THE SUMMIT-AT-SNOQUALMIE
MASTER DEVELOPMENT PLAN PROPOSAL
FINAL ENVIRONMENTAL IMPACT STATEMENT

EXECUTIVE SUMMARY

1.0 PROPOSED ACTION

Ski Lifts Inc. has submitted The Summit-at-Snoqualmie Master Development Plan (MDP) (Sno.engineering 1998) for acceptance by the United States Forest Service (USFS); the MDP is disclosed as the Proposed Action in this FEIS. The Proposed Action (see Figures 1.1.2-1, Alternative 2 Proposed Conditions – The Summit, and 1.1.2-2, Alternative 2 Proposed Conditions - Alpental) includes the removal and installation of additional chair and surface lifts; development of a restaurant and year-round gondola at Alpental; creation of additional ski terrain within the existing Special Use Permit (SUP) boundary; as well as expanded night skiing at Summit Central and Alpental. In addition, the Proposed Action includes the expansion and creation of day lodges, maintenance facilities, and utilities to support ski area operations and other recreational opportunities. The project also includes the implementation of the Implementation, Operation, Restoration and Monitoring Plan (Appendix F). This plan includes restoration projects, monitoring guidelines, road and facility construction and maintenance guidelines to guide ski area development and operation for the life of the MDP. The Proposed Action also includes a proposed, non-significant (under the National Forest Management Act [NFMA]) forest plan amendment to adjust the SUP boundary to include Hyak Creek and the egress area at the top of the *Silver Fir* chairlift (total of 53 acres) to provide for more appropriate egress trails between Summit East and Summit Central. The proposed amendment would also incorporate the existing cross-country hut at Grand Junction (an additional 0.01 acre, approximately 500 feet west of Hyak Lake) into the SUP. The Forest Plan amendment would also include reallocating a total of 433.01 acres of OWNF lands from AMA (ST-1 - Scenic Travel) to AMA (RE-1 - Developed Recreation). These lands include 380 acres in the existing SUP area, 53 acres in the SUP adjustment, and 0.01 acre at the existing cross-country warming hut.

If implemented, the Proposed Action would increase the Comfortable Carrying Capacity (CCC) of The Summit from 8,140 to 10,710 skiers.[1] The CCC at Alpental would increase from 1,880 to 2,920 skiers.

[1] The Comfortable Carrying Capacity (CCC) of a mountain resort is the number of skiers an entire resort can *comfortably* accommodate at any given time and still guarantee a pleasant recreation experience. A resort's CCC does not reflect the number of skiers on the mountain at one time. Generally, 70 to 85 percent of a mountain's total CCC will be active skiers, including those on the trails, riding lifts, and waiting in lift lines. The remaining 15 to 30 percent will be using guest service facilities or milling in areas near these facilities. It is common for ski areas to exceed their CCC during peak visitation times throughout the year (i.e., Thanksgiving, Christmas, New Year, etc.). The peak day capacity (110% of the CCC) is used to help design more critical aspects of the mountain resort (i.e., sewer system, water treatment and storage capacity, etc.) during peak visitation periods (10-15 days/year).

2.0 PURPOSE AND NEED FOR ACTION

The purpose for the MDP proposal is to ensure the long-term economic viability of The Summit-at-Snoqualmie (particularly Summit East), to maintain and/or enhance environmental resources, and provide for the public quality recreational opportunities in a natural outdoor setting on NFS lands, consistent with the Forest Plans for the Mt. Baker-Snoqualmie National Forest (MBSNF) and Okanogan-Wenatchee National Forest (OWNF), other federal laws and regulations, other agency direction, and The Summit-at-Snoqualmie SUP.

There is a need to improve circulation between Summit East, Summit Central and Summit West and increase skier circulation efficiency at the ski areas. There is also a need to improve the quality of the skiing experience, including improving skier circulation, existing skier support services and facilities. In addition, there is a need and an opportunity to restore and/or maintain the Upper South Fork Snoqualmie River and Coal Creek watersheds, consistent with the direction in the Forest Plans of MBSNF and OWNF (see below for further elaboration of the need for action).

The purpose or objective of the Proposed Action is maintaining and/or enhancing environmental resources and providing the public quality recreational opportunities in a natural outdoor setting on NFS lands, consistent with the direction in the Forest Plans of the MBSNF and OWNF. The basis for accomplishing this is contained in federal laws and Forest Service policy directives; the *MBSNF Forest Plan, as Amended*; the *WNF Forest Plan, as Amended*; and The Summit-at-Snoqualmie SUP. These documents also provide the USFS the authority and direction pertaining to ski area management on NFS lands. The Summit-at-Snoqualmie's purpose focuses on improving the quality of the skiing experience. The Proposed Action would accomplish this by improving upon existing skier circulation, and improving existing skier support services and facilities.

The USFS and The Summit-at-Snoqualmie are connected through a committed long-term partnership to provide quality recreation opportunities on NFS lands. By satisfying their current and future visitors, The Summit-at-Snoqualmie would remain a healthy and competitive ski resort. This would help fulfill USFS policy, objectives, and management direction for ski areas as outlined on pages 4-277 and 4-278 of the *MBSNF Forest Plan* (Management Area 27D), page 4-159 of the *WNF Forest Plan* (RE-1) and page 144 of the Alpine Lakes Area Land Management Plan (DR) (which was incorporated unchanged into the *MBSNF Forest Plan*).

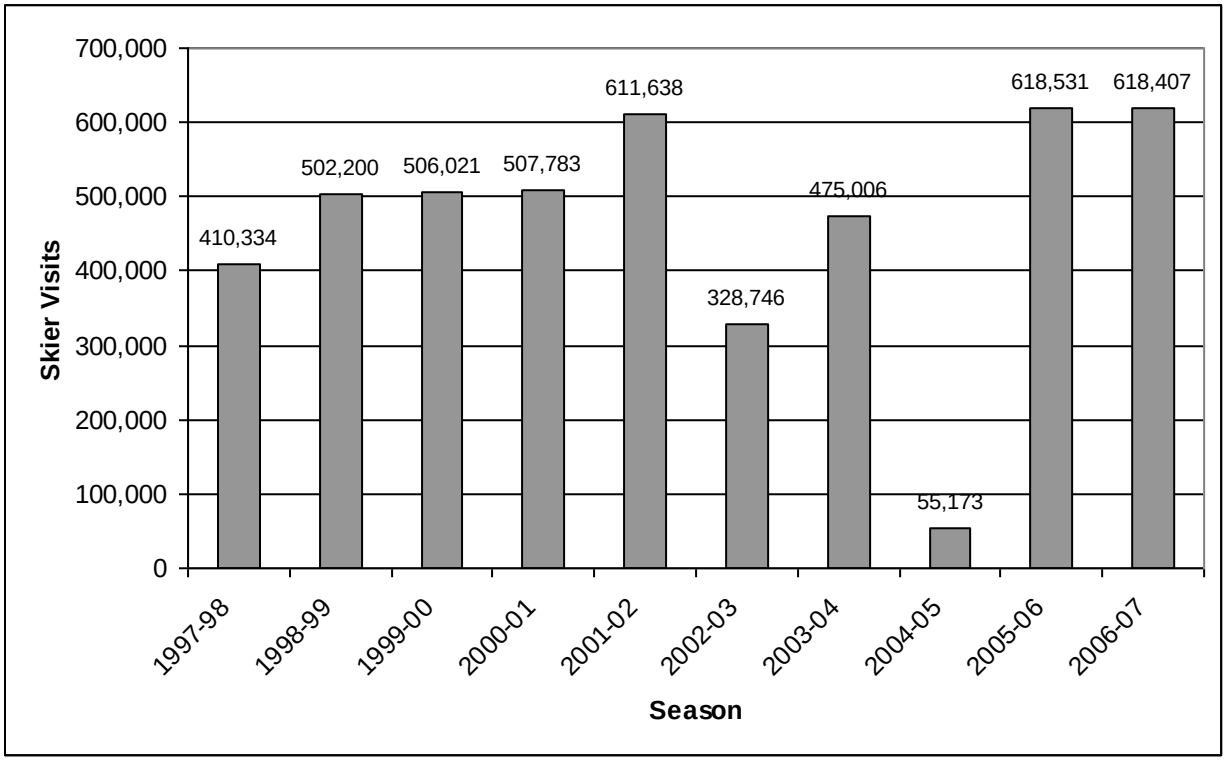
In the following discussions, the need for action is described in detail, along with a summary of how proposed projects would address each need.

There is a need to improve circulation and dispersal of skiers and other site visitors in and out of the base area, and throughout the ski area

A majority of the development at The Summit occurred while Summit East, Summit Central and Summit West were owned and operated by three separate entities. As a result, the individual ski areas were not designed to provide easy access to visitor service facilities throughout the ski area or facilitate skier circulation between the ski areas. An unintended consequence of the physical constraints and facility limitations related to the independent growth of The Summit base areas has been base area congestion. Base area congestion diminishes the efficiency of out-of-base access, and creates on-mountain congestion which ultimately reduces the amount of time spent on the mountain.

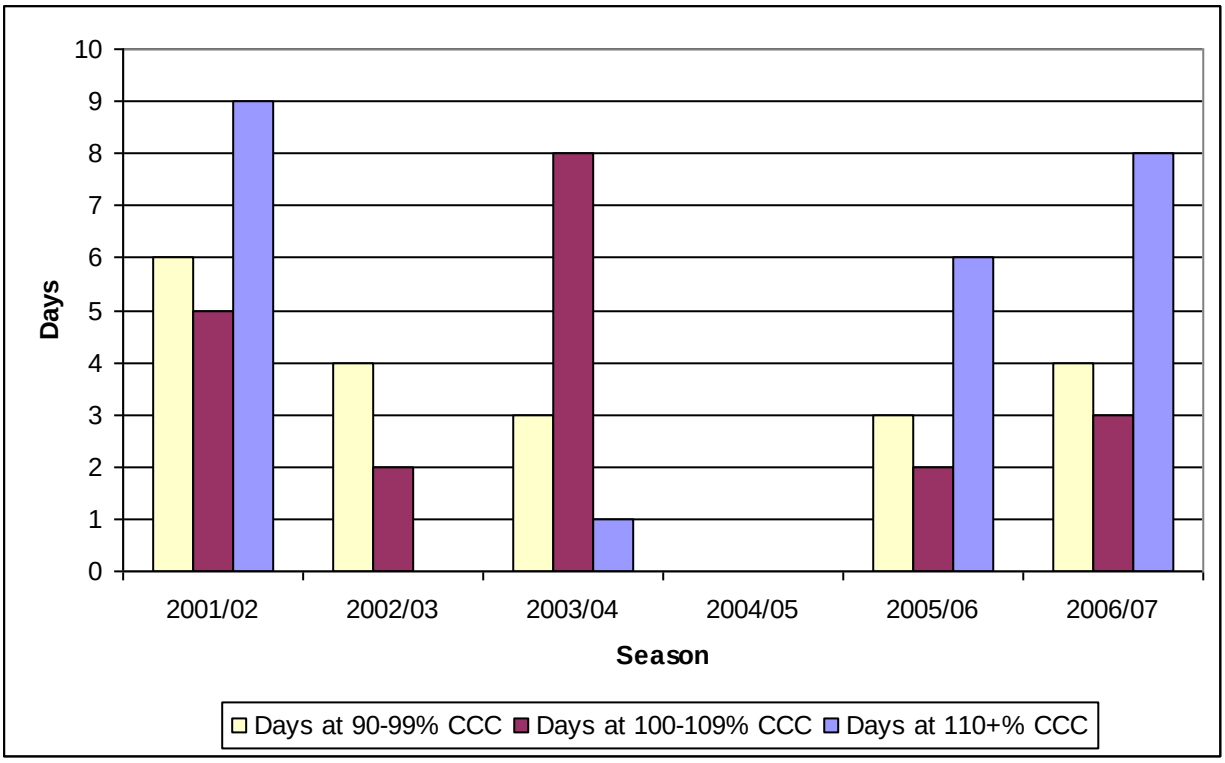
During the 1997/98 ski season, The Summit-at-Snoqualmie exhibited over 410,334 visits. Since that time, annual visitation has increased, as demonstrated by the ten-year average of 463,384 annual visits (PNSAA 2007). Illustration S-1 presents the growth in annual visitation at The Summit-at-Snoqualmie between 1997/98 and 2006/07. The steady growth in demand for alpine skiing at The Summit-at-Snoqualmie has resulted in larger crowds, longer lift line wait times, and more crowded slope conditions. Illustration S-2 depicts the number of days at or near capacity at The Summit-at-Snoqualmie between 1996/97 and 2006/07.

Illustration S-1:
Skier Visitation at The Summit-at-Snoqualmie 1997/98-2006/07



Source: PNSAA 2007

Illustration S-2:
Above and Near-Capacity Visitation at The Summit-at-Snoqualmie (2001/2002 – 2006/2007)



Ski Lifts, Inc. 2007

With national visitation on the rise after a relatively flat period during the 1990s, and with the Pacific Northwest meeting or exceeding visitation records in the early 2000s (NSAA 2007), continued growth in demand for skiing at The Summit-at-Snoqualmie is expected. Because the current ski area facilities have become overcrowded on peak days (i.e., weekends and holidays), The Summit-at-Snoqualmie has a need for additional facilities to better serve the current and anticipated growth in demand.

There is a need to create on-mountain visitor service capacity as no on-mountain visitor service facilities exist at The Summit-at-Snoqualmie. The need to provide additional visitor service capacity would be met through upgrades to the existing visitor service facilities and/or construction of new guest service facilities to increase visitor service capacity. Under the Proposed Action, these facilities would be designed to complement The Summit-at-Snoqualmie's overall CCC and located so they accommodate the distribution of CCC throughout the various base areas and on-mountain facilities. The construction of the mountain-top restaurants in conjunction with improved crossover trails would improve dispersal of skiers and other site visitors in and out of the base area, and throughout the ski area.

There is a need to correct deficiencies in the lift network and facility conditions as several lifts and facilities at The Summit are old, inefficiently aligned and located, and reduce the quality of the recreation experience. Some lifts (e.g., *Triple 60* at Summit Central) are old and frequently break down, creating

long lift lines and long lift rides. Poorly aligned chairlifts require skiers to hike up-hill in order to reach bottom terminals, cause skiers to cross active runs in order to reach lift terminals or base facilities, and impede skier circulation, causing crowding and long lift lines.

The existing beginner terrain at The Summit-at-Snoqualmie includes terrain at Summit West, Summit Central, and Alpental with slope gradients that are too steep for beginners (e.g., *Little Thunder*). The ski industry estimates that 85 out of 100 first-time skiers do not return to the mountain a second day (NSAA 2007), therefore enhancing the first-time beginner experience is an important need for The Summit-at-Snoqualmie. Under the Proposed Action, the lifts serving beginner terrain at Summit West would be realigned to provide more appropriate slope gradients and fall-lines, and at Summit Central, the proposed *Ski School* chairlift would provide out-of-base access to beginner terrain from the resort core.

With national and local market data indicating that there is an ever-increasing level of customer awareness of quality, service, and value in the ski experience, improvements are needed to increase circulation within the base area and dispersal of skiers throughout the resort. Maintenance of customer satisfaction in these areas would better ensure visitation, thereby allowing The Summit-at-Snoqualmie to maintain economic viability and its competitive position relative to other Puget Sound ski areas.

New and re-aligned lifts, in conjunction with upgrading existing facilities and construction of proposed facilities are needed to increase the out-of-base efficiency of the ski area and reduce on mountain congestion.

There is a need to maintain the viability of Summit East by consolidation with Summit Central and Summit West

Summit East, the oldest ski facility at Snoqualmie Pass, has been operated intermittently since the 1930s by different owners and managers. Over the past 35 years, Summit East has failed to achieve its full potential, primarily due to undercapitalization, lack of skiable access to Summit Central and the turnover of ownership prompted by several bankruptcies.

There is a need to integrate Summit East with Summit Central and Summit West by installing strategically designed and placed lifts, connector trails, and guest service facilities. The Proposed Action addresses this need with the *Rampart* and *Creek Run* lifts and associated trails, as well as expanded guest service facilities at the Silver Fir base area, new lifts and ski terrain at Summit East, and a proposed cross-over trail for increased skier connectivity between Summit East and Summit Central. Crossover trails would be designed to improve skier circulation between Summit East and Summit Central, which would allow for a wider spectrum of guests to traverse between the resorts.

Interconnectivity of base areas would help balance the utilization of the resort's terrain and facilities (including enhanced use of Summit East), improve operational efficiency, and would diversify the recreational experience.

There is a need to balance the capacities of skier service facilities and lift/trail capacities

Guest Services/Building Space

Visitor service facilities should be designed to complement The Summit-at-Snoqualmie's overall CCC, and located so they accommodate the distribution of CCC throughout the various base area portals and on-mountain focal points. As previously discussed, the existing guest services and building space at The Summit reflect the time when the ski areas operated independently of each other. As a result, skier access to guest services across The Summit is limited due to an absence of on-mountain facilities and a lack of primary core areas for guest services. In addition, with the majority of guest services provided in numerous buildings within the current base areas of Summit Central and Summit West, base area crowding occurs during the morning arrival and at lunch time. Visitor service capacity (i.e., day lodge, restaurant, bar, equipment/locker rentals) at The Summit is below industry standards, overall representing about 81 percent of standard design criteria and industry averages for a resort of The Summit-at-Snoqualmie's size, market orientation and capacity (Sno.engineering 1997). There is a need for additional space to balance with the capacities of the lifts and terrain. The need to provide additional visitor service capacity could be met through the expansion of existing visitor facilities and/or construction of new visitor services buildings in balance with the visitor capacity at The Summit.

The Proposed Action addresses this need through improvements in skier circulation at The Summit (e.g., the installation and realignment of high-speed lifts coupled with improved crossover trails), which creates the opportunity to consolidate base area operations into two primary core areas (Summit West and Summit Central) and one secondary core area (Silver Fir). This consolidation has three principal benefits: (1) guests would have all services available to them at both primary base areas; (2) first-time guests would find the layout more understandable; and (3) the resort would realize operational efficiencies, which would result from more tightly grouped facilities. In order to provide enhanced skier circulation, the Proposed Action includes the construction of on-mountain facilities at Summit West (renovation of the existing Thunderbird Lodge) and a proposed mountain-top restaurant at Summit East.

At Alpental, a commensurate increase in visitor service facilities would be required in the base area and on the mountain-top, in order to accommodate and distribute the increase in CCC. The Proposed Action addresses this through upgrades to facilities including construction of a visitor service building north of the Denny Mountain Lodge, and a new mountain-top restaurant at the upper terminal of the proposed *Pulse Gondola*.

Vehicular Circulation, Parking, and Shuttle Services

The Summit-at-Snoqualmie currently provides parking capacity for approximately 12,346 people at one time, which is lower than the total parking requirement, including the existing ski area CCC of 10,020, a capacity of 500 Nordic skiers, and 2,500 tubing area guests (a total of 13,020). In addition, The Summit-at-Snoqualmie realizes undocumented use by people who park at the area but do not purchase tickets,

which further exacerbates the parking shortage. Improvements to The Summit-at-Snoqualmie would increase the capacity, thereby exacerbating the current shortage of parking.

In order to address this need, approximately 9.8 additional acres of parking would be created at Summit West, the Silver Fir base area, and Summit Central adjacent to the existing Summit Tubing Center. Due to the lack of guest services at Summit East, shuttle service would be available to transport guests from Summit East to other portals. Proposed crossover trails between Summit East and Summit Central are intended to reduce reliance on shuttle services between base areas, as compared to the existing condition.

The Alpental parking lots are parked out during weekends and holidays, requiring visitors in lot 6 to walk over 1,200 feet to access base area facilities and chairlifts. During parked out conditions, Alpental skiers are required to park at The Summit and ride the shuttle to Alpental. The result for Alpental visitors is an impact on both the arrival and departure guest experience at Alpental. While no expansion of parking is proposed, the need for vehicle circulation and reduced walking distance is addressed by a guest drop-off area at Alpental. By providing for enhanced skier connectivity at The Summit, the Proposed Action would reduce the reliance of shuttle buses for access between The Summit areas, thereby allowing for more efficient shuttle service between The Summit and Alpental.

There is a need to provide a convenient and quality recreation experience for all site visitors on a year-round basis

Alpine Terrain

Skier circulation at The Summit is poor, with ill-defined trail boundaries and routes to chairlifts/facilities, largely due to the lack of trees and surrounding vegetation. Separation between beginner areas/trails and more advanced terrain is also poor and skiers are often required to traverse across active ski trails to reach their destination at Summit Central and Summit West. Both areas would benefit from reforestation, including the establishment of tree islands, which play an important role in controlling skier circulation patterns, disguising light poles and other on-mountain facilities, while increasing a guest's psychological sense of speed.

The Summit-at-Snoqualmie experiences deficiencies in the lift network and facility conditions as several lifts and facilities are old, inefficiently aligned and located, and reduce the quality of the recreation experience. Some lifts (e.g., *Triple 60* at Summit Central) are old and frequently break down, creating long lift lines and long lift rides. Poorly aligned chairlifts require skiers to hike up-hill in order to reach bottom terminals, cause skiers to cross active runs in order to reach lift terminals or base facilities, and impede skier circulation, causing crowding and long lift lines. These conditions reduce the quality of the recreation experience available to visitors of The Summit-at-Snoqualmie.

As previously discussed, the existing beginner terrain at The Summit-at-Snoqualmie includes terrain at Summit West with slope gradients that are too steep for beginners (e.g., *Little Thunder, Holiday*) and

access to the beginner areas requires long walks from base area facilities. The Proposed Action addresses this need by realigning the lifts serving beginner terrain at Summit West to provide more appropriate slope gradients and fall-lines, and at Summit Central the proposed *Ski School* chairlift would provide out-of-base access to suitable beginner terrain from the resort core.

Trails 49 and 71 are currently used by skiers to traverse from Summit Central to Summit East and Summit East to Summit Central, respectively. Skiers must pole along the low-gradient portions of the trails and snowboarders often have to remove their equipment in order to traverse between Summit Central and Summit East. The relative inaccessibility of Summit East reduces skier interest in the Summit East facilities and the Summit East facilities remain underutilized, as compared to Summit Central and Summit West. There is a need for improved convenience in accessing Summit East from Summit Central. The Proposed Action addresses this need through terrain upgrades at Summit East and providing development of new lifts and trails between Silver Fir and Summit East.

Throughout The Summit ski areas, intermediate and advanced intermediate terrain is lacking, mainly as a result of the steepness of the upper trail system (expert terrain) and the lower slope gradients along the lower terrain (beginner to low intermediate terrain). There is a need to provide more intermediate to advanced intermediate terrain. The introduction of lift-served terrain in the *Rampart* and *Creek Run* pods would address the deficit of intermediate and advanced-intermediate terrain. The *Rampart* and *Creek Run* pods would provide the most consistent fall-line intermediate and advanced-intermediate terrain throughout The Summit-at-Snoqualmie.

At Alpental, skiers wishing to ski the Internationale bowl are required to ride two lifts and to cross through lower level terrain to access the bottom terminal of the *Armstrong Express*. As a result, the bottom of Alpental is often crowded and lift line wait-times are excessive. The Proposed Action includes upgrades to the lift system to provide greater separation and appropriate slope gradients for skiers of all ability levels. Development of a lift in Internationale bowl would provide round-trip skiing in this portion of the existing SUP area, thereby eliminating the need to access the bottom terminal of *Armstrong Express* or the need to ride two lifts to access the bowl.

Scenic Gondola Rides

The Summit-at-Snoqualmie currently does not provide a formal summer recreation program, particularly for elderly or physically challenged guests, or guests with small children. There is a need to improve year-round use of the area to better comply with USFS Management direction and to provide revenue during the non-skiing season. The proposed *Pulse Gondola* at Alpental would provide an opportunity for elderly and physically challenged guests and families with small children to access Alpental's upper elevation environment. An ADA-accessible trail near the proposed mountain-top restaurant would provide the opportunity for educational and interpretive signage including information regarding the

importance/delicacy of high elevation ecosystems, avalanche science and the behavior of snowpack, volcanology, and historical human use of the Snoqualmie Pass area.[2]

Management guidelines outlined in the MBSNF Forest Plan encourage "year-round recreation use at winter-sports sites" and support the permitting of "summer facilities that are compatible with or enhance natural resource-based recreation opportunities and in keeping with the ROS" (USDA 1990a). The need for accessible year-round recreation use at The Summit-at-Snoqualmie is also supported by the MBSNF Forest Plan's goal for the Forest to be "responsive to a greater diversity of Forest customers by emphasizing the needs of the very young and old, the disabled, and those of culturally and economically diverse backgrounds" (USDA 1990a).

There is a need to implement restoration projects to help improve the watershed condition

Lands at The Summit-at-Snoqualmie have been impacted by historic land use, including wildfire, mass wasting, floods, timber harvest, earth grading, and facility development. The multiple, sometimes conflicting uses on land within the watershed has become one of the greatest challenges to ecosystem management on a watershed or landscape scale today.

If the Proposed Action is selected, the *Implementation, Operation, Restoration, and Monitoring Plan* (Appendix F) would be implemented to restore previously disturbed areas and help maintain or improve the health of the aquatic and riparian ecosystems within the Upper South Fork Snoqualmie and Coal Creek watersheds in order to be consistent with Forest Plan Standards and Guidelines. Specific watershed restoration projects discussed in this plan include slope stabilization projects, stream and wetland restoration projects, revegetation projects and road decommissioning (see Appendix F).

There is a need to amend the WNF Forest Plan to correct the SUP boundaries and allocations within the existing SUP boundary for more efficient administration

Prior to the acquisition of the ski area by Ski Lifts, Inc., Ski Acres and Hyak ski areas operated under separate SUPs that provided separate operations. The SUP areas were separated by Hyak Creek, which was not included in either permit area. With the purchase of Hyak (Summit East) and Ski Acres (Summit Central) by Ski Lifts, Inc., the ski area operations were no longer separate (see Figure 1.1.1-FEIS-3, Existing Private Land Ownership and Zoning and Figure 1.1.1-FEIS-2, Existing NFSL Allocation). An amendment to the *WNF Forest Plan* is needed to incorporate the entire area along Hyak Creek between Summit East and Summit Central into the USFS SUP because this area includes ski trails and other facilities that are connected to ski area operation.

The existing crossover trail leading from Summit East to Summit Central does not yield suitable slope gradients for snowboarders and novice skiers to traverse from East to Central. Portions of the existing trail are either up-hill or too flat to accommodate the full range of skier abilities at The Summit. In

[2] The trail would comply with the standards and guidelines established by the Americans with Disabilities Act.

addition, the existing crossover trail is a multi-use trail, used by snowshoers traveling in either direction. A new crossover trail, located to the west and south of the existing SUP boundary, is needed to utilize more appropriate slope gradients for both skiers and snowboarders traversing from Summit East to Central. The terrain needed for such a trail is outside of the current SUP area so the terrain would need to be incorporated into the SUP and land allocation.

The existing cross-country hut is located on OWNF lands which were acquired by the USFS during the Plum Creek Land Exchange. Although cross-country skiers currently use the hut, the location of the hut has not been allocated as AMA (RE-1). A Forest Plan amendment is needed to re-allocate the site (0.01 acre) to RE-1 to be consistent with the use of the facility.

Within the existing SUP area, 380 acres of OWNF lands are allocated to AMA (ST-1), which is not consistent with their inclusion in the ski area SUP boundary and the presence/operation of ski area facilities within them. A Forest Plan amendment is needed to re-allocate the lands to AMA (RE-1) to be consistent with the inclusion of the lands in the SUP area.

3.0 ALTERNATIVES

3.1 ALTERNATIVE 1 - NO ACTION

As required by NEPA, a No Action Alternative is included in this FEIS as a benchmark against which the Action Alternatives can be compared (Figures 2.3.2-1, Alternative 1 Existing Conditions – The Summit, and 2.3.2-2, Alternative 1 Existing Conditions - Alpental). The No Action Alternative also serves as a means of analyzing the effects of no future development within the Project Area, beyond that which has already been approved.

Under Alternative 1, The Summit would continue to operate 20 lifts (16 chairlifts and 4 surface lifts) on approximately 545 acres of formal terrain while Alpental would have 5 lifts (4 chairlifts and 1 surface lift) serving approximately 206 acres of terrain. The Summit would have a CCC of 8,140 skiers and Alpental's CCC would be 1,880 skiers. This would give The Summit-at-Snoqualmie 25 operating lifts on approximately 751 acres of terrain and a CCC of 10,020 skiers.

Action Alternatives Considered in the FEIS

Four Action Alternatives are considered in the FEIS. Table S-1 presents a summary of the Action Alternatives against Alternative 1.

Table S–1:
The Summit-at-Snoqualmie Master Development Plan FEIS Range of Alternatives

Master Plan Components	Alt 1	Alt 2	Alt 3	Alt 4	Mod Alt 5
Alpine Ski Area Capacity for The Summit (CCC)	8,140	10,710	9,990	9,360	10,710
Alpine Ski Area Capacity for Alpental (CCC)	1,880	2,920	2,620	2,920	3,220
Night Skiing Capacity for The Summit (CCC)	6,210	9,870	9,870	9,240	9,870
Night Skiing Capacity for Alpental (CCC)	1,550	2,170	2,170	2,170	2,170
SUP Area (acres)	1,834	1,886	1,851	1,851	1,886
Peak Nordic Skier Capacity (number)	500	500	500	500	500
Peak Tubing Capacity (number)	2,500	2,500	2,500	2,500	2,500
Total Number of Magic Carpets for The Summit	1	2	2	2	2
Total Number of Chairlifts for The Summit	16	18	17	16	18
Total Number of Surface Lifts for The Summit	3	2	2	2	2
Total Number of Magic Carpets for Alpental	0	1	1	1	1
Total Number of Chairlifts for Alpental	4	6	5	6	6
Total Number of Surface Lifts for Alpental	1	0	0	0	0
Number of Trails for The Summit	70	80	75	75	80
Number of Trails for Alpental	25	27	27	27	27
Formal Ski Terrain for The Summit (acres)	545	599	551	554	593
Formal Ski Terrain for Alpental (acres)	206	217	217	217	217
Formal Night Skiing Terrain for The Summit (acres)	420	544	543	544	545
Formal Night Skiing Terrain for Alpental (acres)	95	112	112	112	112
Food Service Seats for The Summit	1386	4,234	4,234	4,234	4,234
Food Service Seats for Alpental	528	813	528	813	813
Roads (miles)	18.5	18.1	18.1	17.9	18.1
Parking – The Summit (acres)	39.6	49.4	49.4	49.4	49.4
Parking – Alpental (acres)	7.8	7.8	7.8	6.9	7.8
Total Parking (acres)	47.4	57.2	57.2	56.3	57.2
Forest Plan Amendment – Adjust SUP Boundary	No	Yes	Yes	Yes	Yes
Land Donation - 390 acres	No	No	Yes	No	Yes

3.2 ALTERNATIVE 2 - PROPOSED ACTION

Alternative 2, as shown in Figures 2.3.3-1, Alternative 2 Proposed Conditions – The Summit and 2.3.3-2, Alternative 2 Proposed Conditions - Alpental, represents the Proposed Action. Alternative 2 includes the most of the components of the original 1998 MDP. In response to IDT concern and scoping issues, several components of the 1998 MDP were modified or eliminated. A discussion of the modifications made to the MDP, and the rationale for the modifications can be found in Section 1.2 of Appendix A – Alternatives Considered and Modifications to The Summit-at-Snoqualmie MDP.

Under Alternative 2, The Summit's CCC would increase from 8,140 (as in the No Action Alternative) to 10,710 and Alpental's CCC would increase from 1,880 to 2,920. This is an increase of approximately 36

percent, or 3,610 skiers for the entire resort. The increased capacity would be achieved through the replacement of existing lifts, installation of new lifts, development of new ski terrain and construction of additional support facilities.

Forest Plan Amendment #27: Alternative 2 would include a non-significant (under NFMA) Forest Plan amendment, which would add a total of approximately 53 acres to the SUP area, including Hyak Creek, the egress area at the top of the *Silver Fir* chairlift (in Sections 16 and 17), and the cross-country hut at Grand Junction (approximately 500 feet west of Hyak Lake, occupying roughly 0.01 acre).[3]. The expansion would incorporate Hyak Creek into the SUP area and provide for construction and use of the proposed crossover trails between Summit East and Summit Central. The Forest Plan amendment would also reallocate a total of 433.01 acres of OWNF lands from AMA (ST-1 - Scenic Travel) to AMA (RE-1 - Developed Recreation). These lands include 380 acres in the existing SUP area, 53 acres in the SUP adjustment, and 0.01 acre at the existing cross-country warming hut.

3.3 ALTERNATIVE 3 – REDUCED SECTION 16 DEVELOPMENT

Alternative 3 represents reduced new development in Section 16 and addresses issues associated with:

- Stream Channels and Floodplains (see Section 1.5.2.1 – Stream Channels and Floodplains)
- Riparian Reserves (see Section 1.5.2.2 – Riparian Reserves)
- Late-Successional Habitat (LSH) (see Section 1.5.2.3 – Vegetation)
- Wildlife Connectivity (see Section 1.5.2.5 – Wildlife Habitat Connectivity)
- Wildlife Habitat Quantity and Quality (see Section 1.5.2.6 – Wildlife Habitat Quantity and Quality)
- Effects to Nordic Pass Backcountry Skiers (see Section 1.5.2.7 – Recreation)

Alternative 3 is shown in Figures 2.3.4-1, Alternative 3 Proposed Conditions - The Summit, and 2.3.4-2, Alternative 3 Proposed Conditions – Alpental. The major differences between Alternatives 2 and 3 are:

- No *Creek Run* chairlift or trails would be developed at Summit East (Section 16).
- SUP expansion would include only Hyak Creek (Summit East-Central) and the warming hut.
- No *Pulse Gondola* would be constructed at Alpental.
- No mountain-top restaurant would be constructed at Alpental.

[3] Prior to the acquisition of the ski area by Ski Lifts, Inc., Ski Acres and Hyak ski areas operated under separate SUPs that provided separate operations. The SUP areas were separated by Hyak Creek, which was not included in either permit area. With the purchase of Hyak and Ski Acres by Ski Lifts, Inc., the ski area operations were no longer separate. This expansion would "clean up" the SUP area along Hyak Creek.

- Ski Lifts, Inc. would donate 390 acres of private land in the Mill Creek Watershed, Section 21, T. 22 N., R.11 E. to the federal government for inclusion in the OWNF.

Under Alternative 3, The Summit's CCC would increase from 8,140 to 9,990 skiers and Alpental's CCC would increase from 1,880 to 2,620 skiers, for a total increase of approximately 26 percent, or 2,590 skiers for The Summit-at-Snoqualmie.

Forest Plan Amendment #27: Alternative 3 would include a non-significant (under NFMA) Forest Plan amendment, which would add a total of 17 acres to the SUP area, including Hyak Creek and re-allocate these acres to AMA (RE-1). In addition, the cross-country hut at Grand Junction (approximately 500 feet west of Hyak Lake, occupying roughly 0.1 acre), would be incorporated into the SUP[4]. The expansion would incorporate Hyak Creek into the SUP area and provide for construction and use of the proposed crossover trail between Summit East and Summit Central. The Forest Plan amendment would also reallocate a total of 397.01 acres of OWNF lands from AMA (ST-1 - Scenic Travel) to AMA (RE-1 - Developed Recreation). These lands include 380 acres in the existing SUP area, 17 acres in the SUP adjustment, and 0.01 acre at the existing cross-country warming hut.

In order to offset impacts to Section 16 (proposed *Rampart* chairlift and associated trails), Alternative 3, Ski Lifts, Inc. would donate 390 acres of private land to the Federal Government for inclusion in the OWNF, allocated to Adaptive Management Area (as the donated acres are surrounded by the Snoqualmie Pass Adaptive Management Area [AMA]). The land donation would include lands within Section 21, T. 22 N., R.11 E. Approximately 440 acres would be purchased by Ski Lifts, Inc. from Plum Creek Timber (see Figure 2.3.4-3, Existing and Proposed Land Donation). Of the 440 acres, approximately 50 acres would be retained as a Ski Lifts, Inc. in-holding (comprising existing development and proposed expansion associated with the *Mill Creek* chairlift and trails). The remaining 390 acres would be donated to the USFS to be managed for LSH.[5] No development in Section 16 would occur until the land has been transferred to Federal Government ownership.

[4] Prior to the acquisition of the ski area by Ski Lifts, Inc., Ski Acres and Hyak ski areas operated under separate SUPs that provided separate operations. The SUP areas were separated by Hyak Creek, which was not included in either permit area. With the purchase of Hyak and Ski Acres by Ski Lifts, Inc., the ski area operations were no longer separate. This expansion would "clean up" the SUP area along Hyak Creek.

[5] This land donation would be acceptable to the US Government despite the fact that the mineral rights would not be transferred to the US. In a February 24, 2000 letter to Dan Brewster, General Manager of The Summit-at-Snoqualmie, John Phipps, Forest Supervisor of the MBSNF, indicated three parcels that, upon donation to the USFS, would mitigate the effects to the LSH in Section 16, and would make the alternative neutral or beneficial to LSH in the SPAMA (USFS 2000c). In a March 10, 2005 letter to Kimberly Bown, Director of Lands in Forest Service Region 6, Gregory Smith, Acting Director of Lands for the Forest Service Washington Office, indicated that outstanding interests (i.e., not owning the mineral rights) would not interfere with the purpose for which the land would be contributed to the Department of Agriculture (i.e., preservation of connectivity for old growth dependent species.

3.4 ALTERNATIVE 4 – NO SECTION 16 DEVELOPMENT

Alternative 4 represents no new development in Section 16 and addresses issues associated with:

- Stream Channels and Floodplains (see Section 1.5.2.1 – Stream Channels and Floodplains)
- Riparian Reserves (see Section 1.5.2.2 – Riparian Reserves)
- LSH (see Section 1.5.2.3 – Vegetation)
- Wildlife Connectivity (see Section 1.5.2.5 – Wildlife Habitat Connectivity)
- Wildlife Habitat Quantity and Quality (see Section 1.5.2.6 – Wildlife Habitat Quantity and Quality)
- Effects to Nordic Pass Backcountry Skiers (see Section 1.5.2.7 – Recreation)

Alternative 4, as shown in Figures 2.3.5-1, Alternative 4 Proposed Conditions - The Summit, and 2.3.5-2, Alternative 4 Proposed Conditions - Alpental, modifies the Proposed Action by removing the *Creek Run* and *Rampart* chairlifts and associated trails. As such, the land donation discussed for Alternative 3 would not occur under Alternative 4.

The major differences between Alternatives 2 and 4 are:

- No *Creek Run* or *Rampart* chairlift or trails would be developed at Summit East (Section 16),
- SUP expansion would include only Hyak Creek (Summit East-Central),
- No new development would take place in Section 16, and
- Parking lots 4, 5 and 6 at Alpental would be reduced in size, and Parking lot 7 would be eliminated to allow for 0.9 acre of riparian restoration along the SF Snoqualmie River.

Under Alternative 4, The Summit's CCC would increase from 8,140 to 9,360 skiers and Alpental's CCC would increase from 1,880 to 2,920 for an increase of approximately 23 percent, or 2,260 skiers for The Summit-at-Snoqualmie.

Forest Plan Amendment #27: Alternative 4 would include a non-significant (under NFMA) Forest Plan amendment, which would add a total of 17 acres to the SUP area, including Hyak Creek and re-allocate these acres to AMA (RE-1). In addition, the cross-country hut at Grand Junction (approximately 500 feet west of Hyak Lake, occupying roughly 0.01 acre), would be incorporated into the SUP.[6] The expansion would incorporate Hyak Creek into the SUP area. The Forest Plan amendment would also reallocate a total of 397 acres of OWNF lands from AMA (ST-1 - Scenic Travel) to AMA (RE-1 - Developed

[6] Prior to the acquisition of the ski area by Ski Lifts, Inc., Ski Acres and Hyak ski areas operated under separate SUPs that provided separate operations. The SUP areas were separated by Hyak Creek, which was not included in either permit area. With the purchase of Hyak and Ski Acres by Ski Lifts, Inc., the ski area operations were no longer separate. This expansion would "clean up" the SUP area along Hyak Creek.

Recreation). These lands include 380 acres in the existing SUP area, 17 acres in the SUP adjustment, and 0.01 acre at the existing cross-country warming hut.

3.5 MODIFIED ALTERNATIVE 5 – MITIGATED PROPOSED ACTION

Modified Alternative 5 represents a reduced version of the Proposed Action, and addresses issues associated with:

- Stream Channels and Floodplains (see Section 1.5.2.1 – Stream Channels and Floodplains)
- Riparian Reserves (see Section 1.5.2.2 – Riparian Reserves)
- LSH (see Section 1.5.2.3 – Vegetation)
- Wildlife Connectivity (see Section 1.5.2.5 – Wildlife Habitat Connectivity)
- Wildlife Habitat Quantity and Quality (see Section 1.5.2.6 – Wildlife Habitat Quantity and Quality)

Modified Alternative 5, as shown in Figures 2.3.6-1, Modified Alternative 5 Proposed Conditions - The Summit, and 2.3.6-2, Modified Alternative 5 Proposed Conditions - Alpental, modifies the Proposed Action by reducing development in Section 16, while still developing both the *Rampart* and *Creek Run* chairlifts. A land donation, discussed for Alternative 3, and Forest Plan Amendment #27, discussed for Alternative 2, would also occur under Modified Alternative 5.

The major differences between Alternative 2 and Modified Alternative 5 are:

- Trails 55, 55A, and 55B and all trail clearing within the proposed *Creek Run* pod north of the lift line would be 100 percent gladed (as compared to the full clearing and glading combination discussed for Alternative 2).[7]
- Under Modified Alternative 5, at Alpental the lift configuration would be as described under Alternative 2 with the exception of an upgrade to the *Edelweiss* chairlift to provide increased capacity within the existing alignment.[8]
- Under Modified Alternative 5, The Summit's CCC would increase from 8,140 to 10,710 skiers and Alpental's CCC would increase from 1,880 to 3,220 skiers for an increase of approximately 39 percent, or 3,910 skiers for The Summit-at-Snoqualmie.
- Under Modified Alternative 5, the PCNST would be rerouted where it traverses the Summit West parking lot to an adjacent vegetated area.
- Alternatives Considered but Eliminated from Detailed Study

[7] As analyzed in the DEIS

[8] Upgrades to the *Edelweiss* chairlift and the associated revisions to CCC represent changes to Alternative 5 from the Draft EIS. As a result, in the Final EIS, this alternative is referred to as "Modified Alternative 5"

NEPA regulations require that this FEIS discuss the reasons for eliminating any alternatives explored, but not developed in detail (40 CFR 1502.14[a]). A detailed discussion of alternatives considered but eliminated from further analysis, and modifications to the Proposed Action, can be found in Appendix A - *Alternatives Considered and Modifications to The Summit-at-Snoqualmie MDP.*

In response to issues raised during the scoping process and the development of alternatives, numerous alternative MDP components were discussed and analyzed in the DEIS. During the comment period for the DEIS public input was received suggesting further modifications to the MDP components including a suggested alternative to be considered. These alternatives include modifications to chairlift and trail clearing limits, elimination of trails, additional lifts, and relocation/elimination of buildings, parking lots, and utilities. Alternative MDP components were either eliminated upon further analysis (i.e., those determined not to reduce environmental impacts or sufficiently address the issues) or incorporated into the Proposed Action. A total of 12 alternative MDP components were eliminated from consideration. Over 23 modifications were made to the Proposed Action using this approach.

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 COMPARISON OF ALTERNATIVES

Table S-2 provides a comparison of the ski area facilities under the range of alternatives. Table S-3 presents a summary of the environmental consequences of each alternative based on the analysis in Chapter 4 – Environmental Consequences of the FEIS.

Table S-2:
Summary Comparison of Facilities by Alternative

Master Plan Components	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Modified Alternative 5
Alpental					
Alpine Ski Area Capacity (CCC) (Change from Alternative 1)	1,880	2,920 (+1,040)	2,620 (+740)	2,920 (+1,040)	3,220 (+1,340)
The Summit					
Alpine Ski Area Capacity (CCC) (Change from Alternative 1)	8,140	10,710 (+2,790)	9,990 (+2,070)	9,360 (+1,440)	10,710 (+2,790)
Total SUP Area (acres) (Change from Alternative 1)	1,834 SUP area between Summit East and Summit Central would continue to be separated by Hyak Creek. The existing Trail 49 would continue to provide unsuitable slope gradients for skiers and snowboarders going from Summit Central to Summit East.	1,886 (+53) SUP Area between Summit East and Summit Central would include the area along Hyak Creek and an expansion to accommodate a re-route of Trail 49 between Summit Central and Summit East. The re-route would provide more suitable slope gradients for skiers and snowboarders going from Summit Central to Summit East.	1,851 (+17) SUP Area between Summit East and Summit Central would include the area along Hyak Creek and the existing Trail 49 between Summit Central and Summit East. The existing Trail 49 would continue to provide unsuitable slope gradients for skiers and snowboarders going from Summit Central to Summit East.	1,851 (+17) SUP Area between Summit East and Summit Central would include the area along Hyak Creek and the existing Trail 49 between Summit Central and Summit East. The existing Trail 49 would continue to provide unsuitable slope gradients for skiers and snowboarders going from Summit Central to Summit East.	1,886 (+53) SUP Area between Summit East and Summit Central would include the area along Hyak Creek and an expansion to accommodate a re-route of Trail 49 between Summit Central and Summit East. The re-route would provide more suitable slope gradients for skiers and snowboarders going from Summit Central to Summit East.

Table S-2:
Summary Comparison of Facilities by Alternative

Master Plan Components	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Modified Alternative 5
Lifts[a, b]					
Alpental					
Total Number of Lifts	5	7	6	7	7
Armstrong Express	Existing	Existing	Existing	Existing	Existing
Drei	Existing	Non Existent	Non Existent	Non Existent	Non Existent
Edelweiss	Existing	Existing	Existing	Existing	Modified
Internationale	Non Existent	Proposed	Proposed	Proposed	Proposed
Magic Carpet	Non Existent	Proposed	Proposed	Proposed	Proposed
Pulse Gondola	Non Existent	Proposed	Non Existent	Proposed	Proposed
Sessel	Existing	Modified	Modified	Modified	Modified
St. Bernard	Existing	Modified	Modified	Modified	Modified
Summit					
Total Number of Lifts	20	22	21	20	22
Baby Double	Non Existent	Proposed	Proposed	Proposed	Proposed
Backside	Existing	Non Existent	Non Existent	Non Existent	Non Existent
Bunny	Existing	Non Existent	Non Existent	Non Existent	Non Existent
Central Express	Existing	Existing	Existing	Existing	Existing
Creek Run	Non Existent	Proposed	Non Existent	Non Existent	Proposed
Dodge Ridge	Existing	Modified	Modified	Modified	Modified
Easy Gold	Existing	Modified	Modified	Modified	Modified
Easy Rider	Existing	Non Existent	Non Existent	Non Existent	Non Existent
Easy Street	Existing	Modified	Modified	Modified	Modified
Gallery	Existing	Non Existent	Non Existent	Non Existent	Non Existent

Table S-2:
Summary Comparison of Facilities by Alternative

Master Plan Components	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Modified Alternative 5
Holiday	Existing	Modified	Modified	Modified	Modified
Julie's Chair	Existing	Modified	Modified	Modified	Modified
Little Thunder	Existing	Modified	Modified	Modified	Modified
Magic Carpet I	Existing	Modified	Modified	Modified	Modified
Magic Carpet II	Existing	Modified	Modified	Modified	Modified
Mill Creek	Non Existent	Proposed	Proposed	Proposed	Proposed
Mt. Hyak	Existing	Existing	Existing	Existing	Existing
Northside	Non Existent	Proposed	Proposed	Proposed	Proposed
Pacific Crest	Existing	Existing	Existing	Existing	Existing
Rampart	Non Existent	Proposed	Proposed	Non Existent	Proposed
Reggie's Chair	Existing	Non Existent	Non Existent	Non Existent	Non Existent
Rope Tow	Existing	Non Existent	Non Existent	Non Existent	Non Existent
Silver Fir	Existing	Existing	Existing	Existing	Existing
Ski School	Non Existent	Proposed	Proposed	Proposed	Proposed
Surface Lift I	Non Existent	Proposed	Proposed	Proposed	Proposed
Surface Lift II	Non Existent	Proposed	Proposed	Proposed	Proposed
Triple 60	Existing	Modified	Modified	Modified	Modified
Wildside	Existing	Modified	Modified	Modified	Modified
Ski Terrain by Ability (acres/percent distribution)					
Total Ski Terrain (Alpental and Summit)					
Beginner (acres/% of total)	12.2 / 1.6	8.8 / 1.1	8.8 / 1.1	8.8 / 1.1	8.8 / 1.1
Novice (acres/% of total)	111 / 14.8	127.8 / 15.7	104.5 / 13.6	120.1 / 15.6	118.2 / 14.6
Low (acres/% of total)	131.5 / 17.5	179.6 / 22	155.1 / 20.2	148.5 / 19.3	168.9 / 20.9

Table S-2:
Summary Comparison of Facilities by Alternative

Master Plan Components	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Modified Alternative 5
Intermediate (acres/% of total)	106 / 14.1	145.5 / 17.8	138.0 / 18	129.1 / 16.7	152.6 / 18.8
Advanced Intermediate (acres/% of total)	146.7 / 19.5	101.9 / 12.5	109.8 / 14.3	112.8 / 14.6	109.8 / 13.6
Expert (acres/% of total)	243.1 / 32.4	252.8 / 31	252.3 / 32.9	252.2 / 32.7	252.3 / 31.1
Ski Trails[c, d]					
Alpental					
Number of Trails	25	27	27	27	27
Formal Terrain (acres) (Change from Alternative 1)	206	217 (+11)	217 (+11)	217 (+11)	217 (+11)
Trail Number					
1	Existing	Existing	Existing	Existing	Existing
2	Existing	Existing	Existing	Existing	Existing
3	Existing	Modified	Modified	Modified	Modified
4	Existing	Existing	Existing	Existing	Existing
5	Existing	Existing	Existing	Existing	Existing
6	Existing	Existing	Existing	Existing	Existing
7	Existing	Modified	Modified	Modified	Modified
8	Existing	Existing	Existing	Existing	Existing
9	Existing	Existing	Existing	Existing	Existing
10	Existing	Existing	Existing	Existing	Existing
11	Existing	Existing	Existing	Existing	Existing
12	Existing	Existing	Existing	Existing	Existing
13	Existing	Existing	Existing	Existing	Existing
14	Existing	Existing	Existing	Existing	Existing

Table S-2:
Summary Comparison of Facilities by Alternative

Master Plan Components	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Modified Alternative 5
15	Existing	Existing	Existing	Existing	Existing
16	Existing	Existing	Existing	Existing	Existing
17	Existing	Existing	Existing	Existing	Existing
18	Existing	Existing	Existing	Existing	Existing
19	Existing	Existing	Existing	Existing	Existing
20	Existing	Modified	Modified	Modified	Modified
20A	Non Existent	Proposed	Proposed	Proposed	Proposed
21	Existing	Existing	Existing	Existing	Existing
21A	Non Existent	Proposed	Proposed	Proposed	Proposed
22	Existing	Existing	Existing	Existing	Existing
23	Existing	Existing	Existing	Existing	Existing
25	Existing	Existing	Existing	Existing	Existing
69	Existing	Existing	Existing	Existing	Existing
The Summit					
Number of Trails	70	80	75	75	80
Formal Terrain (acres) (Change from Alternative 1)	545	599 (+54)	551 (+6)	554 (+9)	593 (+48)
Trail Number					
1	Existing	Modified	Modified	Modified	Modified
2	Existing	Modified	Modified	Modified	Modified
3	Existing	Modified	Modified	Modified	Modified
4	Existing	Modified	Modified	Modified	Modified
4A	Non Existent	Proposed	Proposed	Proposed	Proposed

Table S-2:
Summary Comparison of Facilities by Alternative

Master Plan Components	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Modified Alternative 5
5	Existing	Modified	Modified	Modified	Modified
6	Existing	Non Existent	Non Existent	Non Existent	Non Existent
7	Existing	Existing	Existing	Existing	Existing
8	Existing	Existing	Existing	Existing	Existing
9	Existing	Modified	Modified	Modified	Modified
9A	Non Existent	Proposed	Proposed	Proposed	Proposed
10	Existing	Existing	Existing	Existing	Existing
11	Existing	Modified	Modified	Modified	Modified
12	Existing	Modified	Modified	Modified	Modified
12A	Non Existent	Proposed	Proposed	Proposed	Proposed
12B	Non Existent	Proposed	Proposed	Proposed	Proposed
13	Existing	Modified	Modified	Modified	Modified
13B	Non Existent	Proposed	Proposed	Proposed	Proposed
14	Existing	Existing	Existing	Existing	Existing
15	Existing	Modified	Modified	Modified	Modified
16	Existing	Existing	Existing	Existing	Existing
17	Existing	Existing	Existing	Existing	Existing
18	Existing	Existing	Existing	Existing	Existing
18A	Non Existent	Proposed	Proposed	Proposed	Proposed
19	Existing	Modified	Modified	Modified	Modified
20	Existing	Existing	Existing	Existing	Existing
21	Existing	Modified	Modified	Modified	Modified
22	Existing	Existing	Existing	Existing	Existing

Table S-2:
Summary Comparison of Facilities by Alternative

Master Plan Components	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Modified Alternative 5
23	Existing	Modified	Modified	Modified	Modified
24	Existing	Existing	Existing	Existing	Existing
25	Existing	Modified	Modified	Modified	Modified
26	Existing	Modified	Modified	Modified	Modified
27	Existing	Modified	Modified	Modified	Modified
28	Existing	Non Existent	Non Existent	Non Existent	Non Existent
29	Existing	Modified	Modified	Modified	Modified
30	Existing	Modified	Modified	Modified	Modified
31	Existing	Modified	Modified	Modified	Modified
32	Existing	Existing	Existing	Existing	Existing
33	Existing	Existing	Existing	Existing	Existing
34	Existing	Existing	Existing	Existing	Existing
35	Existing	Existing	Existing	Existing	Existing
36	Existing	Existing	Existing	Existing	Existing
37	Existing	Existing	Existing	Existing	Existing
38	Existing	Existing	Existing	Existing	Existing
39	Existing	Existing	Existing	Existing	Existing
40	Existing	Existing	Existing	Existing	Existing
41	Existing	Existing	Existing	Existing	Existing
42	Existing	Existing	Existing	Existing	Existing
43	Existing	Modified	Modified	Modified	Modified
44	Existing	Modified	Modified	Modified	Modified
45	Existing	Existing	Existing	Existing	Existing

Table S-2:
Summary Comparison of Facilities by Alternative

Master Plan Components	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Modified Alternative 5
46	Existing	Modified	Modified	Modified	Modified
49	Existing	Modified	Modified	Modified	Modified
50	Existing	Non Existent	Non Existent	Non Existent	Non Existent
51	Existing	Modified	Modified	Modified	Modified
51A	Non Existent	Proposed	Proposed	Proposed	Proposed
51B	Non Existent	Proposed	Proposed	Proposed	Proposed
51C	Non Existent	Proposed	Proposed	Proposed	Proposed
51E	Non Existent	Proposed	Proposed	Proposed	Proposed
52	Existing	Modified	Modified	Modified	Modified
52A	Non Existent	Proposed	Proposed	Proposed	Proposed
52B	Non Existent	Proposed	Proposed	Proposed	Proposed
52C	Non Existent	Proposed	Proposed	Proposed	Proposed
52D	Non Existent	Proposed	Proposed	Proposed	Proposed
52E	Non Existent	Proposed	Proposed	Proposed	Proposed
53	Existing	Non Existent	Non Existent	Non Existent	Non Existent
54	Existing	Modified	Modified	Modified	Modified
55	Existing	Modified	Revegetated	Existing	Modified
55A	Non Existent	Proposed	Non Existent	Non Existent	Proposed
55B	Non Existent	Proposed	Non Existent	Non Existent	Proposed
56	Existing	Modified	Modified	Modified	Modified
57	Existing	Revegetated	Revegetated	Revegetated	Revegetated
58	Existing	Modified	Modified	Modified	Modified
59	Existing	Modified	Modified	Modified	Modified

Table S-2:
Summary Comparison of Facilities by Alternative

Master Plan Components	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Modified Alternative 5
60	Existing	Modified	Modified	Existing	Modified
60A	Non Existent	Proposed	Proposed	Proposed	Proposed
60B	Non Existent	Proposed	Proposed	Proposed	Proposed
61	Existing	Modified	Modified	Existing	Modified
62	Existing	Modified	Modified	Modified	Modified
63	Existing	Existing	Existing	Existing	Existing
64	Existing	Non Existent	Non Existent	Existing	Non Existent
65	Existing	Existing	Existing	Existing	Existing
66	Existing	Modified	Revegetated	Existing	Modified
67	Existing	Modified	Revegetated	Existing	Modified
68	Existing	Existing	Existing	Existing	Existing
69	Existing	Non Existent	Non Existent	Non Existent	Non Existent
70	Existing	Non Existent	Non Existent	Non Existent	Non Existent
71	Existing	Relocated	Relocated	Existing	Relocated
72	Existing	Non Existent	Non Existent	Non Existent	Non Existent
Night Skiing					
Alpental					
Total Number of Trails	12	15	15	12	15
Available Terrain (acres) (Change from Alternative 1)	95	112 (+17)	112 (+17)	112 (+17)	112 (+17)
Capacity (skiers) (Change from Alternative 1)	1,550	2,170 (+620)	2,170 (+620)	1,550	2,170 (+620)

Table S-2:
Summary Comparison of Facilities by Alternative

Master Plan Components	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Modified Alternative 5
The Summit					
Total Number of Trails	54	70	67	54	70
Available Terrain (acres) (Change from Alternative 1)	420	544 (+124)	543 (+123)	544 (+124)	545 (+125)
Capacity (skiers) (Change from Alternative 1)	6,210	9,870 (+3,660)	9,870 (+3,660)	6,210	9,870 (+3,660)
Parking (acres)					
Alpental					
Lot 1 (acres)	0.8	0.8	0.8	0.8	0.8
Lot 2 (acres)	1.9	1.9	1.9	1.9	1.9
Lot 3 (acres)	0.9	0.9	0.9	0.9	0.9
Lot 4 (acres)	0.6	0.6	0.6	0.5	0.6
Lot 5 (acres)	0.9	0.9	0.9	0.9	0.9
Lot 6 (acres)	2.5	2.5	2.5	1.9	2.5
Lot 7 (acres)	0.2	0.2	0.2	0	0.2
Subtotal Alpental (acres) (Change from Alternative 1)	7.8	7.8	7.8	6.9 (-0.9)	7.8
The Summit					
Summit West, First Western (acres)	1.8	8.0	8.0	8.0	8.0
Summit West, SR 906 (acres)	2.3	4.3	4.3	4.3	4.3
Summit West Lot 1 (acres)	5.2	0.1	0.1	1.8	0.1
Summit West Lot 2 (acres)	4.3	1.8	1.8	2.3	1.8
Summit West Maintenance Lot (acres)	Non Existent	2.3	2.3	0.1	2.3

Table S-2:
Summary Comparison of Facilities by Alternative

Master Plan Components	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Modified Alternative 5
Summit Central Lot 1 (acres)	10.9	10.9	10.9	10.9	10.9
Summit Central Lot 2 (acres)	4.2	4.2	4.2	4.2	4.2
Silver Fir Lot 1 (acres)	2.7	2.7	2.7	2.7	2.7
Silver Fir Lot 2 (acres)	1.4	3.6	3.6	3.6	3.6
Silver Fir Lot 3 (acres)	1.3	1.3	1.3	1.3	1.3
Silver Fir Lot 4 (acres)	Non Existent	4.8	4.8	4.8	4.8
Summit East Lot 1 (acres)	1.8	1.8	1.8	1.8	1.8
Summit East Lot 2 (acres)	2.6	2.6	2.6	2.6	2.6
Summit East Lot 3 (acres)	1.1	1.1	1.1	1.1	1.1
Subtotal Summit (acres) (Change from Alternative 1)	39.6	49.5 (+9.9)	49.5 (+9.9)	49.5 (+9.9)	49.5 (+9.9)
Total (acres) (Change from Alternative 1)	47.4	57.3 (+9.9)	57.3 (+9.9)	56.4 (+9.0)	57.3 (+9.9)
Parking Capacity (people)	12,346	14,786	14,786	14,518	14,786
Parking Requirement (people)	13,020	16,630	16,630	15,280	16,930
Parking Deficit (people)	674	1,844	1,844	762	2,144
Parking Requirement Met?	Parking requirement for skiers, tubers, Nordic skiers and other users would not be met. Alpental parking would continue to be overburdened on busy days.	Parking requirement for skiers, tubers, Nordic skiers and other users would not be met. Alpental parking would continue to be overburdened on busy days.	Parking requirement for skiers, tubers, Nordic skiers and other users would not be met. Alpental parking would continue to be overburdened on busy days.	Parking requirement for skiers, tubers, Nordic skiers and other users would not be met. Alpental parking would continue to be overburdened on busy days, more so than under any other alternative	Parking requirement for skiers, tubers, Nordic skiers and other users would not be met. Alpental parking would continue to be overburdened on busy days.

Table S-2:
Summary Comparison of Facilities by Alternative

Master Plan Components	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Modified Alternative 5
Support Facilities					
Alpental					
Food Service Seats (Change from Alternative 1)	528	813 (+285)	528	813 (+285)	813 (+285)
Guest Services Buildings (sq. ft.) (Change from Alternative 1)	20,688	38,188 (+17,500)	34,688 (+14,000)	38,188 (+17,500)	38,188 (+17,500)
Maintenance Building (sq. ft.) (Change from Alternative 1)	2,754	3,682 (+928)	3,682 (+928)	3,682 (+928)	3,682 (+928)
Ski Patrol Stations (number)	3	4	3	4	4
Size of Ski Patrol Stations (sq. ft.) (Change from Alternative 1)	1,516	1,705 (+189)	1,516	1,705 (+189)	1,705 (+189)
The Summit					
Food Service Seats (Change from Alternative 1)	1,386	4,234 (+2,848)	4,234 (+2,848)	4,234 (+2,848)	4,234 (+2,848)
Guest Services Building (sq. ft.) (Change from Alternative 1)	97,566	174,720 (+77,154)	174,720 (+77,154)	174,720 (+77,154)	174,720 (+77,154)
Maintenance Building (sq. ft.) (Change from Alternative 1)	12,317	21,127 (+8,810)	21,127 (+8,810)	21,127 (+8,810)	21,127 (+8,810)
Ski Patrol Stations (number)	9	9	8	8	8
Size of Ski Patrol Stations (sq. ft.) (Change from Alternative 1)	4,527	5,764 (+1,237)	5,514 (+987)	5,514 (+987)	5,514 (+987)

Table S-2:
Summary Comparison of Facilities by Alternative

Master Plan Components	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Modified Alternative 5
Utilities					
Alpental					
Average Water Demand (gpd) Capacity = 620,640	28,000 (below capacity)	34,500 (below capacity)	30,916 (below capacity)	34,500 (below capacity)	37,950 (below capacity)
Water Storage Capacity	100,000-gallon tank	No Change	No Change	No Change	No Change
Wastewater Disposal	SPUD – Sufficient Capacity				
Power Demand (mw)	The existing power system at Alpental has the capacity to accommodate all proposed lifts, lighting, and facilities.				
Fuel Storage (gallons)	2,000	No Change			
Number of Fuel Tanks	2	2 – Tanks would be re-located to the new Maintenance Facility			
The Summit					
Average Water Demand (gpd) Capacity = 465,000	93,500 (below capacity)	149,126 (below capacity)	117,882 (below capacity)	110,448 (below capacity)	149,126 (below capacity)
Wastewater Disposal	SPUD – Sufficient Capacity				
Power Demand (mw)	The existing power system at The Summit has the capacity to accommodate all proposed lifts, lighting, and facilities.				
Fuel Storage (gallons)	17,000	No Change			
Number of Fuel Tanks	4	4 – 2 4,000-gallon tanks at Summit West would be re-located to the new Maintenance Facility			
Roads					
Road Network Density (mi/mi^2) (Change from Alternative 1)	4.86	4.79 (-0.07)	4.79 (-0.07)	4.74 (-0.12)	4.79 (-0.07)
Road Network (miles) (Change from Alternative 1)	22.0	21.35 (-0.65)	21.35 (-0.65)	21.09 (-0.91)	21.35 (-0.65)
Proposed Roads (miles)	0.0	0.58	0.58	0.35	0.58

[a] The modification of existing lifts includes the realignment and/or changes in length.
[b] Nonexistent lifts are lifts that would either be removed or not constructed.
[c] Modified ski trails includes trails where blasting/grading/clearing, widening, lengthening or shortening, or realignment occurs as a result of MDP component implementation.
[d] Non Existent ski trails are trails that have been removed or have not been identified as a designated ski trail.

Table S-3:
Summary Comparison of Environmental Consequences by Alternative

Parameter	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Modified Alternative 5
Geology and Soils[a]					
Road Network Density (mi/mi^2) (Change from Alternative 1)	4.86	4.79 (-0.07)	4.79 (-0.07)	4.74 (-0.12)	4.79 (-0.07)
Road Network (miles) (Change from Alternative 1)	22.0	21.35 (-0.65)	21.35 (-0.65)	21.09 (-0.91)	21.35 (-0.65)
Developed Area (acres) (Change from Alternative 1)	87.8	99.3 (+11.6)	96.1 (+8.3)	96.8 (+9.1)	98.4 (+10.6)
Bare Area Soils (acres) (Change from Alternative 1)	13.5	9.1 (-4.4)	9.1 (-4.4)	9.2 (-4.4)	9.1 (-4.4)
Detrimental soil conditions (acres) (Change from Alternative 1)	107.1	108.5 (+1.4)	105.2 (-1.9)	106.0 (-1.1)	107.5 (+0.4)
Percent of Study Area in a Detrimental Soil Condition (percent)	4.0%	4.0%	4.0%	4.0%	4.0%
Watershed					
Streams					
Number of Stream Crossings (All Channel Types) by Crossing Structure					
Culvert	61	60	60	59	60
Bridge	1	3	3	1	3
Ford[b]	12	12	12	12	12
Total Number of Stream Crossings	74	75	75	72	75
Wetlands					
Clearing Impacts (acres)					
Palustrine Emergent (PEM) (acres) (Change from Alternative 1)	47.8	46.5 (-1.3)	46.8 (-1.1)	46.8 (-1.1)	46.5 (-1.3)
Palustrine Forested (PFO) (acres) (Change from Alternative 1)	2.7	2.7	2.7	2.7	2.7
Palustrine Scrub Shrub (PSS) (acres) (Change from Alternative 1)	21.9	21.0 (-0.9)	21.3 (-0.6)	21.9	21.0 (-0.9)

Table S-3:
Summary Comparison of Environmental Consequences by Alternative

Parameter	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Modified Alternative 5
Total (acres) (Change from Alternative 1)	72.4	70.2 (-2.2)	70.7 (-1.7)	71.3 (-1.1)	70.1 (-2.3)
Grading Impacts (acres)					
Palustrine Emergent (PEM) (acres) (Change from Alternative 1)	47.8	46.3 (-1.5)	46.2 (-1.6)	46.3 (-1.5)	46.2 (-1.6)
Palustrine Forested (PFO) (acres) (Change from Alternative 1)	2.7	2.6 (-0.1)	2.6 (-0.1)	2.6 (-0.1)	2.6 (-0.1)
Palustrine Scrub Shrub (PSS) (acres) (Change from Alternative 1)	21.9	21.6 (-0.3)	21.7 (-0.2)	21.7 (-0.2)	21.7 (-0.3)
Total (acres) (Change from Alternative 1)	72.4	70.5 (-1.9)	70.5 (-1.9)	70.6 (-1.8)	70.5 (-1.9)
Riparian Buffers					
Land Cover Types within Riparian Buffers (acres)					
Forested – Mature (acres) (Change from Alternative 1)	312.5	291.0 (-21.5)	297.5 (-15.0)	304.3 (-8.1)	293.4 (-19.0)
Forested – Immature (acres) (Change from Alternative 1)	43.2	36.8 (-6.4)	36.7 (-6.6)	37.6 (-5.6)	36.8 (-6.5)
Forested – Sapling (acres) (Change from Alternative 1)	2.8	8.1 (5.3)	16.4 (13.6)	10.9 (8.1)	9.9 (7.1)
Naturally Non-forested (acres) (Change from Alternative 1)	71.8	68.0 (-3.7)	70.4 (-1.3)	70.5 (-1.2)	69.6 (-2.1)
Modified (acres) (Change from Alternative 1)	247.5	265.0 (17.6)	243.0 (-4.5)	247.3 (-0.2)	252.9 (5.4)
Developed (acres) (Change from Alternative 1)	28.8	35.6 (6.8)	33.9 (5.1)	33.8 (5.0)	35.3 (6.5)
Road Length within Riparian Buffers (miles)					
Native Road Length (miles) (Change from Alternative 1)	3.9	3.8 (-0.1)	4.3 (+0.4)	3.7 (-0.2)	4.3 (+0.4)
Paved Road Length (miles)	0.4	0.4	0.4	0.4	0.4

Table S-3:
Summary Comparison of Environmental Consequences by Alternative

Parameter	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Modified Alternative 5
Total Road Length (miles) (Change from Alternative 1)	4.3	4.2 (-0.1)	4.7 (+0.4)	4.1 (-0.2)	4.7 (+0.4)
Fish					
Fish Bearing Stream Crossing (number)	20	20	20	20	20
Presumed Fish Bearing Stream Crossings (number)	10	11	11	10	11
Culverted stream length (miles) (Change from Alternative 1)	2.1	2.2 (+0.1)	2.2 (+0.1)	2.2 (+0.1)	2.2 (+0.1)
Vegetation					
Vegetation Communities (acres)					
Mixed Conifer Western hemlock (acres) (Change from Alternative 1)	123.3	123.1 (-0.2)	123.1 (-0.2)	123.2 (-0.1)	123.1 (-0.2)
Mixed Conifer Pacific silver fir (acres) (Change from Alternative 1)	988.3	912.3 (-76.0)	937.8 (-50.5)	949.8 (-38.5)	919.6 (-68.7)
Mixed Conifer Mountain hemlock (acres) (Change from Alternative 1)	224.6	218.0 (-6.6)	223.8 (-0.8)	222.2 (-2.4)	219.4 (-5.2)
Shrub (acres) (Change from Alternative 1)	429.8	395.6 (-34.2)	402.5 (-27.3)	400.7 (-29.1)	395.7 (-34.1)
Herbaceous (acres) (Change from Alternative 1)	430.6	379.0 (-51.7)	381.7 (-48.9)	379.5 (-51.1)	379.1 (-51.5)
Lakes/Open Water (acres)	1.3	1.3	1.3	1.3	1.3
Unvegetated Rock Outcrops/Talus (acres) (Change from Alternative 1)	224.6	219.1 (-5.5)	222.2 (-2.4)	219.1 (-5.5)	219.2 (-5.4)
Threatened and Endangered (T&E) Species?	No T&E Plant Species are present in the Study Area	No T&E Plant Species are present in the Study Area	No T&E Plant Species are present in the Study Area	No T&E Plant Species are present in the Study Area	No T&E Plant Species are present in the Study Area

Table S-3:
Summary Comparison of Environmental Consequences by Alternative

Parameter	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Modified Alternative 5
Wildlife					
Impacts to Habitat Connectivity	No new impacts	Full clearing associated with lift and ski trail construction (*Creek Run* and *Rampart*) in Section 16 would result in a loss of mature forest and increase forest fragmentation.	Full clearing associated with lift and ski trail construction (*Rampart*) in Section 16 would result in a loss of mature forest and increase forest fragmentation. However, the land donation (Section 21) would improve connectivity in the long term.	Full clearing associated with lift and ski trail construction in Section 16 would not occur under Alternative 4. Forest fragmentation and loss of mature forest would be the least of all Action Alternatives.	Full clearing associated with lift and ski trail construction (*Rampart*) in Section 16 would result in a loss of mature forest and increase forest fragmentation. Glading of ski trails in the *Creek Run* pod would result in less fragmentation and mature forest removal than Alternative 2. However, the land donation (Section 21) would improve connectivity in the long term.
Impacts to Species					
Northern Spotted Owl	No impacts to owls or habitat.	Reduction in foraging and dispersal habitat – see Habitat connectivity above.	Reduction in foraging and dispersal habitat – see Habitat connectivity above.	Reduction in foraging and dispersal habitat – see Habitat connectivity above.	Reduction in foraging and dispersal habitat – see Habitat connectivity above.
Marbled Murrelet	Potential Habitat in the Study Area has a status of "probable absence." No impacts to marbled murrelets or habitat.	Potential Habitat in the Study Area has a status of "probable absence." No impacts to marbled murrelets or habitat	Potential Habitat in the Study Area has a status of "probable absence." No impacts to marbled murrelets or habitat	Potential Habitat in the Study Area has a status of "probable absence." No impacts to marbled murrelets or habitat	Potential Habitat in the Study Area has a status of "probable absence." No impacts to marbled murrelets or habitat

Table S-3:
Summary Comparison of Environmental Consequences by Alternative

Parameter	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Modified Alternative 5
Bald Eagle	Study Area lacks habitat for bald eagle – No impact to bald eagles or habitat.	Study Area lacks habitat for bald eagle – No impact to bald eagles or habitat.	Study Area lacks habitat for bald eagle – No impact to bald eagles or habitat.	Study Area lacks habitat for bald eagle – No impact to bald eagles or habitat.	Study Area lacks habitat for bald eagle – No impact to bald eagles or habitat.
Grizzly Bear and Gray Wolf	No impacts species or habitat. Species may use all habitat types in the Study Area.	Increased human presence in the summer and winter may lead to increase disturbance.	Increased human presence in the summer and winter may lead to increase disturbance. Elimination of gondola development at Alpental would reduce the disturbance compared to the other Action Alternatives.	Increased human presence in the summer and winter may lead to increase disturbance.	Increased human presence in the summer and winter may lead to increase disturbance.
Great Gray Owl and Pileated Woodpecker	No New Impacts	Impacts may occur due to construction and proposed ski area operations	Impacts may occur due to construction and proposed ski area operations	Impacts may occur due to construction and proposed ski area operations	Impacts may occur due to construction and proposed ski area operations
Habitat (acres)					
Mature western hemlock and Pacific silver fir (acres)	828.50	788.98	801.73	815.14	799.21
(Change from Alternative 1)		(-39.52)	(-26.77)	(-13.36)	(-29.29)
Mature western hemlock, Pacific silver fir, and mountain hemlock (acres)	1,053.11	1,007.83	1,025.46	1,037.45	1,020.38
(Change from Alternative 1)		(-45.28)	(-27.65)	(-15.66)	(-32.73)
Immature mixed conifer: Pacific silver fir; Pacific silver fir-sapling; western hemlock (acres)	616.07	611.54	624.10	621.84	615.79
(Change from Alternative 1)		(-4.53)	(+8.03)	(+5.77)	(-0.28)

Table S-3:
Summary Comparison of Environmental Consequences by Alternative

Parameter	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Modified Alternative 5
Deer and Elk					
Foraging Habitat (acres) (Change from Alternative 1)	1,210.4	1,244.0 (+33.6)	1,228.5 (+18.1)	1,216.9 (+6.5)	1,232.4 (+22.0)
Cover Habitat (acres) (Change from Alternative 1)	1,007.7	962.9 (-44.8)	980.5 (-27.2)	992.5 (-15.2)	975.4 (-32.3)
Neotropical Migratory Bird Habitat (acres) (Change from Alternative 1)	860.2	898.0 (+37.8)	870.0 (+9.8)	860.6 (+0.4)	882.2 (+22.0)
Air Quality					
Exceed 1-hour CO Standard?	No	No Change			
Exceed 24-hr PM2.5 Standard?	No	No Change			
Exceed 24-hr PM10 Standard?	No	No Change			
Exceed Class 1 Visibility Criteria?	No	No Change			
Heritage Resources					
NRHP-eligible Heritage Resources affected?	No	No	No	No	No
NRHP-eligible Traditional Cultural Heritage Resources affected?	No	No	No	No	No
Potential effects to tribal hunting, gathering, and fishing practices: (see Wildlife and Fisheries Sections)	No Effect				
Social and Economic Factors					
Estimated Development Costs ($000,000)	0	~$48.4	~$42.4	~$45.3	~$48.4
Estimated Short-Term Employment Changes (FTE)	0	138	121	125	141
Lifts	138	121	125	138	138
Trails	8	8	8	8	8
Night Lighting	6	6	6	6	6
Buildings	190	182	190	190	190

Table S-3:
Summary Comparison of Environmental Consequences by Alternative

Parameter	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Modified Alternative 5
Utilities	16	7	16	16	16
Roads	5	5	3	5	5
Parking	0	5	5	5	5
FTE Total	0	368	334	353	368
Projected Total Employees (Change from Alternative 1)	~1,515	~2,100 (+585)	~1,950 (+435)	~1,890 (+375)	~2,100 (+585)
Recreation					
Annual Alpine Visitation (full build-out) (Change from Alternative 1)	536,846	633,803 (+96,957)	622,823 (+85,977)	597,698 (+60,852)	633,803 (+96,957)
Additional Non-Alpine Visits	0	80,000 Pulse gondola operation would resulting in new summer offering	0	80,000 Pulse gondola operation would resulting in new summer offering	80,000 Pulse gondola operation would resulting in new summer offering
Transportation					
Parking Capacity (people)	12,346	14,786	14,786	14,518	14,786
Parking Requirement (people)	13,020	16,630	16,630	15,280	16,630
Parking Deficit (people)	674	1,844	1,844	762	1,844
Parking Area:					
Alpental					
Number of Lots	7	7	7	6	7
Area (acres) (Change from Alternative 1)	7.8	7.8	7.8	6.9 (-0.9)	7.8
The Summit					
Number of Lots	12	13	13	13	13
Area (acres) (Change from Alternative 1)	39.6	49.4 (+9.8)	49.4 (+9.8)	49.4 (+9.8)	49.4 (+9.8)

Table S-3:
Summary Comparison of Environmental Consequences by Alternative

Parameter	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Modified Alternative 5
Utilities					
Domestic Water Demand (gpd)					
Alpental (gpd) (Change from Alternative 1)	28,000	34,500 (+6,500)	30,916 (+2,916)	34,500 (+6,500)	34,500 (+6,500)
The Summit (gpd) (Change from Alternative 1)	93,500	149,126 (+55,626)	117,882 (+24,382)	110,448 (+16,948)	149,126 (+55,626)
Land Use					
Land Donation (390 acres)?	No	No	Yes	No	Yes
Forest Plan Amendment – Adjust SUP Boundary?	No	Yes – 53 acres	Yes – 17 acres	Yes – 17 acres	Yes – 53 acres
Visuals					
Prescribed VQO met at:					
Snow Lake Trail	Retention – Yes	Retention – Yes	Retention – Yes	Retention – Yes	Retention – Yes
Pacific Crest Trail Looking at Summit West	Retention – No Meets Partial Retention	Retention – No Meets Partial Retention	Retention – No Meets Partial Retention	Retention – No Meets Partial Retention	Retention – No Meets Partial Retention
Pacific Crest Trail Looking from Summit West to Base Area	Retention- No Meets VQO of Modification and EVC of Moderately Altered	Retention- No Meets VQO of Modification and EVC of Moderately Altered	Retention- No Meets VQO of Modification and EVC of Moderately Altered	Retention- No Meets VQO of Modification and EVC of Moderately Altered	Retention- No Meets VQO of Modification and EVC of Moderately Altered
I-90 Heading West	Retention – No Meets Maximum Modification	Retention – No Meets Maximum Modification	Retention – No Meets Maximum Modification	Retention – No Meets Maximum Modification	Retention – No Meets Maximum Modification

[a] For Geology and Soils, Watershed, Fisheries, Vegetation, and Wildlife, Alternative 1 displays the existing condition with the MDP Area, which is defined as the Study Area minus the Mill Creek area. The comparison of impacts between alternatives is displayed for the MDP area only. Impacts that result from the addition of the 390 acre land donation are not included in the comparison table.
[b] Does include temporary crossings.

5.0 DECISION FACTORS

In evaluating and deciding upon the MDP proposal, the USFS is required to ensure that the proposal is consistent with management direction and Standards and Guidelines for the National Forest System Lands in the project area. In addition, the factors that will be used in making the decision include the Purpose and Need, described above, and the degree to which the alternatives address the significant issues:

5.1 STREAM CHANNELS AND FLOODPLAINS

Issue: Potential exists for projects to impact stream channel and floodplain characteristics.

Background: The South Fork Snoqualmie and Upper U. Yakima Watershed Condition Assessment describes the geomorphology of stream channels in the permit area and documents channel conditions and functions. Fire, debris flows, and other mass wasting events are natural disturbances influencing the condition of channels observed in the subwatershed. Anthropogenic influences from ski area development, timber harvest, and highway construction have further affected these streams.

Trends indicate a general improvement in channel conditions over historic conditions, but a number of desired future conditions (management goals) are not yet met. MDP proposals have the potential to further degrade channel conditions. For example, timber harvest, particularly in riparian areas, can weaken streambanks and reduce the Large Woody Debris (LWD) available to the streams. Increased vegetation removal, road construction, and slope modifications can concentrate water and increase the rate of runoff, resulting in subsequent increases in bank stress. The creation of near-stream erosion sources such as roads, regrade areas, and buried utility lines could result in increased sediment loading of streams and fish habitat.

Indicators: Length of stream channels with management concerns, changes in discharge, LWD recruitment potential, instream LWD, condition of riparian vegetation, substrate composition, floodplain connectivity, and types and extent of floodplain modifications.

5.2 RIPARIAN RESERVES

Issue: The proposed project has the potential to affect the extent and function of Riparian Reserves that are located within the ski area.

Background: The *Upper South Fork Snoqualmie and Coal Creek Watershed Condition Assessment* documented extensive alteration of designated Riparian Reserves within most of the permit area. Areas of Riparian Reserve that have been modified to a non-forest condition are as follows:

West Beaver: 68 *percent*; Ski Acres: 53 *percent*; Hyak Tunnel: 29 *percent*; Creek Run: 18 *percent*; Summit South: 59 *percent*; Source Lake: 32 *percent*; International: 44 *percent*; Upper Alpental: 27 *percent*; Summit North: 100 *percent.*

Indicators: (1) changes in the composition (acres) of vegetation within riparian areas resulting from alternatives, (2) changes in LWD within stream channels as well as LWD recruitment potential, (3) changes in stream shading, and (4) fragmentation and associated impacts on riparian dependent species (abundance and diversity).

5.3 VEGETATION

Issue: The distribution and composition of vegetation communities would be altered as a result of the proposed ski area projects. The proposed projects may affect unique vegetation communities, such as wetlands, or special-status plants. Special-status plants include Proposed, Threatened, Endangered, and Sensitive vascular and non-vascular plant species.

Background: The permit area includes vegetation communities affected by human influence and other communities existing in a more natural condition. Timber harvests in the early and mid part of the 20th century, and ski area development have influenced the existing vegetation cover in portions of the permit area. Areas of "old growth" age (older than 180 years) forest with mature forest (older than 80 years) and smaller areas of relatively undisturbed subalpine forested and nonforested communities also occur in the permit area. Maintaining an adequate distribution of native vegetation cover supports other functions associated with vegetation cover (e.g., wildlife habitat, riparian processes, erosion control, and visual aesthetics).

Occurrence of the USFS Sensitive nonvascular plant species *Schistostega pennata* has been documented in the project area. The close association of this species with old-growth forests in the Pacific Northwest is an indication of specific ecological requirements and may reflect the inability of this species to become established or maintain viable populations in younger forests.

Methods of managing vegetation on existing trails and developing new trails are other elements that influence the distribution and composition of vegetation within the permit area.

Indicators: Acreage of vegetation communities by cover type, dominant forest species, and age class for forested species. Acreage of disturbance to unique vegetation communities such as wetlands, "old growth" age forest and special status vascular and non-vascular plant species.

5.4 WETLANDS

Issue: The proposal would result in impacts to the number, size, and function of wetlands and their associated species within and adjacent to the project area.

Background: The SPAMA *Plan* has identified wetlands along the crest as being high in plant species diversity. Some wetlands within the ski area have been altered through management activities. Wetlands are critical areas for numerous wildlife and plants species, many of which are rare, sensitive, or otherwise of concern. There are known sites of USFS sensitive plant species in wetlands and their associated riparian reserves adjacent to proposed projects.

Indicators: Acreage and number of wetlands in the project area, acreage of effects to wetlands in the project area.

5.5 WILDLIFE HABITAT CONNECTIVITY

Issue: The Proposal Action could impact wildlife habitat connectivity.

Background: The Snoqualmie Pass area has been identified in the SPAMA *Plan* as a Connectivity Emphasis Area (CEA). This CEA is considered critical for providing wildlife population and habitat connectivity within all elevation zones in the north central Cascades. Maintaining connectivity corridors is critical for the viability of subpopulations north and south of I-90 as documented in the Interagency Scientific Committee Report, *Northwest Forest Plan*, and the SPAMA. Within the AMA, Snoqualmie Pass is part of one of three potential connectivity corridors across Interstate-90. It is the only high elevation corridor across I-90 in the AMA and encompasses a different assemblage of plants and animals than is found in either of the other two corridors between Snoqualmie Pass and the eastern edge of National Forest lands.

Indicators: Qualitative assessment of habitat connectivity for wide ranging species and low mobility species and its affect of species viability.

5.6 WILDLIFE HABITAT QUANTITY AND QUALITY

Issue: The Proposed Action could impact wildlife habitat quantity and quality through loss or conversion of habitat types or through an increase in the potential for disturbance from human activity.

Background: Existing habitat plays a role at both the micro and macro landscape scales. Habitat types include late successional, snags, LWD, riparian, cliff, talus, and non-forested. These habitat types may constitute an entire home range for some species or provide connectivity between habitat patches for others. Maintaining an adequate amount and distribution of habitat is essential to the viability of species found in the permit area. Projects proposed in the MDP may reduce the capability of the habitat of the identified species to function.

Several species of wildlife potentially occurring in the area are sensitive to human presence or are nocturnal. Increased human use, or use in new areas, may cause some species to avoid areas of otherwise suitable habitat. Also, the increased amount of area illuminated by night lighting may impact use of the

permit area by nocturnal species. Artificial lighting may limit nocturnal species ability to forage and migrate.

Indicators: Acreage of vegetation communities and existing wildlife habitats, acreage of habitat for special-status species qualitative assessment of potential impact to wildlife from construction and operation, including low mobility and wide ranging wildlife , qualitative assessment of the availability of coarse woody debris and snags.

5.7 RECREATION

Issue: The development of additional Nordic and alpine return trails may negatively affect the existing dispersed recreation use of Nordic Pass. The Proposed Action may also affect the Alpine Lakes Wilderness and other dispersed recreation uses such as rock climbing. The Proposed Action would provide increased recreation opportunities for users of the ski area on a year round basis, within the existing permit boundary.

Background: Grooming of existing spur roads and openings for Nordic skiing and construction of return trails for alpine skiers and snowboarders would increase use of an area historically used by Nordic backcountry skiers accessing Nordic Pass and the PCNST system (south of I-90). The quality of the backcountry experience is based on solitude and increases in skier use may have an impact on this experience. The Nordic Pass route was built by volunteers on NFSL within Section 16 as a safe place to go when avalanche activity in the area is high. Currently the trail is crossed in two places for connector trails, built by the ski area in order to connect Summit Central and Summit East. The Nordic Pass route is also crossed several times by groomed cross-country trails.

According to the 1998 Summit-at-Snoqualmie MDP, the facilities at the ski area need to be modernized in order to remain competitive and meet the public's demand for ski opportunities. In addition, the base area facilities do not adequately support existing or proposed visitation. As a result, base area crowding and long lift lines occur, degrading the quality of the guest's experience at The Summit-at-Snoqualmie during the skiing season.

The proposed increased use in the summer season at Alpental may affect Wilderness through increased use or other effects upon Wilderness along with affecting other dispersed users such as rock climbers.

Indicators: Qualitative effects of each alternative on existing and proposed recreation allocations, estimated amount and type of skier use in the area and qualitative effects of each alternative on dispersed recreation, projected visitation.

5.8 SOCIAL AND ECONOMIC FACTORS

Issue: Implementation of the Proposed Action may have social and economic effects on areas and communities within and adjacent to National Forest lands.

Background: The anticipated increased use and capacity of the project area, as a result of the Proposed Action may result in increased traffic and use in the Snoqualmie Pass area. Emergency services, criminal activity, and traffic within the area may be affected. Emergency service providers (police, fire, medical) of King and Kittitas Counties and the State of Washington may also be affected. New facility construction, and increased recreation and visitor use of the ski area, could increase business activity in local and regional communities, providing additional income and employment throughout the area.

Indicators: Population and economic characteristics of surrounding communities and other unincorporated population centers that may be affected by the project proposal (Snoqualmie Pass, Cle Elum, North Bend and Easton), market share of western Washington skiers (skier visits and other visits) and the origin of expected additional visits, costs to local, county and State entities providing emergency, law enforcement and transportation services, total costs of mitigation measures and restoration projects, additions to infrastructure (roads, water, sewer, electric) and associated costs, financial viability of the ski area, effects on local employment and income during facility construction, effects on local (Snoqualmie Pass, Cle Elum, North Bend, and Easton) and Puget Sound area employment and income from increased spending by additional skiers; increased spending by the ski area for utilities, supplies and services; and increased spending by additional ski area staff, additional local, County, and State taxes generated.

6.0 MITIGATION

The Proposed Action and alternatives include Mitigation Measures, Management Requirements and Other Management Provisions that have been established in order to minimize adverse effects. Table S-4 outlines these measures.

Table S-4:
Mitigation Measures, Management Requirements, and Other Management Provisions Proposed Under the Action Alternatives

Mitigation Measures	
MM1	Manage the mature forest in Section 16 beyond ski trails to maintain large woody debris, maintain 70% canopy where it exists, and maintain forest habitat conditions. *This Mitigation Measure would have a **moderate** effectiveness rating (Courtney et al. 2004).*
MM2	Under Alternative 3 and Modified Alternative 5 The Summit-at-Snoqualmie would donate approximately 390 acres of private land in the Mill Creek watershed for inclusion in the OWNF. The land would then be managed for LSH. The land donation would offset proposed impacts occurring within Riparian Reserves and Section 16 (*Creek Run* and *Rampart* pods). *This Mitigation Measure would have a **high** effectiveness rating (USFS 2000c).*

Table S-4:
Mitigation Measures, Management Requirements, and Other Management Provisions Proposed Under the Action Alternatives

MM3	The Summit-at-Snoqualmie will develop a Traffic Management Plan that will address traffic congestion created at peak times at the I-90 interchange; pedestrian safety in general and at identified pedestrian crossings; improvements at pedestrian crossings including illumination, signing, pavement markings, and a certified flagger; illumination requirements on SR 906; carpooling, vanpooling, transit, etc. to reduce congestion on SR 906 and at the I-90 interchanges; notifying patrons of pass conditions prior to departure, including restrictions; fee parking at approved parking lots, and its impacts to SR906; congestion that inhibits WSDOT's ability to maintain SR 906, and the blocking of emergency response vehicles; residents' inability to access to their homes due to ski patrons blocking their driveways; and general guide, outdoor advertising and motorist information signing requirements *This Mitigation Measure would have a **moderate** effectiveness rating (logic).*
MM4	Under Alternative 3 a skier trestle will be constructed along the existing Trail 49 to reduce the uphill gradient as Trail 49 crosses Hyak Creek within the existing powerline right-of-way. The trestle will be no greater than 50 feet wide and require no in-stream activities. No clearing outside of the existing powerline right-of-way will take place. Any structural supports required to construct the trestle will be located outside the top-of-bank. *This Mitigation Measure will have a **moderate** effectiveness rating (logic).*
Management Requirements	
Watershed Resources	
MR1	Field-certified, weed-free straw will be applied to a depth of 3 inches on all disturbed sites that have no other erosion control mulch prescription. Applications will be made prior to heavy rainstorms during construction and after construction is complete to protect water quality
MR2	Excess soil material from construction sites will be transported to a suitable upland site, as specified in the project-specific Stormwater Pollution Prevention Plan (SWPPP) and approved by the USFS, so that it is stored outside of stream or ditch corridors, wetlands and Riparian Buffers.
MR3	Erosion control filter fabric will be placed underneath culvert outfalls, building drainages, and rock apron drainages to prevent downslope gully erosion.
MR4	Felling and yarding of trees will occur while snow still blankets and protects the soil surface to minimize erosion.
MR5	Project-specific SWPPPs will specify the use of sediment traps above ditches, waterbars, and culvert outlets to trap sediment and prevent sediment deposition in streams. Sediment traps will be maintained and cleaned periodically (see Appendix F – Implementation, Operations, Restoration and Monitoring Plan).
MR6	In order to help maintain bank stability, native shrubs and herbaceous vegetation will be planted to achieve 80 percent cover in 5 yeas in all areas within 10 meters of the stream (see Appendix F – Implementation, Operations, Restoration and Monitoring Plan).
MR7	All Management Requirements/Constraints and Mitigation Measures listed in the Hydraulic Project Approval (HPA) MOA with the WDFW will be implemented for each project involving an HPA. Any in-channel construction will be completed during periods specified in the HPA from the WDFW.

Table S-4:
Mitigation Measures, Management Requirements, and Other Management Provisions Proposed Under the Action Alternatives

MR8	When the use of culverts cannot be avoided, they will be designed to accommodate 100-year flows, with considerations for debris, fish passage (if applicable) and passage of low-mobility, riparian-dependent species (e.g., bottomless arch culverts, if applicable). Culverts will periodically be inspected for debris jams and cleaned as necessary. Hydraulic permits will be obtained for all activities in stream channels. All channel modification proposals will be included in a project-specific SWPPP, which will be reviewed and approved by the USFS prior to construction. Documentation of alternatives considered will be required for the USFS to consider a proposal.
MR9	Project-specific SWPPPs will specify that road crossings and utility line trenched crossings of streams will be avoided where possible. Unavoidable stream crossings will be oriented perpendicular to the stream channel. If construction equipment must cross a channel, it will be limited to a one-time crossing; crossing will occur in an area that minimizes disturbance to the stream bed and banks and a temporary platform will be created to cross the channel if necessary. The USFS and the WDFW will approve all stream crossing locations and proposed methods of crossing prior to construction.
MR10	New and existing stream crossings will be monitored according to the MDP Implementation Plan (Appendix F) to verify that erosion is not initiated.
MR11	The final location and spacing of water bars and other cross-slope drainage structures and maintenance proposals for sediment control structures will be determined in cooperation with the USFS and specified in project-specific SWPPPs. Spacing and general locations of culverts will be planned by adhering to the guidelines contained in the current memorandum of understanding between the Washington Department of Ecology and the National Forests in Washington State. Where necessary, water bars will be lined with erosion control fabric, sod, and/or mulch to prevent failures prior to the establishment of vegetation. Field-certified, weed-free straw mulch will be applied. Any existing water bars disturbed during construction will be repaired.
MR12	If flooding or weather results in water quality not meeting current State standards for surface water quality, operations will stop until the conditions improve and the site stabilization has been approved by USFS personnel. Work stoppage procedures will be established in project-specific SWPPPs.
MR13	Watershed processes will be monitored according to the Implementation, Operations, Restoration and Monitoring Plan (Appendix F).
MR14	A Spill Prevention and Response Plan will be developed and approved by the USFS as part of SWPPPs. Petroleum products will not be discharged into drainages or bodies of water. No fuels will be stored within Riparian Buffers. All petroleum products will be secured in self-contained safety cans.
MR15	A Stormwater Pollution Prevention Plan (SWPPP) will be developed and approved by the USFS and then implemented for all proposed projects before any construction begins.
MR16	Water quality monitoring for parameters (e.g., turbidity, pH, temperature, etc.) before, during, and after completion of the individual projects will be performed to ensure that the BMPs in the SWPPP are followed and effective.
MR17	Clearing limits and trees proposed for removal during lift line and road construction will be reviewed and approved by the USFS prior to ground disturbance.
MR18	Erosion control fabric will be installed on disturbed areas of steep slopes around waterways as specified in project-specific SWPPPS and approved by the USFS and The Summit-at-Snoqualmie.

Table S-4:
Mitigation Measures, Management Requirements, and Other Management Provisions Proposed Under the Action Alternatives

MR19	Hay bales and silt fences will be placed immediately upslope of clearing and regrade areas to reduce the amount of surface water entering a newly disturbed area. Water bars will be constructed within the newly disturbed areas to minimize downslope water movement through the sites, and direct water away from stream channels and wetlands.
Fisheries	
MR20	Follow USFS and WDFW Memorandum of Understanding (USFS and WDFW 2005) for all projects in waters on National Forest lands in the State of Washington.
MR21	Follow WDFW streambank protection guidelines for stream crossing structures (WDFW 2003).
Vegetation	
MR22	During construction of trails in Section 16 (Summit East – *Creek Run* and *Rampart* pods), a USFS botanist, or equivalent specialist, will assist construction crews with layout of ski trails to avoid, where possible, rootwads with *S. pennata* present.
MR23	A 5-year monitoring plan will be established to record condition and abundance of the known locations of *S. pennata* within the Study Area in Section 16.
MR24	A 5-year monitoring plan will be established to record condition and abundance of the known locations of *G. douglasiana* after construction around the sensitive plant site is complete.
MR25	Place construction fence and silt fence at edge of clearing area for ski trail by the new lift terminal to restrict movement of machines and work crews in the wetland supporting *G. douglasiana* near the proposed bottom terminal of the Wildside lift.
MR26	If any new populations of special-status plant species are encountered during the construction process, work shall be suspended in that area until the MBSNF botanist is consulted.
MR27	Under the Implementation, Operations, Restoration and Monitoring Plan (Appendix F), tree removal would be selective (field-fitted in cooperation with a USFS botanist or equivalent specialist) during construction and trail clearing to maintain 70% cover where it currently exists and to field-fit around a *S. pennata* location.
MR28	Suppliers must provide annual documentation to the sale administrator indicating that the following products have been examined by a qualified inspector and deemed free of State listed noxious weeds: Straw or other Mulch, Gravel, Rock, or other fill, and Seeds (according to AOSA standards) If weeds are present in the project area, all equipment and gear must be cleaned before leaving the project area to avoid spreading the infestation further. Known infestations will be treated before ground disturbance begins. For actions conducted or authorized by written permit by the USFS that will operate outside the limits of the road prism, require the cleaning of all heavy equipment prior to entering NFSL. All areas of bare soil exposed by project activities will be revegetated if there is a risk of noxious weed invasion. Native plant materials are the first choice in revegetation where timely natural regeneration of the native plant community is not likely to occur. Revegetation criteria and specifications for this project will be followed as described in Appendix F.
MR29	An Erosion Control Plan will be included in the SWPPP for construction documents for proposed projects. The plan will include revegetation techniques and will be approved by the USFS before any ground disturbance occurs. Techniques will include redressing disturbed areas with salvaged topsoil, applying a mulch (straw or other material approved by the USFS) over the area to be revegetated, applying seed mixes as outlined in other mitigation measures, and using fertilizer where appropriate to ensure growth of germinated seeds.

Table S-4:
Mitigation Measures, Management Requirements, and Other Management Provisions Proposed Under the Action Alternatives

MR30	The Implementation, Operations, Restoration and Monitoring Plan (Appendix F) for the Study Area will be used as guidance for maintaining vegetation on ski trails during operation of facilities.
MR31	Cut trees will be stockpiled in the nearest large, open clearing such as adjacent ski trails, parking lots, and other artificially cleared areas, as specified in the project-specific SWPPP and approved by the USFS. Wetlands and sensitive plant locations will not be used to store cut logs or slash. Slash piles will also be created in the openings. Large slash piles will be burned during appropriate periods under USFS guidance to ensure appropriate seasonal fire policies are being followed.
MR32	Trail clearing techniques will include feathering, scalloping, and possibly crown topping at the trail edge to reduce the potential for windthrow. Tree removal techniques will be specified in a project-specific SWPPP, which will be approved by a USFS botanist or equivalent specialist prior to implementation.
MR33	During the engineering design phase for chairlift construction, towers will be designed to be placed outside of sensitive plant populations if engineering design allows.
MR34	Project-specific SWPPPs will specify that silt fences and hay bales from USFS-approved sources will be installed around wetlands adjacent to construction areas.
Wildlife	
MR35	Project activities generating noise above ambient forest levels or otherwise creating disturbances will not occur within occupied ungulate winter habitat (from December 1 to April 15) or within ungulate calving, fawning, or kidding habitat (from April 15 to June 15) as directed by the MBSNF Forest Plan or as determined at specific sites by a wildlife biologist.
MR36	Implement an erosion control plan, reviewed and approved by the USFS, as recommended in the Washington Department of Ecology Stormwater Management Manuals for all projects on privately owned land.
Heritage Resources	
MR37	A condition assessment will be completed biannually by the MBSNF Archaeologist or equivalent specialist, for eligible and potentially eligible historic properties to ensure that preservation objectives are met during implementation of the MDP.
MR38	MBSNF Archaeologist or equivalent specialist shall be on-site when ground disturbing activity is within 80 meters (ca. 265 feet) of site 06-05-05-00064.
MR39	Construction activity, including vegetation removal, revegetation and equipment staging and spoils piles will be excluded within 50 meters of NRHP-eligible or potentially eligible properties. If surface erosion is a concern, hand seeding and mulching may be approved within the property accordance with MR1 after coordination with the MBSNF Archaeologist or equivalent specialist.
MR40	If site 06-05-05-00087 could be disturbed by utility trenching or any other activities, testing and further analysis of the site will take place to determine if it is eligible to the NRHP. If the site is determined eligible and cannot be avoided, the SHPO and the ACHP will be consulted regarding mitigation measures, and a Memorandum of Agreement will be developed to address effects.
MR41	If any previously unidentified heritage resources are identified or encountered, or if an identified heritage resource is affected in an unanticipated way at any time during the implementation of the MDP, work shall be suspended in the area of the find and efforts shall be made to protect the resource until the Forest Archaeologist is notified and the requirements of the USFS pursuant to the Programmatic Agreement or regulations in place at the time are met.

Table S-4:
Mitigation Measures, Management Requirements, and Other Management Provisions Proposed Under the Action Alternatives

MR42	The Summit-at-Snoqualmie shall notify the Snoqualmie Tribe Cultural Department, or agreed-upon representative, of the implementation and/or construction schedule for all projects approved under the MDP, to allow them to have a Tribal monitor present during the project.
Other Management Provisions	
Climate and Snow	
OMP1	For all structures and facilities located within and adjacent to avalanche slide paths, The Summit-at-Snoqualmie will hire qualified avalanche zoning experts to perform site-specific avalanche dynamics studies before the site location and design is finalized.
Geology and Soils	
OMP2	Manage stormwater runoff at construction/grading sites to limit stormwater/soil exposure sediment loss (see Appendix G – Conceptual Stormwater Management Plan).
OMP3	Replant all disturbed areas as rapidly as possible minimizing the length of time that there are bare soils associated with construction, clearing, and grading (see Appendix F – Implementation, Operations, Restoration and Monitoring Plan).
OMP4	Use site specific vegetation maintenance measures to increase success rate of restoration plantings (see Appendix F – Implementation, Operations, Restoration and Monitoring Plan).
OMP5	Maintain all new and existing roads and culverts to prevent erosion and mass wasting associated with culvert and water bar failure (see Appendix F – Implementation, Operations, Restoration and Monitoring Plan). Protect all culvert and waterbar outlets and all culvert inlets from erosion.
OMP6	New road construction would utilize best design practices to minimize erosion and slope failures (see Appendix F – Implementation, Operations, Restoration and Monitoring Plan).
Watershed Resources	
OMP7	In areas where clearing and grading are proposed adjacent to streams or wetlands, additional structural erosion control measures will be implemented as necessary above and beyond SWPPP requirements.
OMP8	Project-specific SWPPPs will specify that supplies and materials needed to complete erosion control measures will be onsite prior to initiating soil-disturbing activities.
OMP9	Crossings will be installed in intermittent channels when the channels are naturally dewatered or after diverting flow around the construction site.
OMP10	Bridge crossings will be installed above the Ordinary High Water Level in the least impactful area (i.e., narrowest spot), and also won't be built in the floodplain so there is minimized erosion impacts to adjacent wetlands and floodplains.
OMP11	Full clearing will be avoided when clearing for ski trails in Riparian Buffers. Partial clearing and flush cutting (instead of stump removal) will be practiced where practical.
OMP12	No LWD will be removed from Riparian Buffers. LWD may be removed from stream channels to protect crossing structures. LWD removed from stream channels will be placed in the adjacent Riparian Buffers.
OMP13	Approved MDP projects in Riparian Buffers will be confined within construction limits designated during project design. Compliance monitoring will be conducted by the USFS and if lack of compliance is found, additional mitigation may be required at USFS discretion.
OMP14	If grading, excavation, or soil movement is to be performed within a stream or wetland, a qualified construction monitor will be onsite to ensure that all applicable BMPs are followed. A field meeting with the construction manager, USFS, and biologist will occur before construction to select required BMPs and discuss any additional methods to minimize impacts.

Table S-4:
Mitigation Measures, Management Requirements, and Other Management Provisions Proposed Under the Action Alternatives

OMP15	No access corridors, staging areas, spoils piles, or other construction-related materials will be sited within native plant communities in Riparian Buffers, except where such communities are due to be removed as part of the project under construction.
OMP16	Wetland impacts will be minimized by maintaining the existing contours and drainage patterns in wetlands that intersect proposed ski trails.
OMP17	The number of vehicle trips across project sites will be limited to the minimum necessary. Existing/proposed roads will be used to convey construction equipment and materials to individual project sites.
OMP18	Existing and future sources of coarse organic debris will be preserved whenever possible to enhance organic matter, nutrients, and surface roughness in soils. Where possible felled trees or snags will be buried near their origin to maintain long-term sources of organic matter, consistent with other mitigation measures. When grading ski trails, coarse organic debris will be collected and stockpiled along with topsoil. Organic debris will be redistributed and stabilized by partial burial when re-dressing the site with topsoil.
OMP19	Trees (including live trees and snags) will be felled within Riparian Buffers only (1) to construct approved MDP projects or (2) to maintain safety. For approved MDP projects, the specific trees to be felled will be designated during the design process and the USFS consulted for approval that the design does minimize tree removal. Where possible, trees will be felled so that the fallen tree may be left in place on the ground. Where possible, trees will be topped rather than felled. If felled trees more than 15cm DBH must be removed from Riparian Reserves then they will be placed elsewhere in the SUP area to enhance terrestrial or aquatic habitat or soil organic matter with Riparian Reserves, unless it is determined that sufficient CWD exists in RRs by the USFS.
OMP20	Plant material and topsoil will be salvaged for use in revegetation in Riparian Reserves.
Fisheries	
OMP21	Oil, fuel, or hydraulic fluid, and sediments are a contamination source for Beaver Lake Creek near Summit West maintenance shop. Develop method(s) to contain oils and sediments to prohibit pollutants entering stream.
OMP22	Stormwater management facilities will be installed per the Stormwater Management Plan (Appendix G) in all proposed parking lots and parking lots proposed for paving on National Forest lands.
OMP23	Use best management practices for erosion and sedimentation control on all clearing and grading projects such as silt fencing, mulching, erosion control matting, diversion of surface flow (for examples see WDOE 2003).
OMP24	Replant cleared and graded areas with native species consistent with proposed uses as quickly as possible after clearing and grading has been completed (see Appendix F – Implementation, Operations, Restoration and Monitoring Plan).
Vegetation	
OMP25	Maintain existing conditions at known sites of special status plant species outside of proposed ski trails.
OMP26	During construction of trails in Section 16 (Summit East – *Creek Run* and *Rampart* pods), use selective tree removal during construction and gladed trail clearing to maintain 70% overstory canopy cover where it currently exists.
OMP27	Do not use sensitive plant locations for staging areas or storage areas during construction.
OMP28	Flag known special status plant species locations near construction areas to avoid disturbance.
OMP29	Monitor the wetland where *G. douglasiana* occurs during construction of the Wildside chairlift to ensure materials, equipment, and work crews do no encroach in the wetland.

Table S-4:
Mitigation Measures, Management Requirements, and Other Management Provisions Proposed Under the Action Alternatives

OMP30	Construction equipment will utilize existing roads or be lifted to steep slope sites by helicopter.
OMP31	Disturbed sites will be revegetated with native plants or USFS approved nonnative grass or forb species (see Appendix F – Implementation, Operations, Restoration and Monitoring Plan). Native/USFS approved nonnative species will also be used to revegetate ground disturbance areas associated with buildings, roads, and ski terminal perimeters.
OMP32	Pinned logs will be used to help stabilize soil for planting sites on road cuts. Decommissioned roadbeds will be revegetated with native grass and forb species or USFS approved erosion control seed mixes.
OMP33	During trenching for utility installation, the upper 6- to 12-inch sod layer will be removed in a separate lift so it can be reapplied on salvaged topsoil. Construction mats and low-pressure tires will be used when driving across wet soils to dig the trench and install utility lines.
OMP34	Trees will be felled away from special-status plant populations. Ground disturbance will be minimized during removal of logs and slash. Understory vegetation will be left in areas that are cleared but not regraded.
OMP35	Large trees will be retained where possible. Small trees and shrub vegetation will be retained along edges of ski trails where possible to create a feathered edge of vegetation. Where possible, trees will be removed over a sufficient snowpack.
OMP36	Where feasible, vegetation disturbance will be minimized by bringing construction materials and equipment to the project site over a sufficient snowpack. Helicopters and existing access roads will be used to minimize disturbance during construction.
OMP37	Construction contractors will be notified of sensitive avoidance areas during pre-construction field meetings. Onsite biological monitors will ensure avoidance areas are being maintained during construction
OMP38	Wetlands and locations of special-status plant species will not be used for construction staging areas. Where feasible, vegetation disturbance will be minimized by bringing construction materials and equipment to the project site during snowpack. Helicopters and existing access roads will be used to minimize disturbance during construction.
Wildlife	
OMP39	To reduce potential impacts to mature forest, avoid clearing buffer areas of parking lots, roads, and buildings within mature forest habitat to the extent feasible and design utility trenching such that overstory trees do not have to be removed.
OMP40	Removal of snags and down woody material will be restricted to that necessary to meet safety standards. Where possible, snags will be topped instead of removed. Large down woody material will be left where felled whenever feasible.
OMP41	To avoid impacts to nesting spotted owls in areas adjacent to the Study Area, all helicopter access and egress routes will be planned such that they avoid passing over known and historic nest sites outside of the SUP area at an altitude of less than 250 feet above the canopy.
OMP42	In areas where additional night lighting is proposed, directional lighting designed to reduce ambient reflection or night glare will be used to reduce potential impacts to nocturnal animals.
OMP43	To minimize potential impacts to nesting birds, including woodpeckers and other primary cavity excavators, olive sided flycatchers, and neotropical migratory birds potentially occurring in the Study Area, habitat disturbing activities associated with construction and maintenance will occur only between the dates of August 1 and March 15 and while snow is present on the ground, unless otherwise agreed to with USFS personnel and based on conditions.

Table S-4:
Mitigation Measures, Management Requirements, and Other Management Provisions Proposed Under the Action Alternatives

OMP44	Where new culverts are installed or old culverts replaced, bottomless arch culverts or bridges will be used where feasible to maintain habitat connectivity for low-mobility, riparian-dependent species.
OMP45	A public education program will be implemented by Ski Lifts, Inc. in cooperation with the USFS to encourage observation of wildlife and to discourage harassment and feeding of wildlife. Special emphasis will be placed on avoiding disturbance to mountain goats during the kidding season and to elk during the calving season.
OMP46	All food and garbage associated with development and operation of the ski area will be controlled by using bear proof containers.
OMP47	Small slash piles will be left in place for wildlife use.
Air Quality	
OMP48	During construction under dry conditions, water will be applied to work roads and exposed soils to minimize dust and PM_{10} emissions. Prompt revegetation including seeding, mulching, straw matting, etc. will be implemented to reduce or eliminate long-term emissions per the Implementation, Operations, Restoration and Monitoring Plan (Appendix F).
OMP49	Chipping, lopping, scattering, and light broadcast burning of wood material will be implemented wherever practical. Pile burning will only be used where necessary. Any slash burning will be carried out under USFS guidelines and state permitting procedures, with appropriate fire control measures.
OMP50	Burning permits will be obtained for all burning. Burn piles will be ignited under good-to-excellent ventilation conditions. Operations will be suspended under adverse dispersion conditions, or during weekends from July 1 to Labor Day.
OMP51	Construction will be phased over an extended period (ten years) to minimize air quality impacts occurring at single time.
Heritage Resources	
OMP52	Grading or excavating for lifts and trails will not be allowed within the PCNST corridor. Utility crossings over the PCNST will be restored to pre-construction conditions.
Recreation	
OMP53	Temporary signage will be posted at PCNST trailheads to warn users of construction activities, and if necessary, alternative routes will be provided.
Utilities	
OMP54	Limit the amount of open trench exposed; complete installation as quickly as feasible; compact trench fill to retard potential for erosion; revegetate or provide other means of retarding potential for erosion. If a segment of trench is located in an area where flows may concentrate, install water bars or other means to divert or disperse water away from the trenched site.
Standard Operating Procedures	
OMP55	Construction documents will be prepared and stamped by a professional engineer, as necessary, and approved by the USFS.
OMP56	For each project, a SWPPP will be prepared with a list of site specific mitigation measures (including those from this table and others as deemed appropriate). This plan will be approved by the USFS prior to implementation of any project.
OMP57	Construction will not begin until authorized by the USFS and approved by all applicable Federal, State, and local agencies.
OMP58	In addition to the Implementation, Operation, and Restoration Monitoring Plan, The Summit-at-Snoqualmie will provide routine environmental (and other) monitoring of construction sites to insure that all permit conditions and mitigation measures are met.

Table S-4:
Mitigation Measures, Management Requirements, and Other Management Provisions Proposed Under the Action Alternatives

Transportation	
OMP 59	The Summit-at-Snoqualmie will make a good faith effort to increase the use of busses and car pools by increasing preferential car pool parking areas, working with Metro and others to increase bus service on weekends, providing incentives for those that take the bus, and by promoting bus and car pool use through various means (including the ski area website).

7.0 MONITORING

Monitoring of all construction activities would be carried out according to the MDP – Implementation, Operations, Restoration and Monitoring Plan (Appendix F), which combines elements typically found in a vegetation management plan, road management plan, monitoring framework plan, and watershed restoration plan. The overall objective of this plan is to simplify the implementation of the MDP for The Summit-at-Snoqualmie and the USFS by providing one document that provides all necessary information in an organized and sequential order.

The guidelines contained in the IORMP have been developed to ensure that the MDP is implemented in manner consistent with Standards and Guidelines contained in the MBSNF Land and Resource Management Plan (USDA 1990a), and the WNF Land and Resource Management Plan (USDA 1990b), as amended (see Section 1.2.1 – Tiering to Previous NEPA Analyses).

An Annual Monitoring Plan will be developed in conjunction with the Annual Construction Plan. The Annual Monitoring Plan will contain contingencies for the development of future construction plans based on fulfillment of monitoring goals and objectives for the previous year's construction plans. Future construction phases may be delayed until the USFS determines that all monitoring goals and objectives for the current year's monitoring plan have been completed.

Specifically, the monitoring plan will also include separate site scale monitoring approaches for construction, operation, and restoration monitoring. Site-scale monitoring requirements would be specified for individual projects in the SWPPP for each project. Specific types of projects may require special monitoring conditions to meet applicable permits from regulatory agencies (i.e., wetland construction and restoration). Accordingly, subsections for these activities have been developed in order to aid The Summit-at-Snoqualmie and the USFS in implementing the monitoring program so that these requirements are met. Specific site scale monitoring plans will be developed as specific project information is developed for the Annual Constructions Plans.