These plans would be approved by the USFS prior to authorization for construction. | | | |
|---|---|---|---|
| MM6 | Culverts would be designed to accommodate 100-year flows, and debris passage. This Mitigation Measure would occur in conjunction with MR2. | High | Follow USFS and WDFW Memorandum of understanding (USFS and WDFW 2003) for all projects in waters on Forest Service lands in the State of Washington. |
| MM7 | Stormwater management facilities would be installed in all proposed parking areas. | Moderate | Section 402 of the Clean Water Act (National Pollutant Discharge Elimination System) |
| MM8 | Wetland impacts would be avoided by maintaining the existing contours and drainage patterns in wetlands that intersect proposed ski trails. Snow bridges would be utilized over the drainages and wetlands for the trail crossings. These conditions would be specified in the project-specific SWPPP. | Moderate | Section 404 (b) (1) of the Clean Water Act guidelines for sequencing of impacts to Waters of the U. S. (avoidance) |
| MM9 | Where clearing is proposed in streams (RIAs) or wetlands, vegetation removal would be conducted by hand/chainsaw. No heavy equipment would operate in streams or wetlands. Trees may be felled away from streams or wetland areas and removed by heavy equipment operating from uplands, provided that no disturbance to streams or wetland soils occurs. Saplings and shrubs, where present, would be maintained at a height of 3 feet above ground to provide thermal shading. | Moderate | Section 404 (b) (1) of the Clean Water Act guidelines for sequencing of impacts to Waters of the U. S. (avoidance) |
| MM10 | Since understory vegetation is naturally limited in closed canopy forests, native shrub and herbaceous species, where available, would be planted within the inner gorge of stream channels in areas where removal of closed canopy forests is proposed, to provide stream shading. | Low | No documentation available for the local area. Logic dictates that shading would be provided by shrubs. |

**Table 2.4-2:**
**Mitigation Measures for the White Pass Ski Area Expansion**

| The Mitigation Measures identified below would be included in the site plans and construction plans, as appropriate. These plans would be approved by the USFS prior to authorization for construction. | | | |
|---|---|---|---|
| **Mitigation ID** | **Geology and Soil Resources** | **Effectiveness** | **Documentation** |
| MM11 | White Pass Company would develop a Travel Route Plan (TRP) for the SWPPP to minimize compaction of soils by limiting equipment to designated travel ways and limiting the number of trips over any given travel corridor (with the exception of over the snow travel). Equipment mobilization would occur over the snow, slash, downed logs, or tree limbs to the extent possible to minimize soil compaction. Other equipment or materials would be flown into the construction site as necessary. Upon the completion of construction, the equipment would leave the construction area over the ground/slash. The SWPPP would specify conditions under which 'over-the-ground' access would be allowed, in the event of low snow cover or poor snow conditions. | Moderate | Refer to Appendix F for a literature review of soil compaction. |
| **Mitigation ID** | **Heritage Resources** | **Effectiveness** | **Documentation** |
| MM12 | Lift towers would be located below ridge high points to minimize potential disturbance of Yakama Tribe spiritual values. | Moderate | Logic dictates that reducing the visual impact to ridgelines would reduce the impact to tribal members viewing the ridgeline. |
| MM13 | A qualified archaeologist would monitor high probability areas during construction activities that involve ground disturbance. | High | Documentation of previous discoveries (Beidl, pers. comm.) |
| MM14 | Tribal members would be afforded an opportunity to monitor construction activities that involve ground disturbance. | Low | unverified |
| **Mitigation ID** | **Recreation** | **Effectiveness** | **Documentation** |
| MM15 | White Pass Company would develop a Boundary Management Plan to manage use of Goat Rocks Wilderness and the area known as the "Grand Couloir" by White Pass skiers. The Boundary Management Plan would include designation of no more than two gated ski area exit points along the boundary between Pigtail Basin and Miriam Basin. The Boundary Management Plan would also include one gated ski area exit point downslope of the expansion area. The plan would also include signage indicating that skiers would be responsible for potential search and rescue costs. A similar Boundary Management Plan has been successful at Mt. Baker Ski Area. | High | Boundary Management Plan monitoring for Mt. Baker Ski area (Mt. Baker-Snoqualmie National Forest data). |

**Table 2.4-2:**
**Mitigation Measures for the White Pass Ski Area Expansion**

| The Mitigation Measures identified below would be included in the site plans and construction plans, as appropriate. These plans would be approved by the USFS prior to authorization for construction. | | | |
|---|---|---|---|
| MM16 | Pacific Crest National Scenic Trail users would be advised of where and when construction activities would be taking place. | Moderate | Naches Ranger District data concerning other trail construction projects and signage (USFS - Naches Ranger District 2004) |
| MM17 | No construction-related helicopter flights would occur during high-use weekends and holidays. | High | National Visitor Use Monitoring data indicate high use periods (USFS 2002c) |
| MM18 | Any danger tree, as defined by federal or state regulations, would be felled and retained onsite. | High | WAC 296-54-505 Federal OSHA, Logging Operations 1910.266 |
| **Mitigation ID** | **Visual Resources** | **Effectiveness** | **Documentation** |
| MM19 | Buildings, towers and terminals would be painted with a color blending with the area. | High | USDA, 1995 |
| MM20 | Clearing, if necessary, for ski trails adjacent to the Pacific Crest National Scenic Trail would be designed to reduce the visual impact by feathering the clearing limits, leaving clumps of vegetation to screen towers, cutting stumps flush to the ground, and not leaving large amounts of woody debris visible from the Trail. | High | USDA, 1995 |
| MM21 | The expanded parking area would be designed to minimize the visual impact from US 12 by leaving existing vegetation along US 12. | High | USDA, 1995 and Visual Simulation (refer to Figure 3-45) |
| MM22 | The replacement of existing facilities (not part of the proposed development), would be similar in character and architecturally compatible with the established landscape (USDA 1990b). Additionally as detailed in USDA 1990a, reconstruction of facilities would comply with the approved site development plan. | High | USDA1990a, 1990b |

**Table 2.4-2:**
**Mitigation Measures for the White Pass Ski Area Expansion**

| The Mitigation Measures identified below would be included in the site plans and construction plans, as appropriate. These plans would be approved by the USFS prior to authorization for construction. | | | |
|---|---|---|---|
| **Mitigation ID** | **Vegetation** | **Effectiveness** | **Documentation** |
| MM23 | Relocating of the Pacific Crest National Scenic Trail would avoid the removal of trees over 8 inches DBH wherever possible to maintain forest structure. The Trail would be constructed to pack and saddle standards (a 24-inch mineral soil tread and 6-foot corridor cleared of trees and woody shrubs). | High | Logic dictates that avoiding trees greater that 8 inches DBH would retain those trees. |

**Table 2.4-3:**
**Management Requirements**

| The Management Requirements identified below would be included in the site plans and construction plans, as appropriate. | |
|---|---|
| **Management ID** | **Water and Watershed Resources** |
| MR1 | Project-specific Stormwater Pollution Prevention Plans (SWPPP) would include additional erosion protection (such as two rows of silt fence, straw bales and/or more permanent structures such as logs) to be provided between streams and construction areas close to stream channels. |
| MR2 | Work would be performed in accordance with HPA specifications. All channel modification proposals would be reviewed and approved by the USFS prior to construction. |
| MR3 | For construction of facilities (except utilities specified in MM1 in Table 2.4-2), if mechanical clearing, grading, excavation, or soil movement is to be performed within a jurisdictional stream or wetland, a Section 404 permit would be obtained from the U.S. Army Corps of Engineers, and a qualified construction monitor would be onsite to ensure that all applicable BMPs are followed as specified in the project-specific Stormwater Pollution Prevention Plan (SWPPP) or permit conditions. |
| **Management ID** | **Geology and Soil Resources** |
| MR4 | Forest clearing in areas susceptible to mass wasting would be minimized to the extent practical during trail layout and construction. The area of grading and soil compaction would be reduced by limiting access by construction equipment and drainage structures for stormwater and erosion control would not divert water into areas of mass wasting potential. |
| MR5 | For projects proposed in Landslide and Talus landtypes and on slopes steeper than 60 percent within landtypes B and C, a qualified engineer or geologist would assist in the final design of ski area facilities to minimize the effects of unstable slopes. |
| **Management ID** | **Vegetation** |
| MR6 | During construction, a USFS botanist, or equivalent specialist, would assist construction crews with layout of project components to avoid locations of threatened, endangered, sensitive, and survey and manage plants. If any new populations of special status plant species are encountered during the construction process, work would be suspended in that area until the USFS botanist is consulted and potential adverse impacts mitigated. |

**Table 2.4-3:**
**Management Requirements**

| The Management Requirements identified below would be included in the site plans and construction plans, as appropriate. | |
|---|---|
| MR7 | Provisions in the Okanogan-Wenatchee National Forests Weed Management and Prevention Strategy and Best Management Practices (USFS 2002b) would be applied to prevent the establishment and spread of noxious weeds (refer to Appendix O). |
| **Management ID** | **Wildlife** |
| MR8 | If the presence of any special status species is determined in the area affected by the Action Alternatives, the Forest Service Biologist, or equivalent specialist, would be immediately notified and management activities altered as appropriate. If any new populations of special status species are encountered during the construction process, work would be suspended in that area until the USFS Biologist is consulted and potential adverse impacts mitigated. |
| MR9 | Evaluation of the requirement for surveys for special status species would be conducted in all areas where suitable habitat is determined by a Forest Service approved biologist. If the presence of these species is determined to be in an area affected by the Action Alternative, the Forest Service Biologist would be immediately notified and management activities altered as appropriate. |
| MR10 | If helicopters are planned for use, seasonal restrictions (March 1 – July 31) would be implemented during the Northern Spotted Owl nesting season if protocol surveys are not current. Seasonal restrictions would not apply if surveys are current and no owls are found. |
| **Management ID** | **Recreation** |
| MR11 | Helicopter operation would be restricted to areas outside designated Wilderness areas. |
| **Management ID** | **Visual Resources** |
| MR12 | Any new buildings would adhere to a Cascadian Architectural theme per the built image guide. |
| MR13 | This space intentionally left blank. |
| **Management ID** | **Land Use** |
| MR14 | Control actions would be initiated when conditions that establish the physical, biological, or social character of the wilderness, as determined by the LAC, are exceeded. |
| **Management ID** | **Air Quality** |
| MR15 | A Dust Control Plan would be obtained from the Yakima Regional Clean Air Authority to prevent and reduce fugitive dust emissions from construction, as per WSR 00-08-007. |
| **Management ID** | **Soil Erosion and Sediment Control** |
| MR16 | Low pressure tires/tracks would be used by all construction equipment to reduce soil compaction. |
| MR17 | No equipment would be allowed to travel over project area during wet conditions as specified in the SWPPP. |

**Table 2.4-4:**
**Other Management Provisions**

| The Other Management Provisions (OMP) identified below would be included in the site plans and construction plans, as appropriate. All OMPs would be approved by the USFS prior to authorization for construction. | |
|---|---|
| **Provision ID** | **Geology and Soil Resources** |
| OMP1 | During construction, potential effects from soil erosion and sedimentation would be minimized by seeding, spreading straw, and/or the use of erosion control blankets on all disturbed areas as soon as possible. Erosion control specifications would be contained in project specific construction plans and the Stormwater Pollution Prevention Plan (SWPPP). The SWPPP would be reviewed and approved by the USFS prior to construction. |
| OMP2 | In graded areas, topsoil would be removed and stockpiled for replacement onto the graded area after construction is completed. During construction, topsoil would be stored using approved erosion and sediment control methods, as described in the SWPPP in order to avoid erosion. Soil would be covered to prevent erosion during inclement weather. |
| OMP3 | Dust abatement measures will be implemented should conditions warrant during construction. This will include periodic watering of dry, exposed soils using the existing White Pass water supply. These measures will be included in the Dust Control Plan described in MR15. |
| OMP4 | If flooding or weather results in detrimental erosion or sedimentation, construction would stop until the conditions improve. These conditions would be specified in the construction plan (SWPPP). |
| **Provision ID** | **Vegetation** |
| OMP5 | White Pass Company would develop Vegetation Management Guidelines in conjunction with the preparation of construction plans. These guidelines would address site stabilization after construction, revegetation procedures, danger tree removal, invasive species management, and vegetation maintenance within the ski area. All guidelines would be developed and approved in conjunction with the USFS. |
| **Provision ID** | **Wildlife** |
| OMP6 | Snags that are identified as danger trees would be felled and retained onsite. |
| OMP7 | Animal proof containers would be used for waste disposal to prevent habituation of wildlife to human food sources. |
| **Provision ID** | **Watershed Resources** |
| OMP8 | No snow grooming would take place within riparian or key watershed areas unless there is a minimum of 3 feet of snow pack. |
| OMP9 | Snow bridges would be utilized at ski trail stream crossings so that culverts and bridges would not be needed. If/when the snow melts a temporary corduroy crossing (felled tree debris) over ephemeral and intermittent streams would be utilized. Snow bridge construction would become an annual winter operation measure. |
| OMP10 | Temporary corduroy crossings (felled tree debris) over intermittent and ephemeral streams would be utilized during construction and removed after the completion of the implementation phase (refer to Table 2.3.1-2 for assumptions). Approval for the technique (based on site specific conditions at the time of construction) would be obtained from the USFS, as specified in the project specific SWPPP. |

**Table 2.4-4:**
**Other Management Provisions**

| The Other Management Provisions (OMP) identified below would be included in the site plans and construction plans, as appropriate. All OMPs would be approved by the USFS prior to authorization for construction. | |
|---|---|
| **Provision ID** | **Recreation** |
| OMP11 | If skier densities on egress trails increase to unacceptable levels, as determined by the White Pass Mountain Manager or the White Pass Ski Patrol during routine operations or ski patrol activities, the Hogback Basin lifts will be closed earlier than the other lifts, to reduce crowding on the egress trails. The timing of these lift closures will be determined during operations to ensure that the objective of the staggered lift closure is met. |

## 2.5 MONITORING

Monitoring of all construction activities would be carried out according to an annual monitoring plan, which would be developed by White Pass and approved by the Forest Service and other involved agencies (e.g., EPA as specified in National Pollutant Discharge Elimination System permitting) prior to implementation. The objectives of the plan would be to monitor the implementation of mitigation, effectiveness of management practices, and validation of the impact analysis. The plan would include monitoring of activities and their effects at the project scale and the watershed scale, as appropriate. This information would be collected and used to take action when necessary.

## 2.6 COMPARISON OF ALTERNATIVES

Table 2.6-1 presents a summary comparison of the White Pass facilities under Alternatives 1, 2, Modified Alternative 4, 6 and 9. Table 2.6-2 compares the environmental consequences of each alternative.

**Table 2.6-1:**
**Comparison of Facilities by Alternative**

| Project Components | Alternative 1 | Alternative 2 | Modified Alternative | Alternative 6 | Alternative 9 |
|---|---|---|---|---|---|
| **SUP area (acres)** | 805[a] | 1,572 | 1,572 | 1087 | 805 |
| **Ski Area Capacity (CCC)** | 2,670 | 4,250 | 3,800 | 3,640 | 3,280 |
| **Lifts** | | | | | |
| **Total Number of Lifts** | 5 | 7 | 7 | 6 | 6 |
| **Ski Terrain** | | | | | |
| Beginner (acres) | 0.5 | 0.5 | 0.5 | 0.5 | 1.9 |
| Novice (acres) | 1.4 | 1.4 | 22.7 | 1.4 | 35.8 |
| Low Intermediate (acres) | 67.7 | 95.1 | 94.6 | 96.5 | 58.9 |
| Intermediate (acres) | 80.9 | 80.9 | 59.7 | 80.9 | 85.6 |
| Advanced Intermediate (acres) | 10.0 | 52.6 | 68.5 | 10.0 | 25.7 |
| Expert (acres) | 51.7 | 51.7 | 51.7 | 51.7 | 51.7 |
| **Total (acres)** | 212.3 | 282.3 | 297.6 | 241.1 | 259.7 |
| **Number of Trails** | 37 | 52 | 55 | 44 | 44 |

**Table 2.6-1:**
**Comparison of Facilities by Alternative**

| Project Components | Alternative 1 | Alternative 2 | Modified Alternative | Alternative 6 | Alternative 9 |
|---|---|---|---|---|---|
| **Nordic System** | | | | | |
| Total Length of Nordic Trail Network (km) | 13.64 | 11.55 | 11.55 | 11.55 | 11.55 |
| Zig Zag Nordic Trail | *Zig Zag* trail not included in this MDP and USFS would no longer authorize after 2007, without adequate site-specific NEPA. | | | | |
| **Snowshoe Trails** | Snowshoe trails not included in this MDP and USFS would no longer authorize after 2007, without adequate site-specific NEPA. | | | | |
| **Facilities** | | | | | |
| New Lodge | No | Yes mid-mountain Hogback Basin | Yes mid-mountain Hogback Basin | Yes mid mountain along Quail trail | Yes mountain top Pigtail Peak |
| Size of Footprint (sq. ft.) | N/A | 2,000 | 2,000 | 2,000 | 3,000 |
| Amenities Provided | Food, Restrooms | | | | |
| ADA Accessible | Yes | Yes | Yes | Yes | Yes |
| New Ticket Booth | No | No | Yes | Yes | Yes |
| New Parking Lot | No | No | Yes | Yes | Yes |
| **Pacific Crest National Scenic Trail** | Trail would remain in current location | Trail would remain in current location | 2,000 feet of trail re-routed to Wilderness boundary | Trail would remain in current location | Realignment of 225 feet of trail |

[a] The current SUP indicates that the permit area is 710 acres. However, GIS analysis indicates that the actual SUP area is approximately 805 acres. As a result of the NEPA process, of which this FEIS is a part, the acreage has been re-calculated based on the best available data.

**Table 2.6-2:**
**Comparison of Environmental Consequences by Alternative**

| Project Components | Alt. 1 (Existing) | Alt. 2 (Impacts) | Modified Alt. 4 (Impacts) | Alt. 6 (Impacts) | Alt. 9 (Impacts) | EIS References |
|---|---|---|---|---|---|---|
| **Climate and Snow (refer to Section 3.1)** | | | | | | |
| Avalanche Control | As needed along the cliffband | Increased on an as-needed basis | Increased on an as-needed basis | Increased on an as-needed basis | No Change | Section 3.1.3.2 |
| Potential Dispersal of Backcountry Skiers to High Avalanche Hazard Areas | No | Yes | Yes | Partial- portions of the Hogback Basin would remain open | No | |
| **Geology and Soils (refer to Section 3.2)** | | | | | | |
| Grading Impacts (acres) | 0.0 | +4.8 | +19.6 | +5.6 | +11.9 | Table 3.2-4 |
| Total Graded Area (acres) | 45.1 (existing) | 49.9 | 64.7 | 50.7 | 57.0 | Table 3.2-1 and Table 3.2-4 |
| Impervious Surface Impacts (acres) | 0.0 | +0.1 | +8.1 | +4.5 | +10.7 | Table 3.2-3 |
| Total Impervious Surfaces (acres) | 35.9 | 36.0 | 44.0 | 40.4 | 46.6 | |
| Detrimental Soil Condition Impacts (acres) | 0.0 | +0.1 | +8.1 | +4.5 | +10.7 | |
| Total Detrimental Soil Conditions (acres) | 45.11 | 45.2 | 53.2 | 49.6 | 55.8 | |
| % of White Pass Study Area with Detrimental Soil Conditions | 2.9% | 2.9% | 3.4% | 3.2% | 3.6% | |
| **Water and Watershed (refer to Section 3.3)** | | | | | | |
| Number of Stream Crossings | | | | | | |
| Aerial Utility | 0 | +11 | +11 | 0 | 0 | Tables 3.3-2, 3.3-10 and 3.3-11 |
| Culverts | 18 | +1 | +11 | +4 | +11 | |
| Fords | 10 | +0 | +0 | +0 | +0 | |

**Table 2.6-2:**
**Comparison of Environmental Consequences by Alternative**

| Project Components | Alt. 1 (Existing) | Alt. 2 (Impacts) | Modified Alt. 4 (Impacts) | Alt. 6 (Impacts) | Alt. 9 (Impacts) | EIS References |
|---|---|---|---|---|---|---|
| Bridges | 0 | 0 | +1 | 0 | +4 | |
| Total Stream Crossings | 28 | 40 | 51 | 32 | 43 | |
| Streams Stability Impacts (miles) | 0.0 | +0.1 | +0.5 | +0.2 | +0.6 | Tables 3.3-6 and 3.3-12 |
| Total Unstable Streambanks (miles) | 1.5 | 1.6 | 2.0 | 1.7 | 2.1 | |
| Wetland Impacts (acres) | 2.3 | +0.1 | +0.1 | +0.1 | +0.1 | Tables 3.3-3 and 3.3-13 |
| Total Wetland Impacts (acres) | 2.3 | 2.4 | 2.4 | 2.4 | 2.4 | |
| Riparian Reserve Impacts(acres) | 0.0 | +17.7 | +25.8 | +12.6 | +24.4 | Table 3.3-14 |
| Riparian Influence Area Impacts (acres) | 0.0 | +2.6 | +5.9 | +1.4 | +11.0 | Table 3.3-16 |
| **Fisheries (refer to Section 3.4)** | | | | | | |
| Fish Presence | None | None | None | None | None | Section 3.4.2 |
| Impacts to Habitat | None | None | None | None | None | Section 3.4.3 |
| **Vegetation (refer to Section 3.5)** | | | | | | |
| Vegetation Community Impacts (acres) | 0.0 | +19.7 | +44.7 | +15.3 | +38.9 | Table 3.5-5 |
| **Wildlife (refer to Section 3.6)** | | | | | | |
| Riparian Reserves Impacts (acres) | 0.0 | +17.7 | +25.8 | +12.6 | +24.4 | Table 3.6-7 |
| Landcover Types within Riparian Reserves | | | | | | |
| Impacts to Forested RR (acres) | 0.0 | +19.1 | +24.8 | +12.6 | +24.3 | Table 3.6-7 |
| Total Forested RR (acres) | 522.7 | 503.6 | 497.9 | 510.1 | 498.3 | |
| Impacts to Modified Herbaceous (acres) | 0.0 | 0 | +1.3 | 0 | 0 | Table 3.6-7 |

**Table 2.6-2:**
**Comparison of Environmental Consequences by Alternative**

| Project Components | Alt. 1 (Existing) | Alt. 2 (Impacts) | Modified Alt. 4 (Impacts) | Alt. 6 (Impacts) | Alt. 9 (Impacts) | EIS References |
|---|---|---|---|---|---|---|
| Total Modified Herbaceous (acres) | 67.5 | 67.5 | 66.2 | 67.5 | 67.5 | |
| **ACS (refer to Section 3.7)** | | | | | | |
| Refer to Table 3.7-3 for summary of Riparian Reserve Standards and Guidelines | | | | | | |
| **Air Quality (refer to Section 3.8)** | | | | | | |
| Exceed 24-hr. $PM_{2.5}$ Standard? | No | No | No | No | No | Section 3.8.2 |
| Exceed 24-hr. $PM_{10}$ Standard? | No | No | No | No | No | |
| Exceed 1-hr. CO Standard? | No | No | No | No | No | |
| **Heritage Resources (refer to Section 3.9)** | | | | | | |
| NRHP Eligible Heritage Resources affected? | No | No | No | No | No | Section 3.9.6.2 |
| Non-eligible Heritage Resources affected? | No | No | No | No | No | |
| NRHP Eligible Traditional Cultural Heritage Resources affected? | No | No | No | No | No | |
| Non-eligible Traditional Cultural Heritage Resources affected? | No | No | No | No | No | |
| **Social Economics (refer to Section 3.10)** | | | | | | |
| Environmental Justice | No disproportionate effects to minority or low income populations | | | | | Section 3.10.3.1 |
| **Employment** | | | | | | |
| Full Time | 18 | +2 | +2 | +1 | +1 | Table 3.10-6 |
| Seasonal | 144 | +24 | +20 | +18 | +12 | |

**Table 2.6-2:**
**Comparison of Environmental Consequences by Alternative**

| Project Components | Alt. 1 (Existing) | Alt. 2 (Impacts) | Modified Alt. 4 (Impacts) | Alt. 6 (Impacts) | Alt. 9 (Impacts) | EIS References |
|---|---|---|---|---|---|---|
| Total | 162 | 188 | 184 | 181 | 175 | |
| **Recreation (refer to Section 3.11)** | | | | | | |
| CCC | 2,670 | 4,250 | 3,800 | 3,640 | 3,280 | Section 3.11.3.1 |
| Number of Lifts | 5 | 7 | 7 | 6 | 6 | Section 3.11.3.2 |
| Number of Trails | 37 | 52 | 55 | 44 | 44 | |
| Nordic Trails (km) | 13.64 | 11.55 | 11.55 | 11.55 | 11.55 | Section 3.11.3.4 |
| Visits in Year 1 | 109,782 | 149,782 | 149,782 | 123,782 | 115,782 | Table 3.11-4 |
| Visits in Year 5 | 115,382 | 157,422 | 157,422 | 130,096 | 121,688 | |
| Visits in Year 10 | 121,268 | 165,453 | 165,453 | 136,732 | 127,895 | |
| PCNST | No Change | Chairlift over the PCNST would cause a break in experience | PCNST Re-route in view of Chairlift Terminal | Chairlift over the PCNST would cause a break in the experience | PCNST re-alignment outside of ski trail in existing SUP Area | Section 3.11.3.6 |
| **Transportation (refer to Section 3.12)** | | | | | | |
| Parking (visitors/ vehicles) | 2,890 / 1,109 | 4,250 / 1,700 | 3,800 / 1,505 | 3,640 / 1,435 | 3,280 / 1,279 | Table 3.12-FEIS1 |
| Unpaved Road Length (miles) | 6.2 | 6.2 | 6.2 | 6.55 | 6.2 | Tables 3.12-1 and 3.12-2 |
| Paved Road Length (miles) | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | |
| Total Road Length (miles) | 6.7 | 6.7 | 6.7 | 7.05 | 6.7 | |
| Road Density (mi/sqmi) | 2.7 | 2.7 | 2.7 | 2.87 | 2.7 | |
| US. 12 LOS | LOS B | LOS C | LOS C | LOS C | LOS C | Section 3.12.3 |
| **Utilities (refer to Section 3.13)** | | | | | | |
| Power (kW) | Transformer: 2,970; Lines: 1,550 | 4,000 | 4,000 | 3,500 | 3,500 | Sections 3.13.2.3 and 3.13.3 |

**Table 2.6-2:**
**Comparison of Environmental Consequences by Alternative**

| Project Components | Alt. 1 (Existing) | Alt. 2 (Impacts) | Modified Alt. 4 (Impacts) | Alt. 6 (Impacts) | Alt. 9 (Impacts) | EIS References |
|---|---|---|---|---|---|---|
| Peak Water Demand (gallons/day) | 12,561 | 23,001 | 20,566 | 19,700 | 17,751 | Table 3.13-3 |
| Wastewater | Existing Treatment facility; design capacity 12,000 GPD | Mid-Mountain Treatment facility and drainfield; at base area possible equalization and/or drainfield | Mid-Mountain Treatment facility and drainfield; at base area possible equalization and/or drainfield. | Existing Treatment facility with Holding Tanks; at base area, possible equalization and/or drainfield. | Existing Treatment facility with Holding Tanks; at base area, possible equalization and/or drainfield. | Sections 3.13.2.6 and 3.13.3 |
| New Structures | None | Mid Mountain Lodge | Mid Mountain Lodge and Ticket Booth | Mid Mountain Lodge and Ticket Booth | Mountain Top Lodge and Ticket Booth | Section 3.13.3 |
| **Inventoried Roadless Areas (refer to Section 3.14)** | | | | | | |
| Inventoried Roadless Areas | No Change | Development within 767 acres of the White Pass IRA would disqualify this portion of the IRA from placement on the inventory of potential wilderness areas. | Development within 767 acres of the White Pass IRA would disqualify this portion of the IRA from placement on the inventory of potential wilderness areas | Development within 282 acres of the White Pass IRA would disqualify this portion of the IRA from placement on the inventory of potential wilderness areas. | The portion of the Goat Rocks Adjacent IRA within the SUP area no longer qualifies for placement on the inventory of potential wilderness areas. Further development would have no effect. | Section 3.14 |

**Table 2.6-2:**
**Comparison of Environmental Consequences by Alternative**

| Project Components | Alt. 1 (Existing) | Alt. 2 (Impacts) | Modified Alt. 4 (Impacts) | Alt. 6 (Impacts) | Alt. 9 (Impacts) | EIS References |
|---|---|---|---|---|---|---|
| **Visual Resources (refer to Section 3.15)** | | | | | | |
| VQO/SIL | | | | | | |
| Viewpoint #1 | Retention/ High | Retention/ High | Retention/ High | Retention/ High | Retention/ High | Section 3.15.3 |
| Viewpoint #2 | Retention/ High | Retention/ High | Retention/ High | Retention/ High | Retention/ High | |
| Viewpoint #3 | Retention/ High | Retention/ High | Retention/ High | Retention/ High | Retention/ High | |
| Viewpoint #5 | Retention/ High | Retention/ High | Retention/ High | Retention/ High | Retention/ High | |
| Viewpoint #6 | Retention/ High | Retention/ High | Retention/ High | Retention/ High | Retention/ High | |
| Viewpoint #7 | Retention/ High | Retention/ High | Retention/ High | Retention/ High | Retention/ High | |
| **Noise (refer to Section 3.16)** | | | | | | |
| Maximum Noise Levels during construction at a distance of 50 feet | N/A | 93 dBA | 93 dBA | 93 dBA | 93 dBA | Section 3.16.2 |
| Effect of Operations | Similar to operations today (Year 2007). | Similar to operations today (Year 2007) with a slight increase in noise due to increased traffic and facilities. | Similar to operations today (Year 2007) with a slight increase in noise due to increased traffic and facilities. | Similar to operations today (Year 2007) with a slight increase in noise due to increased traffic and facilities. | Similar to operations today (Year 2007) with a slight increase in noise due to increased traffic and facilities. | |

Note: Totals may vary due to rounding