United States Department of Agriculture

Forest Service

Pacific Northwest Region - Pacific Southwest Region

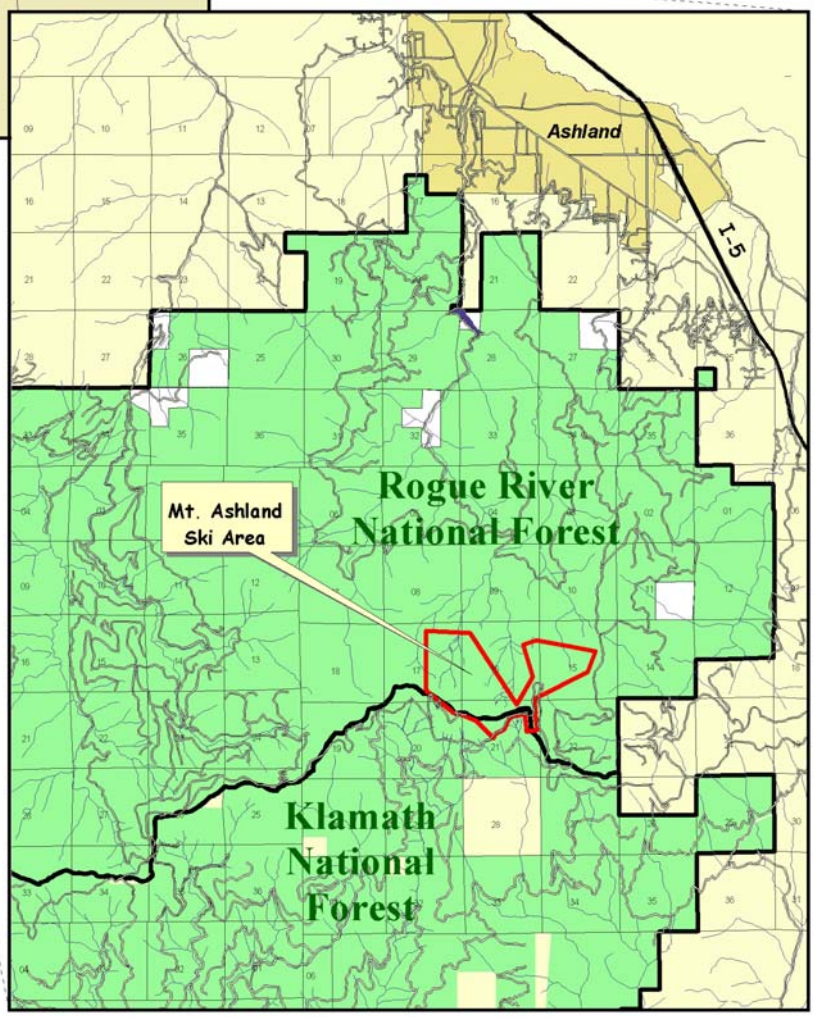
September 2004

RECORD OF DECISION

Mt. Ashland Ski Area Expansion

Rogue River -Siskiyou National Forest
Ashland Ranger District

Klamath National Forest
Scott River Ranger District



RECORD OF DECISION

MT. ASHLAND SKI AREA EXPANSION

FINAL ENVIRONMENTAL IMPACT STATEMENT

Pacific Northwest Region
Rogue River-Siskiyou National Forest
Ashland Ranger District

Pacific Southwest Region
Klamath National Forest
Scott River Ranger District

Jackson County, Oregon

September 2004

Lead Agency:	USDA Forest Service Rogue River-Siskiyou National Forest
Responsible Official:	Scott D. Conroy Forest Supervisor
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INTRODUCTION

This Record of Decision (ROD) documents my decision and rationale for the selection of a course of action to be implemented for Mt. Ashland Ski Area Expansion. The Final Environmental Impact Statement (FEIS) was issued August 2004, concurrent with this ROD. The FEIS documents analysis of a site- specific project proposal to expand a portion of the Mt. Ashland Ski Area. This proposal and analysis is tiered to the *Final Environmental Impact Statement* (FEIS) and its *Record of Decision* (ROD) *for Mt. Ashland Ski Area*, released in July of 1991. The focus of this analysis is on a March 2002 proposal to develop a portion of the ski area programmatically approved in the 1991 "Master Plan".

The 2004 FEIS for Ski Area Expansion analyzes options for authorizing expansion activities at this time, including the No-Action option. The FEIS is prepared in accordance with the National Environmental Policy Act (NEPA), and the regulations for implementing the procedural provisions of NEPA (40 CFR parts 1500-1508). This Forest Service analysis involves categories of Federal actions (decisions) that procedurally require the preparation of an EIS (FSH 1909.15, section 20.6). The FEIS contains analyses that are consistent with NEPA and the CEQ regulations (40 CFR 1500).

The Rogue River-Siskiyou, and Klamath National Forests are jointly responsible for public land management of the Special Use Permit area. The Rogue River-Siskiyou National Forest has been authorized to make decisions regarding implementation of ski area expansion activities at Mt. Ashland under the terms of a February 4, 2004 Intra-Agency Agreement (No. 03-IA-11061002-005), between the Klamath National Forest (KNF) and the Rogue River-Siskiyou National Forest (RR-SNF). Under this agreement, "The Rogue shall...Accept, analyze and approve permittee's project proposals and improvements, and administer all winter sports related Special Use Permit Activities. This includes, but is not limited to, all NEPA document and the future management of the Ski Area as defined on the Special Use permit map encompassing Klamath National Forest System Lands." The Responsible Official (the Decision Maker) for this ROD is therefore the Forest Supervisor of the Rogue River-Siskiyou National Forest. The RR-SNF is the lead unit for this NEPA analysis and the Ashland District Ranger under delegated authority from the Forest Supervisor has led the analysis, guided the interdisciplinary team and coordinated the public involvement process.

Background

The Mount Ashland Ski Area (MASA) is an existing winter sports recreation area located within the Siskiyou Mountains in Southern Oregon on National Forest System Lands (NFSL), and is operated under special use authorization issued by the Rogue River-Siskiyou National Forest, Ashland Ranger District (see Vicinity Map, inside front cover). A small portion of the ski area is located on the Klamath National Forest. MASA is located about 7 air miles south of the City of Ashland, primarily within the Ashland Creek Watershed (see Map I-1). This municipal watershed serves as the source of drinking water for the City of Ashland.

Ski area construction began in 1963. The currently existing ski area development consists of a day lodge, a ski rental shop building, ancillary structures, four chairlifts, and approximately 123 acres of ski runs. A parking lot for approximately 550-600 vehicles is located south of the lodge along Forest Road 20. The legal location description for all actions being considered is T. 40 S., R. 1 E., within portions of sections 15, 16, 17, 20, 21, and 22, W.M., Jackson County, Oregon.

The Mt. Ashland Association (MAA) currently leases the ski area from the City of Ashland, holder of a Forest Service Special Use Permit (SUP) for the MASA. According to its bylaws, MAA operates the ski area for the City of Ashland as "a non-profit corporation organized under the laws of the State of Oregon exclusively to provide educational and recreational opportunities in Jackson County, Oregon, to members of the general public."

MAA is proposing this expansion, and is therefore the "proponent". MAA is responsible for all financial aspects of construction of improvements related to proposed ski area expansion. The role of the USDA Forest Service is to analyze a Proposed Action as it would affect National Forest System Lands and to consider authorization of MAA to implement actions. The Forest Service has not invested public funds to propose and design an expanded ski area; the responsibility for this lies with the proponent. The Forest Service has the responsibility (and obligation) to analyze a proposal for an action on Federally managed lands and to conduct analysis under NEPA, that would determine the appropriateness of authorizing action.

Purpose and Need

The overall objective for MASA expansion proposal is two fold: 1) Provide facilities necessary for an enjoyable and diverse recreation experience, which would ensure long-term economic viability of MASA and maintain the competitive position of MASA with other ski areas in the local and regional market, and 2) Maintain and/or take advantage of opportunities to restore the conditions in the four affected sub-watersheds and be consistent with Forest Plan direction.

The Forest Service overall Purpose and Need focuses on maintaining and/or enhancing environmental resources and providing the public quality recreational opportunities in an outdoor natural setting on NFSL. The basis for accomplishing this is contained in Federal laws and Forest Service policy directives, the Forest Plans, and the Special Use Permit. This direction also provides the Forest Service the authority for ski area management on National Forest System Lands.

Therefore, the underlying Forest Service *Need* is:

- To respond to a proposal by MAA that would expand facilities at this time, within the designated Special Use Permit area, and in accordance with the programmatic Master Plan approval made by the 1991 ROD/FEIS.

In the environmental analysis documented in the FEIS, the Forest Service evaluates the MAA proposal and develops and considers alternatives to it in such a manner as to ensure compliance with applicable laws, regulations, policies and direction, and to maintain consistency with the 1990 Rogue River Forest Plan as amended by the Northwest Forest Plan, and the Klamath National Forest Plan. In the 1991 ROD and FEIS, the Forest Service decided that expanding MASA was an appropriate use of NFSL (see FEIS Chapter I, Section D). In this current process, the Forest Service is responding to a modified request (March 2002) by MAA to allow construction of some of the expanded ski facilities programmatically approved in 1991.

The proponent, MAA, has designed and submitted a proposal for action that would provide those facilities necessary for enjoyable skiing and a diverse and safe recreation experience. MAA, believes that:

- Operations and economic viability at the MASA would be enhanced by construction of proposed new facilities, which are intended to bring the ski area up to date relative to ski industry terrain and safety standards.

The Proposed Action would accomplish this by addressing existing shortcomings at MASA to meet current skier and future use expectations for a quality recreation experience, and would position MASA to take advantage of potential future growth in the local and regional skier market. This, in turn, would allow the ski resort to remain competitively viable within their market niche into the future. The Forest Service agrees that this proposal would meet the stated objectives and has agreed to consider options for meeting them.

Although the Forest Service and MAA have separate needs and objectives for the Proposed Action, they are connected through a committed long-term partnership to provide quality recreation opportunities on NFSL. By satisfying current and future visitors, MASA would remain a healthy and competitive ski resort. This would help fulfill Forest Service policy, objectives, and direction for ski area management in the respective Land and Resource Management Plans.

THE DECISION

As the Responsible Official, it is my decision to select Alternative 2 as described in the FEIS for expansion at the Mt. Ashland Ski Area, with the following modifications:

1. In general, I am selecting Alternative 2 with the ski run configuration associated with Alternative 6 (see Description of Decision, and Decision Rationale, below). Based on FEIS Alternative 2, this modification results in the inclusion or addition of the following runs:

    Run 12 (Alternative 6 version)
    Run 12B (Alternative 6 version)
    Run 14 (Alternative 6 version)
    Run 19
    Run 18G

    Based on FEIS Alternative 2, this modification results in the deletion of Run 11.

2. In the area of the Lower Run 12 Creek and Wetland Crossing, I am requiring use of a specified crossing (Component IM-3) as associated with Alternative 6, which will use log footings, as opposed to excavated concrete footings.

3. My decision will require use of a lightweight, low ground pressure machine (e.g., a "spider") for run clearing (and other excavation work associated with clearing for lifts; lift towers and creek crossings, except where accessible by road). This relatively light (16,000 pound) excavator can be air lifted in and out of construction sites.

4. As a safety feature in combination with the Skiway Egress Route (R-18), I am authorizing Helispot IH-1, as associated with Alternative 6.

Overall, my decision is a "blend" of components and requirements contained and associated with FEIS Alternative 2 and 6. I have added low impact "glading" to my decision (R18G as described in FEIS Alternative 3). My decision will minimize environmental effects predicted under Alternative 2, by modifications that are associated with Alternative 6. My decision will have a high level of attainment of Purpose and Need (see below) with ski area expansion in the Middle Fork Area.

My decision is based on components that were analyzed in the FEIS, primarily those associated with Alternative 2. My decision modifies the extent of consequences predicted for FEIS Alternative 2. There are no unique combinations of treatments that would cumulatively add to greater or substantially different consequences than those analyzed in the FEIS. The overall effect of my decision to select and implement a Modified Alternative 2, will result in effects that are equal to or less than those described for Alternative 2 in the FEIS. The rationale for my decision is described in the Decision Rationale section of this ROD. A complete description of my decision follows.

DESCRIPTION OF DECISION

Under my decision (Modified Alternative 2), the Forest Service will authorize MAA to implement a variety of facilities improvements. Projects being authorized include: construction of a new chairlift and associated skiing terrain within the western portion (the Middle Fork area) of the Special Use Permit area, additional skier service facilities, a surface lift providing Novice access to the proposed runs, a short chairlift in the vicinity of the Base Area to better utilize existing terrain, a snow tubing area, additional parking, necessary supporting infrastructure, and watershed restoration projects.

Under Forest Service authorization, MAA will construct two chairlifts, two surface lifts, and approximately 71 acres[1] of associated new ski run terrain primarily within the western half of the SUP area (the Middle Fork area), including widening of existing runs. There will be approximately 4 acres of clearing for lift corridors, and staging areas.

[1] Estimated surface or "actual" area, expressed in acres, not including the Tubing Facility.

My decision will authorize a 4 acre tubing facility in the southern portion of the SUP area; three guest services buildings, a yurt, additional night lighting; additional maintenance access road segments; additional power, water lines and water storage tank, sewer lines; an additional snow fence, and an increase in parking by 220 spaces. Watershed restoration projects will be implemented, including structural storm water control, and non-structural controls, such as the placement of large and small woody material. All facilities will be developed within the existing SUP area, with the exception of some of the restoration projects.

Based on the description of various components contained in the FEIS (Chapter II, Section F), the following table lists components and features that are included and authorized for ski area expansion under my decision:

Table ROD-1. Expansion Components and Features - Modified Alternative 2

COMPONENT CATEGORY		REFERENCE	DESCRIPTION
Buildings		B-2a B-2b B-3 B-8 B-9	Ticket Building, Skier Plaza Arrival Services Building Moraine Lodge South Ridge Tubing Facility Yurt South Ridge Tubing Facility Toilets
Parking		P-1 P-3	Parking Lot Expansion South Ridge Tubing Facility Parking
Lifts	Chairlifts	LC-6 LC-14	Middle Fork Lift Poma Lift
	Surface Lifts	LS-12 LS-15	South Ridge Tubing Lift Rodger's Way
Infrastructure	Roads	IR-1 IR-5	Falstaff Summer Work Road South Ridge Tubing Facility Road
	Power	IP-1 IP-3 IP-5 IP-7 IP-8	Moraine Lodge/LC-6 Lift South Ridge Tubing Facility Poma Lift Rodger's Way Base Area Guest Services Buildings
	Potable Water and Wastewater	IW-1 IW-3 IW-4	Moraine Lodge Base Area Guest Services Buildings South Ridge Tubing Facility
	Night Lighting	IN-1.1 IN-2	Bottom South Ridge Tubing Facility
	Emergency Egress	R-18 IH-1	Skiway Helispot
	Miscellaneous	IM-1	Circe Snow Fence
		IM-3	Lower Run 12 Creek and Wetland Crossing
Snowplay		S-1	South Ridge Tubing Facility
Runs	New Runs	R-9 R-10 R-10A R-12 (Alt. 6 version) R-12B (Alt. 6 Version) R-13 R-14(Alt. 6 Version) R-15 R-16 R-16A R-17 R-18 R-18G R-19 R-20 R-20A	Low Intermediate/Novice Intermediate/Expert Intermediate Novice Intermediate Novice/Intermediate Intermediate Expert Novice Intermediate Advanced Intermediate Novice Expert Intermediate Low Intermediate Novice

Table ROD-1. (Continued)

COMPONENT CATEGORY		REFERENCE	DESCRIPTION
	Widening of Existing Runs	R-23 R-24 R-25 R-26 R-27 R-28 R-29	Sonnet/Blossom (Widen and Recontour) Lower Juliet Romeo Lower Winter Lower Tempest All's Well Lower Caliban
Restoration	Watershed Projects	WA-1 thru 4; WA 6 thru 13, WN-1 thru 7, WC-1 thru 3, WG-1	Ashland, Neil, Cottonwood and Grouse Creek Watersheds

My decision will result in the addition of approximately 71 acres of new Beginner to Expert skill level skiing terrain. Constituting an approximately 57 percent increase, the authorized terrain enlargement will combine with 125 acres of existing ski runs to provide approximately 196 acres of total terrain at MASA. My decision includes the Skiway (R-18) as skiable terrain in addition to the terrain associated with FEIS Alternative 6. My decision does not include additional grading or clearing over that analyzed in any FEIS alternative.

In total, ski run development will require and I am authorizing approximately 68 acres of tree removal. This tree removal will result in approximately 1,898 thousand board feet of commercial grade timber. My decision includes disposition of the Federal timber, commercial grade via a Timber Settlement agreement. Timber will be sold to the proponent/permittee at a predicted bid (appraised) value. All material 12 inches and smaller will be left on site for erosion control, stabilization, and soil building. Ten percent of the material greater than 12" will be left on site for erosion control measures or as coarse woody material.

My decision will include the ski area boundary as described for FEIS Alternative 6. Under my decision, the current roped ski area boundary will extend down the West Ridge to a point above the upper switchback on Road 300 (see FEIS Map IV-8; page IV-236). The West Ridge portion of the boundary remains unchanged from the current condition. It will turn north and follow the west edge of Run 15 where it would intersect the west edge of Run 12 at the top of the Upper Meadow area. It will follow the edge of Run 12 to LC-6. From that point, it will extend upward in an easterly direction along the edge of Run 9 and the Emergency Egress route (IE-1) to its junction with Rodger's Way.

My decision is portrayed on an 11 x 17 inch map (new and existing features, plotted over an orthographic photo with contours), and is included as Attachment A to this ROD. Further aspects of implementing my decision are contained in the Implementation Section of this ROD.

Required Mitigation Measures

The Forest Service is required by the Council on Environmental Quality (CEQ) Regulations for implementing the procedural provisions of NEPA to identify all relevant, reasonable mitigation measures that could improve the project. Mitigation, as defined in the CEQ Regulations (40 CFR 1508.20) includes: 1) Avoiding the impact altogether by not taking a certain action or parts of an action, 2) Minimizing impacts by limiting the degree or magnitude of the action and its implementation, 3) Rectifying or eliminating the impact over time by preservation and maintenance operations during the life of the action, 4) Compensating for the impact by replacing or providing substitute resources or environments, and 5) Rectifying the impact by repairing, rehabilitating or restoring the affected environment.

In accordance with NEPA implementing regulations, all practical means to avoid or minimize environmental harm from the alternative selected have been adopted (CFR 1505.2). Required Mitigation Measures identified herein are specific to my decision to implement specified actions identified in this Record of Decision and are based on those described in FEIS (pages II-90 through II-111). Standards and Guidelines and mitigation measures identified in the RRNF and KNF Land and Resource Management Plan as amended by the Northwest Forest Plan are also incorporated by reference as required measures.

Required Mitigation Measures made a part of my decision are identified and detailed in Attachment B to this Record of Decision and will be enacted for the authorized ski area expansion activities.

Monitoring

Monitoring of all construction and development activities is a required element of my decision and will be carried out according to the Monitoring Plan. A detailed Monitoring Plan is identified and detailed in Attachment C to this Record of Decision. This Monitoring Plan has been developed specifically to my decision, the expansion components my decision contains, and specific to the area(s) where expansion is being authorized.

The objectives of the Monitoring Plan are to monitor the implementation of authorized actions, the use of Mitigation Measures, and the effectiveness of required mitigation. The plan includes monitoring at the Project Scale (where actions occur), at the Site Scale (an area slightly larger than the SUP), and at the Watershed Scale Analysis Areas (if changes are detected at the Site Scale).

If ongoing monitoring indicates that laws, regulations, standards and guidelines or critical project objectives are not being met, the project will be modified. Knowledge and experience gained, and lessons learned from monitoring and evaluation will also be incorporated into subsequent development activities and future planning efforts (Adaptive Management).

DECISION RATIONALE

I am deciding to authorize ski area expansion with the components and features associated with Modified Alternative 2 because I believe it best meets the overall and specific elements of Purpose and Need, with acceptable physical, biological, and human environmental consequences. In making this decision, it was necessary to weigh the relative merits and consequences of each component and feature of each alternative.

My decision to select a Modified Alternative 2 reflects my intention to allow the Mt. Ashland Ski Area to expand the number and variety of winter uses it serves, while protecting the environmental qualities and recreational attributes that make Mt. Ashland a unique, special place. The following discussion elaborates on my decision and rationale for my decision by ski expansion component types. Reference to specific ski expansion components is based on those presented in FEIS Chapter II.

Buildings

I authorize construction of new buildings in the Base Area (Ticket and Arrival Services) to meet the need of enhancing the guest experience. Updating the quality of the existing skier services facilities (e.g., food and rental services, toilets) and increasing the quantity of services provided at MASA will better balance with the capacity of the existing and new lifts and runs. These buildings will also allow for better access for persons with disabilities. I also authorize construction of the South Ridge Tubing Facility Yurt. This facility will serve non-skiers at the Tubing Facility and provide a warm location for guests to socialize and obtain limited food and beverages without having to return to the Base Area.

Moraine Lodge

I authorize the Moraine Lodge for skier comfort and enhanced skier experience — it gives skiers an opportunity to warm up, socialize, rest, and get refreshments closer to the newly expanded ski terrain. The Moraine Lodge includes toilets, restaurant, and Ski Patrol facilities. The Lodge will meet immediate needs of skiers in the newly expanded western portion of the MASA while also improving skier circulation and reduce congestion and skier densities at the Base Lodge as well as Windsor and Comer chairlifts. It will reduce cross-mountain skier traffic and reduce the distance from the newly expanded ski terrain to guest facilities. If the permittee wishes to build this lodge, as described in Alternative 2, it is authorized but it is not required.

The biggest concern over the Moraine Lodge appears to be its contribution or threat to economic viability of the Ski Area. Therefore, I also authorize the permittee to initially install toilets and Ski Patrol facilities at this location, as described in Alternative 6. This will also reduce cross-mountain skier traffic and reduce the distance from the newly expanded ski terrain to guest facilities. Full development of the Lodge would not likely occur for several years, and then only if adequate funding becomes available to the permittee not adversely affecting economic viability of the Ski Area. My decision requires that the infrastructure (water, sewer, and electrical power) to service the Moraine Lodge will occur with Falstaff road reconstruction, regardless of timing for full development of the Lodge.

Parking

I have decided to authorize the parking options associated with Alternative 2. This parking lot expansion configuration will add 220 additional parking spaces. It remedies the existing safety and overcrowding situation and provides needed parking for the next decade's projected increase of skier visitation resulting from this authorized expansion. This action also addresses the existing need expressed by Nordic skiers seeking adequate parking for their access to backcountry skiing outside of the SUP boundary.

My decision involves Bottleneck Widening between the existing front and back parking lots to address the existing safety issue. It also includes expansion of the existing front lot by cutting into the north portion of that lot, with that cut material removed and used to as fill to enlarge the back lot. If enough material for fill is not available from the front lot and Bottleneck Widening, material will be taken from the existing Bull Gap "storage" site located along the access road. This storage area was developed in 1995 for use by Jackson County to stockpile material retrieved from the Mt Ashland access road in routine roadside ditch maintenance activities. Authorized parking lot expansion actions also includes the new parking area located east of the existing front lot for the South Ridge Tubing Facility (as described in all action alternatives except Alternative 4).

Increased parking at MASA has created an interesting debate. Some people believe that the parking proposals associated with Alternative 2 provide the best configuration for skiers. Others worry about the environmental effects of additional construction within the Cottonwood Creek watershed. Alternative 3 in the FEIS does not include additional parking (except for the small area associated with the Tubing Facility) and would effectively require shuttles or other form of mass transit. I cannot authorize or require off-site shuttles but a decision to not authorize additional parking in the SUP would effectively force this. Others argue that Alternative 2 parking is not enough and will surely be inadequate under an expanded ski area in only a few years. In FEIS Alternative 6, the parking associated with the Knoll (and Alternative 4) has been included; it offers more parking space than other options.

In FEIS Alternative 6 and Alternative 4, parking associated with the Knoll was analyzed and offers more parking space than all other options. Because I am not authorizing Knoll development with this decision, I decided not to implement the Alternative 6 nor Alternative 4 parking configuration at this time. This additional parking may be revisited in the future if Knoll development is again considered. At the point where the expanded parking now being authorized becomes inadequate, I envision that some form of mass transit (shuttles) will be necessary. I anticipate that the Forest Service would not authorize future expanded parking within the Current Facility area.

Chairlifts

I authorize the LC-6 Middle Fork Chairlift and the LC-14 Poma Chairlift, as described in FEIS Alternative 2. The Middle Fork lift in combination with the Rodger's Way surface lift (discussed below) provides Novice skiers the easiest access to the newly authorized skiing terrain in the western portion of the SUP. The Middle Fork Chairlift will relieve congestion and improve skier circulation in the terrain accessed by the Windsor and Ariel Chairlifts. Additionally, this lift will retain access to the western portion of the ski area, which is currently precluded during periods of high wind that make the Ariel Chairlift inoperable and effectively closes approximately 40 percent of the available terrain. The Middle Fork Chairlift will keep maximum skiing terrain accessible and reduce resulting overcrowding on remaining lifts and terrain during these times of high wind closure at Ariel. After considerable study and consultation with ski area designers, FEIS Alternative 2 identified the location of the Middle Fork Chairlift as the best possible for least environmental effect while also providing skier access to the new terrain being developed in the Middle Fork area for all levels of skiers. The Poma Chairlift in the vicinity of the Base Area provides for better use of existing terrain and Novice access to authorized Runs 20 and 20A.

Substantial concern was expressed over the safety, potential congestion and skiing experience associated with the Windsor to Moraine Lift (LC-13) associated with Alternative 6. Additional concern was expressed over the cost of this lift (approx. $770,000) and its financial effects of construction and maintenance, versus the surface lift (LS-15) proposed under Alternative 2. This led me to believe that LC-13 should not be part of my decision, and in combination with inclusion of the Skiway, led me to the Middle Fork and Poma Chairlift configuration.

Within the existing SUP, my decision includes tree clearing for lift corridors and their associated staging areas, excavation for installation of lift towers, and delivery of electrical power.

Surface Lifts

I am authorizing two new surface lifts as described in Alternative 2 (LS-12 South Ridge Tubing Lift, and LS-15 Rodger's Way). The South Ridge Tubing Lift, as part of the overall Snow Tubing Facility, will provide the non-skiing public an opportunity to experience this type of winter recreation. This relatively slow moving lift will safely transport guests and tubes to the top of the tubing lanes. Rodger's Way is a new surface lift located at the base of existing Windsor and Ariel Chairlifts that will provide Novice access to the newly authorized ski runs. Installing these two surface lifts will involve tree clearing for surface lift corridors and their associated staging areas, excavation for lift infrastructure, grading, and delivery of electrical power.

Infrastructure – Roads

Authorized actions for lifts and runs require the reconstruction of 0.44 mile of the existing administrative service road known as Falstaff Summer Work Road with construction of 0 .41 mile of new construction to connect the existing segments. This action is described in Alternatives 2 and 6. The Falstaff reconstruction and construction initially provides prudent access for development of actions authorized by my decision over areas previously disturbed by ski area development in 1963. Once authorized expansion activities are complete, this road will provide efficient summer access for infrastructure maintenance, resource protection, and monitoring.

Included in my authorization for roads is 200 feet of new construction for a new administrative service road for the South Ridge Tubing Facility. Once the South Ridge Tubing Facility development is complete, this road will also provide access for infrastructure maintenance, resource protection, and monitoring. Authorized use of both roads is for administrative vehicles only.

Infrastructure – Power

I authorize delivery of electrical power from the existing supply as needed for all actions authorized by this ROD. This includes power delivery to the Ticket Building, Arrival Services Building, Moraine Lodge, South Ridge Tubing Facility (yurt, toilets, surface lift, night lighting) LC-6 Middle Fork and Poma Chairlifts, and Bottom Run night lighting. Connection will be made to existing power supply infrastructure with underground electrical line installation to occur in previously disturbed areas, and/or during times of initial construction at the time of site disturbance.

Infrastructure – Potable Water and Wastewater

Waterlines, associated water storage tanks, and sewer lines are authorized for all actions in this ROD to serve the potable water and wastewater delivery needs of the Moraine Lodge and Base Area Facilities. Potable water will be delivered from the existing source near Pumphouse Creek and wastewater will be delivered to and processed by the existing Wastewater Treatment Facility.

Water and sewer line construction, where located on the Falstaff Road, will occur during the time of initial construction and reconstruction of this road at the time of site disturbance. Water storage will be located near the top terminal of the Comer chairlift in an area previously excavated.

Infrastructure – Emergency Egress

After considerable examination of safety needs, options, and DEIS public comment, I have decided to authorize the R-18 Skiway as described in Alternative 2 for the primary purpose of emergency egress from the newly expanded skiing terrain of the western portion of the MASA. Currently, there exists less than optimal egress for transporting injured skiers from the base of the mountain to the access road at the top, and with my decision to develop this portion of the SUP, this situation is improved. This route will involve tree clearing, grading and stabilizing of an approximately 40-foot wide route with an outslope of 5-10%. This outslope will be groomed during the ski season to a near level surface.

The slope gradient of the Skiway meets a secondary purpose of providing suitable terrain for Novice skiers. When not in service as an egress route, the Skiway can provide excellent access to the base of the Middle Fork Chairlift for access to the newly authorized runs in the western portion of the ski area.

Authorized vehicles for this route are administrative only: Groomers will prepare the snow surface to provide a near-level outslope. Snowmobiles will be used by the Ski Patrol to extricate injured skiers and by other ski area operations personnel to perform normal duties associated with operating a ski area (e.g., transportation of equipment and supplies). Summer vehicle access is authorized for ATVs for maintenance purposes. Alternative 6 analyzed an egress option (IE-1) similar to the Skiway but 12 feet narrower in width. This adequately met the need for emergency egress, but relinquished the secondary and dual opportunity to increase Novice terrain, a primary purpose of this expansion effort.

Infrastructure – Lower Run 12 Creek and Wetland Crossing

I am authorizing the specified creek crossing, IM-3, of Alternative 6 which will use log footings and requires a lightweight, low ground pressure machine for construction because of the soil and water protection these requirements provide. The creek crossing location of Alternative 6 and Alternative 2 are identical but I did not choose Alternative 2 because of its more environmentally invasive excavated concrete footings.

This alternate design for the bridge foundation utilizes on-site logs from ski run clearing for bridge abutments without the need for large excavations needed for concrete footings. Prepared logs will be placed parallel to the stream on both sides of the crossing with bridge decking spanning the creek.

Infrastructure – Circe Snow Fence

My decision also includes construction of a snow fence on Circe (adjacent to Ariel) to augment snow depths at this wind-scoured location. Snow collected from the fence will be used for grooming purposes at the Ariel unloading area and uppermost portion of Upper Dream.

Infrastructure – Ski Area Boundary

Not to be confused with the SUP boundary, which remains unchanged, I am authorizing a ski area boundary as described on ROD page 5. This location is associated with Alternative 6. I am requiring MAA to retain the current ski area boundary along the West Ridge. This will involve digging post holes, stringing rope and posting signs. If adhered to by downhill skiers it will reduce existing interaction conflicts between downhill and Nordic skiers, and also reduce the need for search and rescue response for lost skiers. Also, if adhered to by skiers and properly enforced, this boundary change will keep most lift-served skiers off of an additional 25 acres of Mt. Ashland lupine habitat.

Under my decision, lift-served skiers will be prohibited from using the southwest side of Mt. Ashland. Current use on the southeast side of Mt. Ashland (above the Mt. Ashland Campground) outside of the ski area boundary will still be allowed for lift-served skiers.

Snowplay – South Ridge Tubing Facility

I authorize the South Ridge Tubing Facility, which includes a yurt, toilets, a parking lot for approximately 20 vehicles, a surface lift, night lighting, power, 4 acres of tree clearing, and a 200-foot administrative service road. The Tubing Facility provides much needed non-traditional terrain and a diversity of recreation opportunity for non-skiers. Tubing or sledding is not allowed on the alpine ski slopes because of safety considerations. There is no other place in Jackson County for lift-served tubing.

Ski Runs

My decision will result in approximately 71 acres of new Beginner to Expert skill level terrain, constituting approximately 57% increase over the existing 125 acres for a total of 196 acres of total developed terrain at MASA. With this decision, there are approximately 15.4 acres of existing ski runs where ability level changes to lower level terrain (this is the same as Alternatives 2 and 6), resulting in terrain distribution that is closer to industry standards and at more appropriate slope gradients for standards associated with Beginner terrain (see Table ROD-2 for terrain percentages compared to industry standards resulting from my decision).

I chose the run configuration of Alternative 6 in the Middle Fork area because compared to Alternative 2, the fraction of the Middle Fork area spruce grove that would be cut is less, 1.0 acre instead of 1.8 acres. This is because the location of Runs 14 and 12 has been shifted in a manner that avoids more of the spruce trees and wetland and further minimizes fragmentation of the spruce wetland plant community. Direct effects to wetlands are also reduced, 0.5 acre instead of 0.8 acres out of the 43 acres within and adjacent to the Special Use Permit area

While some of the main features of Alternative 6 are problematic, the overall ski run configuration associated with Alternative 6 appears to be better, both in attainment of Purpose and Need and environmental consequences. Certain run locations and the way runs cross the Lower Wetlands area are more desirable because of the environmental protection they offer. For these reasons, I have selected the inclusion of Run 12B (Alternative 6 version), and Run 14 (Alternative 6 version). I am also including Component IM-3 for the Lower Run 12 Wetland Crossing and the requirement for a lightweight, low ground pressure machine for run clearing, because of the soil and water protection these requirements provide. These runs, and design and construction requirements provide greater protection to the Middle Fork and Lower Wetlands area.

Alternative 6 run configuration does not include Run 11 (an Expert Run that does not add to the need for additional Beginner and Novice terrain) and I have not included Run 11 in my decision. The run configuration associated with Alternative 6 includes Run 19. Run 19 adds Intermediate ski terrain and I am including it in my decision.

Because my decision includes the Skiway as part of the ski terrain, I have decided to include gladed Run 18G in my decision. Because of the Skiway, the area would be used and is best developed at this time. There are minimal environmental effects associated with limited small tree removal for development of this run.

Runs –Widening of Existing Runs

Some existing ski runs present unsafe conditions and do not meet current ski area safety standards relative to width, skier densities, and slope angle. I am authorizing the widening and recontouring of the Sonnet run in order to provide lower densities and more appropriate slope angles for Beginners.

I am also authorizing widening of the following runs: Lower Juliet, Romeo, Lower Winter, Lower Tempest, All's Well, and Lower Caliban. Lower Juliet has one of the highest skier accident rates on the mountain and my decision will improve this condition. The Lower Winter widening will provide a safer area for special events and competitions near the Race Building. All's Well is a highly used Intermediate run used by skiers coming from Windsor Chairlift who want access to Ariel. Widening of this run will provide for more efficient skier flow and lower densities. Romeo widening (less than 0.1 acre) involves removal of a small tree island on the run in order to provide better sight distance at this narrow section. Lower Tempest widening will provide for a safer and more efficient skier merge zone. Finally, the widening of Lower Caliban will provide easier terrain for the Novice skier and provide for safer and more efficient skier merge zones with both the new runs associated with the Middle Fork and the return to Rodger's Way. It will also contribute to lower skier densities.

Watershed Restoration

Watershed restoration projects are associated with all Action Alternatives of the FEIS analysis. Conditions associated with construction methods still exist today from the 1963 ski area development that need attention and improvement toward restoration. I am authorizing all projects analyzed in the FEIS with the exception of WA-5. Due to the authorized development of LS-15 at this location, this restoration project is not needed and development mitigation measures will assure adequate site stabilization following development. These projects are located in the Ashland, Neil, Cottonwood and Grouse Creek Watersheds and will remedy and improve existing conditions.

Other

Whitebark pine

Discovered in late August of 2003 by Dr. Frank Lang, and verified by lab analysis, I am deciding to protect the three whitebark pine that exist at MASA by not authorizing LC-13, the Windsor to Moraine Chairlift. LC-13 lift, involves a greater risk to the whitebark pine. My decision provides greater protection for and less risk to these whitebark pine trees, not currently known to exist in any other locations in the Siskiyou Mountains. .

Fire Risk and Hazard

With required slash treatments, the resultant fuel profile will be scattered concentrations of compacted and discontinuous slash that will provide soil erosion protection. Resultant fuel loadings will meet protection and resource objectives, in compliance with LRMP Standards and Guidelines. My decision will result in lower levels of fuel and lower levels of hazard over the current conditions, for areas that are cleared. As associated with development, there would be an increased risk of fire associated with human presence and ski area operations and maintenance. Since the ski area is most heavily used in the winter when the area is covered with snow, this risk is very low.

Summary

These reasons, in conjunction with the attainment of Purpose and Need that my decision provides, are the basis of and rationale for my decision. The following sub-sections expand on the attainment of Purpose and Need that my decision provides (decision factors), and further discusses the consequences of my decision in terms of the Significant Issues (indicators).

Response to Purpose and Need

Important factors in considering my decision were the response to the overall Purpose and Need and response to the Purpose elements identified in the FEIS (Chapter I). The Forest Service and MAA cooperatively determined six specific *Purpose* elements for ski area expansion at the MASA at this time. My decision includes various elements to address Forest Plan consistency, opportunities for watershed recovery, and the shortcomings at MASA. These elements of Purpose were designed to delineate the range of alternatives considered and to provide decision indicators.

Purpose #1: Terrain Balance and Diversity

One purpose for ski area expansion is to bring the terrain distribution at MASA closer to a balance as compared to ski industry standards; to qualitatively and quantitatively increase Beginner, Novice and Intermediate level skiing and snowboarding terrain; and to increase the diversity of terrain to allow for a greater variety of winter recreation at Mt. Ashland. This purpose was a key element of analysis in the 1991 Final EIS for the Master Plan.

Balance of Terrain by Ability Level

The availability of Novice to Intermediate level skiing terrain at MASA is currently inadequate, particularly for skiing groups and families with varying skiing abilities. When compared to ski industry standards, which are used to represent the public demand for terrain, MASA exhibits a deficit of Novice to Intermediate level terrain and a surplus of "best suited" Beginner and Advanced-Intermediate to Expert terrain, as shown in Table ROD-2

A specific Purpose of ski area expansion is to develop additional Novice to Intermediate level skiing and snowboarding terrain in order to address the current deficit, and to better meet the public demand for Novice and Intermediate level terrain, as expressed by industry standards.

Table ROD-2. MASA Terrain Distribution - Modified Alternative 2

Ability Level	MASA Terrain[2] (% of terrain)	Industry Standard[3] (% of terrain)	Modified Alternative 2 (% of terrain)
Beginner	2.6[4]	2	1.8
Novice	8.8	8	25.3
Low-Intermediate	0	18	4.1
Intermediate	10.7	35	21.5
Advanced-Intermediate	41.0	21	21.2
Expert	36.9	17	26.1

My decision results in terrain distribution that is closer to Industry Standards, is improved over the current condition, and is improved at the highest level of any Action Alternative.

Suitable Terrain for Beginners

The existing Beginner terrain at MASA, which comprises 2.6% of the total existing terrain, is designated based upon its low slope gradient relative to the remaining terrain at the ski area, as well as its location relative to the Base Area. The actual Beginner terrain at the upper end of Sonnet, however, includes pitches with up to 20% slope gradient, which is considerably steeper than the 8-12% slope gradient that is considered by the industry as suitable for Beginner terrain. The lower portions of the ski runs in the Sonnet area exhibit the appropriate slope gradients. However the Beginner must navigate the Novice-level slopes near the top of the chairlift in order to access the true Beginner terrain. The identified Beginner terrain at MASA is suitable for Novice skiers, but not for Beginners.

A specific Purpose of ski area expansion is to develop Beginner terrain with more appropriate slope gradients.

My decision results in terrain distribution that is closer to industry standards and at more appropriate slope gradients for the standards associated with Beginner terrain. The recontouring and resultant decreased slope gradient along with the widening will be an improvement over the current condition.

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2 Terrain distribution is based on most recent mapping techniques.

3 MASA Mountain and Base Area Specifications, SE Group 2003: DEIS and FEIS Appendix L, Recreation Analysis.

4 The existing Beginner terrain at MASA is currently not entirely suitable for Beginners, due to the steep gradient at the top of the Sonnet lift. The Sonnet area is designated as Beginner because it represents the "best suited" Beginner terrain in the current ski area.

Accessibility of Existing Lower Level Terrain

As shown in Table ROD-2, over 75% of the existing terrain at MASA is rated as Advanced Intermediate to Expert level, representing a surplus of higher level terrain as compared to ski industry standards and most, if not all, ski areas in the Pacific Northwest. This surplus of higher level terrain is partially the result of inadequate access into, or out of lower level terrain that currently exists.

For example, to reach the Low Intermediate and Novice terrain on Lower Caliban, a skier must first negotiate the Advanced Intermediate terrain on Upper Dream. As a result, Caliban is rated as Advanced Intermediate, even though it contains terrain that would be suitable for Novice and Low Intermediate-level skiers; this lower level terrain is not currently available to the Novice because access to the terrain requires a higher level of ability.

Conversely, the upper portion of Circe contains Beginner and Novice terrain, yet the only available egress is along an Advanced Intermediate to Expert pitch. As a result, Circe is rated Expert even though it contains Beginner and Novice level terrain; the lower level terrain is accessible, but a lower level skier is required to negotiate Expert terrain at the lower end of the run.

A specific Purpose of ski area expansion is to provide appropriate access to the existing lower level terrain at MASA by eliminating the requirement for lower level skiers to navigate higher level slopes.

Under my decision, there are approximately 15.4 acres of existing ski runs where the ability level changes to lower level terrain; this is the same under Alternatives 2 and 6. Lower level skiers will have access to Lower Dream and Caliban via the Middle Fork Chairlift and will not have to negotiate the steeper pitches on Upper Dream.

Special Programs and Competitions at MASA

The capacity of MASA to host special programs and competitions is currently limited by the concurrent need to accommodate the skiing public. MASA does not have sufficient ski run acreage to designate terrain for special programs (e.g., Special Olympics) and competitions (e.g., race courses), while maintaining sufficient area and skier densities for the general skiing public.

A specific Purpose of ski area expansion is to increase total available terrain at MASA, thereby allowing additional opportunities for special programs and competitions while maintaining adequate skiing opportunities for the general public.

Under my decision, there are 71 acres of new terrain. This will allow for lower skier densities (generally preferred by the skier/boarder public) while simultaneously providing the opportunity for additional special events and competitions on a wider variety of terrain.

Diversity of Non-traditional Terrain at MASA

MASA is unable to provide a diverse terrain offering at a time when the public demand is growing more and more diverse, including advances in shaped skis, twin-tip skis, terrain parks, half pipes, rails, etc. The existing acreage of ski terrain on the mountain constrains the ability of MASA to provide diverse recreational offerings that require greater open spaces (e.g., terrain parks), lower skier densities (e.g., half pipes), and off-trail skiing (e.g., gladed terrain). The current peak visitation at MASA occupies the available terrain, allowing little room for more non-traditional sliding.

A specific Purpose of ski area expansion is to increase the total acreage of available terrain, thereby allowing MASA to provide additional non-traditional attractions such as terrain parks, half pipes, and gladed terrain.

Under my decision, total terrain acreage will increase by 71 acres for traditional cleared runs and 8 acres for gladed terrain. This will allow MASA to provide additional attractions such as terrain parks and half pipes. The gladed terrain will offer more advanced skiers a high quality recreation experience in areas off of traditional cleared runs. In addition, off-trail skiers and boarders will have access to a number of naturally open forests and meadows in the Middle Fork area.

Recreational Opportunities for Non-skiers

The public demand for winter recreation opportunities has grown steadily throughout the Pacific Northwest, with many ski areas providing new or expanded non-skiing facilities (e.g., tubing facilities) to meet the growing public demand for recreational offering to the non-skiing public. As a community-owned developed recreation site, MASA currently provides no non-skier oriented winter recreation opportunities to its guests.

A specific Purpose of ski area expansion is to provide non-skiing recreational opportunities at MASA to meet the current demands of the non-skiing public.

Under my decision, the South Ridge Tubing Facility will provide a non-skiing winter recreation opportunity (including night tubing) that is lacking at the current ski area. Based on reports from other areas, it is expected that the Tubing Facility may attract visitors from a broader demographic and economic spectrum than does the current ski area (Heck 97, and Lohr 2001). The terrain on the South Ridge is perfectly suited for a Tubing Facility because the average slope gradient of 22 percent falls within the ideal range for tubing.

Purpose #2: Guest Access and Circulation

Another purpose of ski area expansion is to improve guest access and circulation patterns within the ski area. This purpose was an element in the 1991 Final EIS for the Master Plan.

Lift Access

Access to much of the existing ski terrain currently requires guests to ride both the Windsor and Ariel Chairlifts. Additionally, access to the western portion of the ski area is precluded during periods of high wind, which make the Ariel Chairlift inoperable and effectively closes approximately 40 percent of the available terrain, causing increased crowding on remaining lifts and terrain.

A specific Purpose of ski area expansion is to enhance lift access to the western portion of MASA, thereby improving guest circulation and eliminating dependency on the Ariel Chairlift as the only access to the western portion of the ski area.

My decision to allow the installation of the Rodger's Way Surface Lift and the Middle Fork Chairlift will eliminate the current dependency on the Ariel Chairlift as the only access to the western portion of the ski area. This design, conceived by ski area design professionals, will enhance lift access to 40 percent of the current terrain that is inaccessible when Ariel is closed. In addition, these two lifts will provide access to the new terrain in the Middle Fork area.

Skier Density and Access to Skier Service Facilities

Areas of Advanced Intermediate and Expert terrain within the vicinity of the Ariel Chairlift exhibit relatively lower skier densities as compared to the Windsor area, due to difficult access, inefficient circulation, and distance from skier service facilities. This results in disproportionately higher densities on the more easily accessed terrain associated with the Windsor Chairlift.

A specific Purpose of ski area expansion is to improve guest access to the terrain associated with the Ariel Chairlift and to provide easier access from the Ariel Chairlift area to skier service facilities.

Under my decision, skier and boarder access to the terrain associated with the Ariel Chairlift will be improved through installation of the Middle Fork and Rodger's Way lifts. Guests will no longer need to access Ariel solely by the Windsor Chairlift. Skier densities will decrease on terrain associated with the Windsor lift. Overall guest circulation will improve due to easier access to skier service facilities (Moraine Lodge) from the Ariel Chairlift.

Purpose #3: Update and Balance Guest Services and Facilities

Another purpose of ski area expansion is to update on-mountain and Base Area guest service facilities, and to balance their capacities with the lifts and ski runs at MASA. This purpose was a key element of analysis in the 1991 Final EIS for the Master Plan.

Proportionately Sized and Efficient Skier Service Facilities

The existing skier service facilities (e.g., food service, toilets, and parking) at MASA are not proportionately sized to balance with the capacities of the lifts and ski runs, frequently resulting in inadequate restaurant seating and/or other overcrowded conditions. The existing facilities are dated and do not meet the demands of the current skiing public. Inefficient guest service facilities detract from the overall quality of the recreational experience of MASA visitors.

A specific Purpose of ski area expansion is to enhance the guest experience by updating the quality of the existing skier services facilities (e.g., food service, toilets, and parking) and by increasing the quantity of services provided at MASA, to better balance with the capacity of the existing and proposed lifts and runs.

As seen in Table ROD-3 below, my decision results in an increase amount of parking and guest services that will better balance with the capacity of existing and new lifts and runs. The guest experience will be enhanced by updating the quality of the existing skier service facilities. This is a substantial improvement over the current condition.

Table ROD-3. Skier Support Facilities- Modified Alternative 2

Projected Skier Visits Percent Increase			Parking		Guest Services	
2005/06	2013/14	2023/24	Spaces[5]	Percent Increase	Square Feet	Percent Increase
6	28	45	771	40	27,100	82

Accessibility of Skier Service Facilities

MASA currently provides guest services facilities in the Base Area, located in the eastern portion of the ski area, with no on-mountain guest facility in the vicinity of the majority of the ski lifts and runs. As a result, guests skiing in the Ariel area, in the western portion of the ski area, are required to return to the Base Area to use toilets, rest, warm up, or eat within an indoor setting. This situation causes increased cross-mountain skier traffic and places an increased burden on the Windsor and Comer Chairlifts. Additionally, the concentration of skiers in the Base Area results in congestion. The distance to Base Area facilities and crowded conditions detract from the recreational experience of the MASA guest.

A specific Purpose of ski area expansion is to provide additional guest services facilities at MASA to reduce crowding in the existing Base Area, to reduce the cross-mountain skier traffic, and to reduce the distance from the ski terrain to guest facilities.

My decision to authorize the Moraine Lodge will partially relieve congestion at the current Base Lodge and provide much-needed toilet facilities on the west side of the ski area. The Building's alpine setting on the Bowl's terminal moraine will provide for an outstanding aesthetic experience for the guest because of its Rogue Valley and Cascade Mountains view. Cross-mountain skier traffic will be reduced as guests will be able to remain on the west side of the ski area to use toilets, rest, warm up, or eat within an indoor setting. Additional skier service facilities at the base area will reduce crowding at this location.

[5] This figure includes the expansion of the current parking lot plus Tubing Facility parking.

Purpose #4: Skier Safety

Some existing ski runs present unsafe conditions and do not meet current ski area safety standards. In addition, any expanded terrain and facilities must provide for safety, including emergency access or egress.

A concurrent Purpose of ski area expansion at this time is to enact improvements that will provide for and improve skier safety.

My decision provides for basic skier safety relative to (1) current runs that need widening (most specifically for safety), and (2) establishment of Run 18 (Skiway) as an over-the snow-emergency egress route plus creation of a IH-1 (helispot) near the base of the Middle Fork Chairlift. Widening of All's Well and Lower Juliet will provide for an increased safety factor for users because it will lower skier densities on these relatively narrow and highly used runs. In the case of Lower Winter, widening will increase the safety factor for competitors and spectators alike in the finish arena area, where racers are often coming through the finish line at a high rate of speed.

Professionals in ski area run design have designed or reviewed all of the proposed runs. To the greatest extent possible, they have provided for oblique merges on the proposed runs and sufficient widening in existing runs. Lower skier densities will provide greater space between skiers, thereby lessening the chance for collisions. My decision provides for rapid extrication of injured skiers, especially those with serious injuries. In addition, it allows for increased ski patrol treatment and staging areas through incorporation into other facilities, such as the Moraine Lodge and expanded base area facilities.

Purpose #5: Economic Viability and Longevity

Another purpose of ski area expansion at this time is to ensure the economic viability and longevity of this community-owned ski area. This purpose was a key element of analysis in the 1991 Final EIS for the Master Plan.

Augment and Modernize MASA Facilities

Many of the existing ski area facilities are outdated or undersized, which reduces the effectiveness of the ski area in providing a quality recreational experience for the public. The winter recreational offering at MASA is below industry standards in regard to the variety of skiing and non-skiing related facilities. The lack of quality and variety at MASA threatens the current and future economic viability of the ski area. Based on the community's purchase of the ski area in 1992, the community has a strong desire to have a local ski area that is economically healthy and stable.

A specific Purpose of ski area expansion is to augment and modernize existing MASA facilities, thus ensuring the greatest possibility for an economically viable and stable ski area with a competitive and quality recreation experience.

My decision allows MAA to augment and modernize their facilities in a manner that puts less capital at risk than the other action alternatives while returning a positive net present value under both the "Expected" and "High" visitation trend scenarios. The Financial Feasibility Analysis prepared for the FEIS was highly conservative with its high discount rate and in its borrowing and revenue assumptions. I believe that MAA and the greater community at large have a strong desire to have a local ski area that is economically healthy and stable. My decision allows for a number of projects that will provide for a competitive and quality recreation experience.

Guest Awareness and Regional Competition

The ski industry is a highly competitive, market-driven business. Skiers make decisions about where to ski based upon the quality and value of the overall experience provided. Review and analysis of national and regional market data indicate that there is an ever-increasing level of guest awareness of quality, service and value in the ski experience, particularly for the Beginners and lower level skiers.[6]

[6] UW-EMBA, 1996; RRC Associates, 1994a, 1996, 1997; Leisure Trends 1996

Ski areas that have invested in faster and more comfortable lifts, terrain expansion, increased run grooming and other quality improvements have typically maintained or captured additional market share. Conversely, lack of improved facilities has led to the erosion of market share, and a decline in skier visitation. MASA competes with other ski areas in the regional marketplace. Many of these ski areas have recently made, or are in the process of undertaking facility improvements aimed at improving the overall skier experience, particularly for lower level skiers (e.g., Mt. Shasta, Mt. Bachelor, and Willamette Pass). On this basis, MASA does not provide competitive facilities to attract Beginner and Intermediate level guests, which represent a major portion (approximately 62 percent)[7] of the skier market.

A specific Purpose of ski area expansion is to provide facility improvements at MASA in order to appeal to the broadest spectrum of the skiing and snowboarding market place, thus ensuring its economic viability and longevity.

My decision provides facility improvements that will appeal to a greater segment of the skier/boarder market, particularly lower ability-level skiers. Currently, approximately 19 percent of the terrain at MASA is Novice to Intermediate. Under my decision, nearly 50 percent of the terrain at MASA will be suited for these lower ability-level skiers. Other qualitative and quantitative improvements such as the Moraine lodge, new base area facilities, and expanded parking will appeal to a greater segment of the public and will help ensure economic viability and longevity.

Purpose #6: Maintain and Improve Trend of Watershed Recovery

Ashland, Neil, Upper Cottonwood, and Grouse Creek sub-watersheds receive flow from the MASA SUP area. These sub-watersheds, located in granitic terrain, produce high amounts of sediment to watershed streams as a naturally occurring process. Watershed Analysis covering Bear Creek (including Ashland and Neil Creeks), and Beaver Creek (including Grouse Creek), determined human caused disturbance can accelerate detrimental sediment production (USDA FS RRNF 1995b, USDA FS KNF 1996b).

Although Watershed Analysis has not been completed for the entire Cottonwood Creek watershed, site-specific analysis conducted in association with this Final EIS found similar conditions associated with its granitic terrain. These watersheds are recovering as a result of natural processes and from watershed restoration efforts aimed at stabilizing soils and slope conditions (USDA FS 1987, USDA FS 1996b, USDA FS 1997a, USDA FS 1998e).

The development of the ski area in 1963 involved a considerable amount of vegetation and soil disturbance and was long considered to be a major source of sediment to Reeder Reservoir. However, a 1978 to 1983 study determined that while the original development of the ski area was a contributor of sediment, it was not a major contributor as once thought (USDA 1987). Erosion control work continues to be an important part of ski area operations (pers. com. Meek 2002); this ongoing work along with natural revegetation has reduced areas of active erosion and is contributing to an overall recovering trend in watershed conditions in the East Fork Watershed.

A concurrent Purpose of ski area expansion is to maintain and improve the trend of watershed recovery of watersheds associated with the MASA SUP area.

A series of erosion control, watershed restoration projects are required in all four affected watersheds as part of my decision. These in-channel restoration projects may result in some unavoidable short-term, direct and indirect effects that are detrimental, but the long-term beneficial effects are expected to outweigh the short-term, detrimental effects. Restoration projects may also result in long-term, indirect effects that are beneficial to stream channels through the reduction and/or elimination of chronic sources of sedimentation and revegetation of Riparian Reserves to provide channel shade, fine litter inputs, Large Woody Material (LWM) recruitment, and bank stabilization.

[7] National Ski Areas Association, National Demographic Study, RRC Associates 1999

Response to Significant Issues

NEPA requires Federal agencies to focus analysis and documentation on the significant issues related to a proposed action. The Interdisciplinary Team with my involvement and approval, identified the following as the Significant Issues associated with the Proposed Action and analysis presented in the FEIS (pages I-33 through I-37). These Significant Issues have served as the basis for developing and comparing alternatives. The following further describes my rationale for selecting Modified Alternative 2, and the response of my decision to these issues, based on my weighing of the pros and cons of each alternative considered in detail.

Effects on Soils and Site Productivity

The removal of vegetation and ground disturbance associated with clearing for ski runs and lifts could displace and create direct soil erosion effects within the SUP area. This erosion could increase sediment production and indirectly, affect sediment delivery to streams in the Ashland Creek and/or Neil Creek Watersheds on the RR-SNF, and in the Cottonwood Creek and Grouse Creek Watersheds on the KNF.

The Soils Section in FEIS Chapter III provides a detailed discussion of soil landtypes and characteristics within the SUP area. It reviews soil erosion potential, soil erosion processes and types of disturbances that lead to erosion rates above undisturbed rates. The discussion shows how detailed erosion studies by researchers have quantified the amounts of sediments produced by various types of disturbances and reveals the expected amount of sediment that can be moved off-site in similar terrain. Research also shows that rates of sediment production are reduced within a few years after the disturbance activity. Mitigation measures can also substantially reduce erosion and sediment delivery rates.

A comparative analysis of the effects of alternatives on sedimentation to Ashland, Cottonwood, Neil and Grouse Creek sub-watersheds was performed using the *Water Erosion Prediction Project* (WEPP) soil erosion model. WEPP is a physically based computer program that considers site-specific factors such as soil texture and rock content, climate, ground cover and topographic characteristics in estimating soil erosion and sediment yield. The model is the most recent iteration in a long evolution of erosion models and is the best model currently available to describe conditions found in mountainous terrain. In spite of the model's capabilities and limitations (see FEIS Appendix H), the WEPP model is the most appropriate model to use to compare alternatives for this EIS process (pers. com. Megahan 2004).

The following text discusses annual sediment yield values derived by using the WEPP soil erosion model procedures adapted to conditions at MASA to evaluate the effects of proposed disturbances to watercourses in the Site Scale Analysis Area. FEIS Appendix H discusses the assumptions used in this evaluation. The data displayed in the following discussion should be considered worst case scenarios for average year conditions for the following reasons:

1) All disturbances are assumed to occur in the same year, however, under actual construction scheduling this would be unlikely to happen;
2) All first year values assume that there are no Mitigation Measures in place, when in fact, most Mitigation Measures would be implemented before, during or immediately after construction, and
3) Second and third year values assume lower vegetation cover than would be described for soil cover under "thresholds", established under the Monitoring Plan (see ROD Attachment C).

Overall, my decision will yield predicted sediment rates similar to those shown for Alternative 2. Skiway construction (R-18) under Modified Alternative 2 would contribute 0.34 cubic yards of sediment the first year to Ashland Creek Watershed. However, the Lower Run 12 Creek and Wetland Crossing (IM-3) is estimated to produce substantially less predicted sediment yield where construction of footings for the bridge is not included.

First year increase in sediment delivery over baseline rates from proposed actions is estimated to be 5.3 and 3.9 cubic yards to Ashland and Cottonwood Creeks respectively. Second year sediment yields would decrease to 1.2 and 0.06 cubic yards and third year to .62 and .02 cubic yards. Neil Creek watershed would not have an increase in sediment yield.

The major contributor of sediment to the Cottonwood Creek watershed would be from the parking lot expansion, with the greatest increase expected the first year after construction (3.9 cubic yards). With Mitigation Measures in place and parking lot surface paved, second year rates should decrease to 0.06 cubic yards. The creation of the new parking lot cut slope would have a slightly greater area of exposed soil after construction. As a result, there would be a negligible net increase in sediment yield after the initial two years (.03 cubic yards/year). BMPs and mitigating measures employed during parking lot expansion would further reduce sediment delivery.

Implementation of ski expansion activities could affect site productivity and/or create detrimental soil conditions (through compaction, loss of site organic matter and loss of topsoil) as a result of the operation of heavy equipment, removal of vegetation and woody material, etc.

Site productivity is defined as the ability of a geographic area to produce vegetative biomass, as determined by conditions (e. g., soil type and depth, rainfall, temperature) in that area. Specifically as related to soils in this analysis, productivity is related to the capacity or suitability of soil for establishment and growth of specified plant species, primarily through nutrient availability (FEMAT 1993).

Forest Plan direction for the SUP area specifies a goal of maintaining or improving soil site productivity in all resource management activities (RRNF LRMP page 4-1). The overall objective is to provide a suitable substrate for vegetation reestablishment, following developmental activities associated with ski area expansion. This vegetation could involve establishment, reestablishment or maintenance of forested conditions, or growth of vegetation (such as grasses or brush) that could minimize or control erosion and sedimentation, and delivery to stream courses. The Forest Plan direction for Management Strategy 4 (Developed Recreation) requires projects to address the potential for adverse soil conditions.

Specific Standards and Guidelines for MS-4 (RRNF LRMP page 4-59) do not contain specific thresholds for detrimental conditions, as is the case for many other management strategies (many of which are allocated to some level of timber growth and yield). The Regional Guidelines (FSM 2521 R-6 Supplement 2500-98-1, Effective August 24, 1998), for soils also do not specifically apply to certain areas such as developed recreation sites (e.g., developed ski areas). The reason for this is likely due to the fact that many of the specific features and structures associated with recreation areas (e. g., paved roads and parking lots, or footings for ski lift towers) could not be constructed to result in limited disturbance below specific thresholds, as is the goal in forested areas. Nevertheless, concern for soil site productivity is an important consequence of ski area expansion and is analyzed and consequences disclosed in the FEIS. The primary disturbance mechanisms that could affect soil site productivity of the SUP area are compaction, loss of site organic matter, and loss of topsoil.

Soil compaction is the increase in soil bulk density, decrease in soil porosity, or increase in soil strength caused by the application of mechanical forces such as weight and vibration of large equipment. Use of an excavator to place logs on ski runs and to excavate foundations or footings would be the primary source of compaction.

Loss of organic matter occurs when extensive amounts of woody material, branches, soil duff and litter are removed from the soil surface. Aside from new road construction, building and tower construction, extensive removal of organic matter is not included in my decision. While yarding and removal of some logs during ski run construction would occur, there would nevertheless be an overall increase in the amount of woody material in the form of branches, needles and large wood on the surface of affected soils. This material would decompose and contribute to the total soil organic matter over time. Under my decision there would be an increase in organic matter on the surface of the soil but this would decrease with time as this material decomposes. Input of new organic matter would not take place until the sites became revegetated.

Soil displacement would occur during helicopter yarding, and excavator work. Soil disturbance through helicopter yarding is discontinuous and minor in extent (typically less than 5 percent of an activity area). It is unlikely that soil would be displaced more than 5 feet from the area of disturbance. Displacement caused by operating a low ground pressure excavator as required by my decision would most likely not exceed the threshold of “detrimental displacement” since displacement by the pods or bucket would not exceed 100 square feet, nor displaced soil be moved more than 5 feet. Loss of topsoil by surface erosion can occur through the development of ski runs. However, since logs and slash would be left in place as a soil cover, soil erosion is predicted to be minor under my decision.

The following table (Table ROD-4) shows total acres of grading, acres of estimated conventional excavator work, acres of low ground pressure (e.g., a "spider") excavator work as indicators for potential direct detrimental soil effects (compaction, loss of site organic matter and loss of topsoil). The table also shows an estimated percent of area in detrimental conditions compared to the total cleared construction area affected.

Table ROD-4. Direct Detrimental Soil Effects - Modified Alternative 2

	Modified Alternative 2
Total Grading Acres	12.7
Conventional Excavator (acres)	0
Low Ground Pressure Excavator (acres)	.35
Total Detrimental Effect (acres)	13.05
Total Developed Area (acres)	79
Total Estimated Percent Detrimental Conditions of Cleared Area	16.5%

Effects on Hydrologic Function

The removal of vegetation and ground disturbance associated with clearing for ski runs and lifts could directly and/or indirectly affect streams, wetlands, and hydrologic function such as runoff and stream flow within the Ashland Creek and/or Neil Creek Watersheds on the RR-SNF, and in the Cottonwood Creek and Grouse Creek Watersheds on the KNF.

The potential effects of the alternatives (and my decision) on watershed resources was analyzed at two different analysis scales. The Site Scale Analysis Area is approximately 1,469 acres in size and includes approximately 1,065 acres of the (Upper) Ashland Creek Watershed, which is a tributary to the 231,087 acre Bear Creek watershed. Upper Neil Creek is also a tributary to Bear Creek with a small portion of the Upper Neil Creek watershed (154 acres) located in the Site Scale Analysis Area as well. Also within the Site Scale Analysis Area is a portion (94 acres) of the Grouse Creek watershed, a tributary to the larger Beaver Creek watershed. The Site Scale Analysis Area also includes approximately 156 acres of the Upper Cottonwood Creek watershed, which is a mix of interspersed private and Federally managed lands.

Summary of Effects to Streams

The following table (Table ROD-5) summarizes the resultant stream channel conditions at the Site Scale, resulting from my decision, in comparison to the current condition. Table ROD-6 further displays the resultant stream channel conditions expected at the Watershed Scale.

Table ROD-5. Resultant Stream Channel Conditions - Modified Alternative 2 - Site Scale Analysis Area

Parameter	Current Condition	Modified Alternative 2
Watershed Area (acres)	1,469	
Total Stream Length (miles)	7.47	
Drainage Density (miles/mile^2)	3.25	
Road length (miles)	7.28	7.72
Road Density (miles/mile^2)	3.17	3.37
Road Area (acres)	16.93	17.95
Percent of Watershed Area with Roads	1.2%	1.2%
Number of Water Withdrawals	1	1
Number of Stream Crossings by Type:		
Roads	11	11
Ski Runs/Emergency Egress	7	15
Subtotal	18	26

Table ROD-5. (Continued)

Parameter	Current Condition	Modified Alternative 2
Number Stream Crossings by Structure:		
Bridges	0	1
Plastic Arches	0	1
Culvert Extensions	0	2
Culverts	12	14
No Structure, Open Channel	6	11
Subtotal	18	26
Stream Bank Conditions:		
Vegetative Cover (percent)	77	74
Impervious Surfaces (percent)	23	26

Table ROD-6. Resultant Stream Channel Conditions - Modified Alternative 2 - Watershed Scale Analysis Area

Parameter	Current Condition	Modified Alternative 2
Watershed Area (acres)	30,789	
Total Stream Length (mile	119.27	
Drainage Density (miles/ sq mile)	2.48	
Road Length (miles)	116.66	117.1
Road Density (miles/mile^2)	2.43	2.43
Road Area (acres)	271.3	273.7
Percent of Watershed Area with Roads	0.8	0.8
Number of Stream Crossings by Type:		
Roads	118	118
Ski Runs	7	15
Subtotal	125	133

The restoration projects and mitigation measures may also result in long-term, indirect effects that are beneficial to stream channels through the reduction and/or elimination of chronic sources of sediment effects and re-vegetation of Riparian Reserves to provide channel shade, fine litter inputs, LWM recruitment, and bank stabilization.

Summary of Effects to Wetlands

Short-term, direct effects to wetlands include actions that would result in a direct change in the acreage or function of a wetland for the effect (approximately 2 years or less). Examples include: the construction of short-term road crossings over wetlands, the placement of arch culverts over wetlands to allow for skiing over wetlands during the ski season (all adverse effects); or the removal of noxious weeds from a wetland plant community or the removal of deposited sediment from a wetland (beneficial effects).

Long-term, direct effects to wetlands include those actions that would result in a direct change in the acreage or function of a wetland for the foreseeable future. Examples of this effect mechanism include: the placement of culverts in wetlands, the placement of fill material for roads or other facilities, the placement of LWM into wetlands to create a ski run crossing or the removal of vegetation to create a ski run, the removal of fill material to allow restoration, or re-vegetation of a previously disturbed wetland. The following table (Table ROD-7) summarizes the direct effects (in acres) to wetlands at the Site Scale, resulting from my decision.

Table ROD-7. Summary of Potential Direct Wetland Effects - Modified Alternative 2 - Site Scale Analysis Area

Wetland Area	Current Condition	Modified Alternative 2
Total Area of Existing Wetlands (acres)	45.52	
Existing Area of Riverine Wetlands (acres)	5.36	
Proposed Effects to Riverine Wetlands (acres)	0	0.42
Proposed Effects to Slope Wetlands (acres)	0	0.41
Total Area of Proposed Effects (acres)	0	0.83

Effects on Flow

As discussed in FEIS Section C, 8, d, of Chapter III, the existing stream flow models that were analyzed for Ashland Creek would not adequately address the potential changes in the flow regime of the four analysis watersheds. Therefore, a custom stream flow model was created to estimate the potential changes in stream flow conditions in the four analysis watersheds as a result of vegetation cover changes from the Action Alternatives. This stream flow model analyzes potential changes to the annual low flow, average annual flow, and the 2-year peak flow for the four watersheds in the Watershed Scale Analysis Area. These specific flow conditions were selected for analysis because, according to published literature, these are the flow conditions most likely to be affected at the Watershed Scale by land cover changes at the Site Scale from the implementation of the Proposed Action (Beschta et al. 2000; Burton 1997; Keppeler 1998; Hicks et al., 1991).

The results of this model represent the potential change in stream flow at the mouth of each watershed studied and are not intended to predict the actual stream flow numbers for the three flow parameters. Since the USGS operated gauges on the East Fork and the West Fork of Ashland Creek were both re-activated in 2002, there is an opportunity to use the paired watershed technique to monitor the actual effects to the flow regime of the East Fork of Ashland Creek, resulting from authorized actions (if any) in the Record of Decision.

The flow regime analysis for the East Fork of the Ashland Creek watershed was performed using potential vegetative cover changes from Alternative 2 to provide a "worst case scenario" for the analysis. Based on the results of the model, the annual low flow of the East Fork of Ashland Creek would increase by 1.4 percent, the average annual flow would increase by 0.4 percent, and the 2-year peak flow would increase by 0.3 percent. The stream data from the gauging station on the East Fork of Ashland Creek is measured and reported depending on magnitude of discharge, therefore, the estimated increase in these three flow parameters would likely not be measurable by the gauging station.

The relatively small changes in flow conditions estimated by this model are to be expected, based on the watershed studies performed in the Pacific Northwest which indicate that even relatively large changes in stream flow in small headwater basins will cause small increases in flow in larger watersheds (Harr et al. 1979; R. L. Beschta et al., 2000; Hewlett 1982). It is anticipated that measurable changes to bank full discharge would not occur because bank full flows in mountainous terrain have 11 to 100-year return intervals, and regional studies and this model indicates that the effects of watershed treatments do not substantially affect large peak flows (recurrence interval of 25 to 100 years) (R. L. Beschta et al. 2000; Harr et al. 1975).

Since the majority of sediment transport and changes in channel morphology occur during large peak flow events, the relatively small changes in low flow and small peak flow conditions estimated in this model indicate that the development of my decision will not measurably affect sediment transport or channel morphology at the Watershed Scale.

The flow regime analysis for the Upper Neil Creek watershed was performed using potential vegetative cover changes from Alternative 4 to provide a worst-case scenario for the analysis. Based on the results of the model, the annual low flow of Upper Neil Creek would increase by 0.2 percent, the average annual flow would increase by 0.1 percent, and the 2-year peak flow would not increase. My decision (Modified Alternative 2) would have less development in Neil Creek than Alternative 4, and would therefore predict much less effect. The estimated increase in annual low flow and average annual flow would likely not be measurable by a stream gauge, if one was to be installed.

No clearing or new impervious surfaces would occur in the Grouse Creek watershed under my decision. Therefore, the flow regime of Grouse Creek and its tributaries would not be affected at the Site Scale or the Watershed Scale by the proposed expansion actions.

The flow regime analysis for the Upper Cottonwood Creek watershed was performed using potential land cover changes from Alternative 2 (which is similar to my decision) to provide a worst case scenario for the analysis. Based on the results of the model, the annual low flow of Upper Cottonwood Creek would increase by 0.1 percent and the average annual flow and the 2-year peak flow would not increase. The estimated increase in annual low flow would likely not be measurable by a stream gauge, if one was to be installed.

Ski expansion activities, such as ski lift and run development may occur within and could affect riparian areas, NWFP Riparian Reserves, and their associated functions.

Riparian Reserves are established as a component of the Aquatic Conservation Strategy, designed primarily to restore and maintain the health of aquatic systems and their dependent species. Riparian Reserves also help to maintain riparian structures and functions and conserve habitat for organisms dependent on the transition zone between riparian and upland areas. The width of the Riparian Reserves for wetlands and streams on the RRNF and the KNF in the Site Scale Analysis Area was determined based on the rationale presented in FEIS Table III-19. Streams in the Site Scale Analysis Area were classified in the field as perennial, intermittent, or ephemeral in order to assign the appropriate Riparian Reserve width according to the NWFP. The current condition areas of Riparian Reserves within each watershed of the Site Scale Analysis Area are summarized in Table ROD 8 below, as well as the degree to which Riparian Reserves are changed under my decision.

Table ROD-8. Summary of Riparian Reserve Land Cover Conditions Site Scale Analysis Area

Parameter	Current Condition	Modified Alternative 2
Acres of Riparian Reserves (acres)	333.34	
Proposed Clearing in Riparian Reserves (acres)	0.0	4.74
Proposed Grading in Riparian Reserves (acres)	0.0	1.24
Land Cover within Riparian Reserves:		
Forested Cover (acres)	218.67	213.55
Percent change in Forested Cover	0	-2.3%

Effects on Water Quality

The removal of vegetation and ground disturbance associated with clearing for ski runs and lifts within or near streams could change pH, increase water temperatures, introduce bacteria, and/or introduce petrochemical pollutants, particularly in Ashland Creek Watershed, a municipal watershed.

Effects to water quality (both long and short term) include those actions that would result in a change in the quality of surface or groundwater. Examples of effect mechanisms include: discharges of effluent into surface waters, such as from a wastewater treatment plant or stormwater management facilities, the placement of a culvert in a stream or wetland and the associated increase in sediment deposition or turbidity, or the deposition of petroleum products into surface waters.

Water quality attributes that are considered under the Clean Water Act include traditional physical and chemical constituents such as pH, bacteria concentration, temperature, discharge, and chemical pollutants. The Forest Service is the responsible management agency for water quality on the lands it manages, as described in a memorandum of understanding (MOU) with ODEQ.

Change in pH

The construction of concrete structures such as the lift terminals, lift towers, building footings and bridge footings could result in short-term, indirect effects to water quality due to changes in pH resulting from concrete or concrete washings reaching surface waters. With employment of Mitigation Measures and BMPs, the potential for this to occur is low under my decision, based on the distance from water and the timing of the pouring of concrete (during dry weather).

Bacteria

The water quality parameters of concern both within and immediately below the SUP area and Forest boundary include those for which streams have been identified by the ODEQ as Section 303(d) Water Quality Limited water bodies. Reeder Reservoir is currently listed as a water quality limited waterbody for sedimentation under Section 303(d) of the Federal Clean Water Act. Below Reeder Reservoir, Ashland Creek is listed as "Water Quality Limited" from the mouth to Ashland City limits for bacteria, and Bear Creek is listed from the mouth to Neil Creek. Bacteria levels in lower Ashland Creek and Bear Creek are influenced by downstream activities including pasture use in proximity to streams; return irrigation flows, failing septic systems, etc.

Within the MASA, the current wastewater disposal method is subsurface disposal in a drainfield system that covers portions of the Upper Ashland Creek and Upper Neil Creek watersheds. The current flows to the existing drainfield are approximately 2,000 to 3,000 gallons per day (gpd) (pers. com. Jeff Hanson 2003) and the capacity of the facility is approximately 19,000 gpd. Reports from 2001-02 indicate that there have been no measurable effects on any of the drainfield monitoring wells from the operation of the treatment plant facility (Ferrero 2002). The increased visitation under my decision would increase flows to the drainfield by an amount proportional to the number of increased visitors. All projected flows are well within the capacity of the drainfield (as noted above) and as a result, would not result in a degradation of water quality.

Under my decision, wastewater from the Moraine Lodge will be transported to the wastewater treatment facility at the Knoll. The most likely cause for a pipeline failure is associated with blockage causing the pipeline to be under pressure and break. The system design includes safeguards such as the use of pressure grade pipe (which exceeds ODEQ standards), level sensors with central alarms that would initiate emergency operation procedures, and annual system operations checks prior to each ski season that includes pressure testing the sewer pipeline. These system design and Mitigation Measures greatly reduce the potential for discharge of pollutants.

Temperature

The potential for increasing stream water temperatures as a result of reducing shade to waterways, increasing stream width and reducing stream depth, or changes in timing and distribution of stream flow were assessed. The physical integrity of hydrologic features and flow were previously discussed; it was determined no measurable changes would occur that would result in increased stream water temperatures.

The proposed activities under my decision are primarily located outside of Riparian Reserves. Although some tree removal would occur in the Riparian Reserves, only minor amounts of stream shade reduction would occur. There is no expected increase in water temperature due to the lack of maintenance of hydrologic function or project location, e.g., headwaters, high elevation, and aspect (north facing).

Petrochemical Pollutants

Ski expansion could affect water quality through the (point source) introduction of petrochemicals (oil, gas, diesel, transmission fluid) and/or sediment (from road sanding). Potential sources for the release of petrochemicals include: bulk fuel storage tanks, leakage from parked vehicles or leakage from facility vehicles or machinery, and lubrication of ski lift mechanisms.

The operation of heavy equipment during construction and grooming equipment during operations in the Middle Fork area, would introduce the potential for the deposition of fuel or oil and grease into the landscape. Increased surface water pollution could result as equipment works within Riparian Reserves or over streams and wetlands. Implementation of BMPs will minimize the exposure to these effects and little effect is anticipated.

Potential water quality effects from my decision due to oil and grease inputs from the parking lots will be minimized to the greatest extent practicable through the use of oil/water separators and/or oil absorbent pads. Snow groomers, snowmobiles and summertime maintenance vehicles at the ski area are potential sources for fluid leakage. The frequency and magnitude of such occurrences are expected to continue to be very low. Properly trained and experienced operators and maintenance personnel are responsible for minimizing potential for discharges. Any random oil, grease or fluid leakage from vehicles is expected to occur at very small quantities at any point in time.

Following snowmelt, oils or other fluids that may be discharged are likely to be adsorbed onto soil particles. When soil temperatures increase during spring and summer, naturally occurring microbes in the upper soil horizon can consume and metabolize small quantities of petroleum products. Subsequent effects to surface water quality are therefore likely to be minimal (US-EPA 2003 *Natural Attenuation*).

The proposed increase in the parking lot size can be expected to proportionally increase any unintentional pollutant discharges associated with stormwater discharges. The proposed increase in ski area size would increase proportionally the area subject to unintentional pollutant discharge from maintenance vehicles and machinery. This increase resulting from my decision is not expected to increase risks to surface or ground water quality.

Implementation of the ski expansion activities have the potential to contribute to an increased risk for adverse cumulative watershed effects, considering this and other foreseeable actions in the Upper Ashland Creek Watershed, the Upper Neil Creek watershed, the Upper Cottonwood

A cumulative watershed effect is any response to multiple land-use activities that is caused by, or results in, altered watershed function. The process generating a cumulative watershed effects analysis is complicated by the variety of land-use activities that may cause effects, and by the multitude of philosophical and economic values affected.

However, land-use activities can directly change only a few water quality characteristics: vegetation, topography, soil properties, water distribution, erosion and mass wasting rates, and chemical inputs. Indirect cumulative watershed effects accrue if effects of proposed activities are transported through a basin. The effects usually manifest as changes in the rate, mode, or timing of the transport of water, sediment, organic matter, chemicals, or heat. These offsite impacts result directly or indirectly from changes in transport (Naiman R. J. and R. E. Bilby, 1998, Reid 1989).

In the cumulative effects analysis for the Draft EIS, a model known as the *CWE* method was compared with results from Equivalent Roaded Area (ERA) Methodology. Based on the analysis conducted and documented for the Draft EIS, the two models yielded similar results for the Upper Ashland Creek Watershed Scale analysis area. For the Final EIS, only the ERA Methodology is used to assess past, current, and future activities.

ERA Methodology

The *ERA Methodology* utilizes GIS analysis of land use activities to convert road, timber harvest, fire, and other disturbances within each watershed to equivalent roaded areas based on predetermined coefficients that are regionally specific. The resulting equivalent roaded area within each watershed is divided by the area of each watershed to calculate a relative disturbance rating, which is called the percent ERA. Then, the percent ERA is compared to the Threshold of Concern (TOC) for each watershed. Finally, the calculated TOC is compared to the percent ERA for each watershed to determine a watershed Risk Ratio.

Detailed documentation of cumulative watershed effects analysis completed for the Upper Ashland Creek, Upper Neil Creek, Grouse Creek, and Upper Cottonwood Creek Watershed Analysis Areas is contained in FEIS Appendix C, which is incorporated by reference. As stated above, the *ERA Methodology* was used to assess the relative risk of adverse effects relating to sedimentation, physical integrity, and stability of stream channels; the results of the cumulative watershed effects analysis is presented in FEIS Chapter IV.

A Risk Ratio approaching or greater than 1.00 serves as a "yellow flag" indicator of increasing susceptibility for significant adverse cumulative effects occurring within a watershed. Susceptibility of cumulative watershed effects generally increases from low to high as the level of land disturbing activities increase towards or past a risk ratio value of 1.00 (USFS KNF 1988). Watersheds with a "yellow flag" rating are not in eminent danger of unacceptable cumulative watershed effects, but these watersheds contain enough disturbance to "warrant a closer look" (*Beaver Creek Ecosystem Analysis* 1996). It should be noted that the *ERA Methodology* analyzes watershed conditions regardless of land ownership.

Reasonably Foreseeable Actions

Cumulative effects analysis requires that future actions that are reasonably foreseeable be examined along with the proposed actions. When the DEIS was developed, there were no future activities proposed within the watershed analysis areas. Since that time, Ashland Forest Resiliency has been proposed that would affect areas within the Upper Ashland watershed and the Upper Neil Creek watershed. A hazardous fuels reduction project on the KNF in the Upper Cottonwood Creek watershed is also proposed.

The purpose of the Ashland Forest Resiliency (AFR) project is to reduce hazardous fuel conditions and to protect values at risk within the Ashland Municipal Watershed. The AFR project proposes to treat approximately 8,150 acres of hazardous fuels with various treatments including density management, prescribed fire, and vegetation treatments. An "adjusted or "corrected" resultant condition value was calculated for the two watersheds in which AFR would occur (Upper Neil and Upper Ashland), and for Colestine Thin in the Upper Cottonwood Creek watershed.

The following discussion includes current condition values, the cumulative changes resulting from MASA ski expansion alternatives, as well as the cumulative change that would occur as a result of implementing AFR within the Upper Ashland and Upper Neil Creek watersheds, and Colestine Thin in the Upper Cottonwood Creek watershed. Note that AFR is in the preliminary planning stage of the analysis process and further refinements may occur to that proposal. Refinements could be made to reduce the extent of action within the Neil Creek watershed that would subsequently reduce the predicted cumulative watershed effects.

The *ERA Methodology* was utilized to assess the relative risk of adverse effects relating to sedimentation, physical integrity, and stability of stream channels. The results of the cumulative watershed effects analysis are presented in Table ROD-9, whch includes the current condition (background) rates. The consequences of my decision are based on the modeling results for Alternative 2 (worst case). In actuality, my decision would likely be slightly less than the predicted effects of Alternative 2 (and slightly more than those predicted for Alternative 6).

Table ROD-9 Equivalent Roaded Area, Threshold of Concern, and Risk Ratio by Watershed Analysis Area

Watershed	Factors	Current Condition (Background)	Alternative 2 MASA	MASA + AFR + Colestine Thin
Upper Ashland Creek	ERA %	2.17	2.28	4.27
	TOC	8.5	8.5	8.5
	Risk Ratio	0.255	0.268	0.502
Upper Neil Creek	ERA %	8.44	8.45	8.79
	TOC	9.0	9.0	9.0
	Risk Ratio	0.938	0.939	0.977
Upper Cottonwood Creek	ERA %	6.54	6.54	6.55
	TOC	9.0	9.0	9.0
	Risk Ratio	0.73	0.73	0.769
Grouse Creek	ERA %	6.19	6.19	6.19
	TOC	7.0	7.0	7.0
	Risk Ratio	0.88	0.88	0.88

The cumulative effects within the Upper Ashland Creek watershed, considering the AFR project, still do not approach the "yellow flag" threshold of 1.0 with the highest effect being Alternative 2. Within the Upper Neil Creek watershed, cumulative effects including the AFR project would move the risk ratio for the watershed closer to the threshold, but would still remains below a 1.0.

Effects to Englemann Spruce

Ski expansion activities could directly affect a locally rare stand of Engelmann spruce. Although not listed or protected by law or policy, this stand is at the extreme end of its range and may represent a unique component of biodiversity. Ski expansion activities, such as clearing, could affect Engelmann spruce by creating an "edge effect", potentially changing stand health conditions and resistance to disease.

At the Site Scale, an Engelmann spruce (*Picea engelmannii)* stand and wetland is present within the Middle Fork area. A portion of the stand of concern is located in the Lower Wetland area, and is approximately 18.2 acres in size within the Middle Fork portion of the SUP area. It is a mixed stand of Engelmann spruce, Shasta red fir, and white fir, with spruce especially common in the wetter areas along the stream and several seeps adjacent to it. It is a mixed age stand with trees of all size classes up to about 50 inches diameter breast height (DBH) represented. The Engelmann spruce here, and in additional stands in the East Fork drainage, represent the only Engelmann spruce populations in the Siskiyou Mountains.

In summer of 2002, the Forest Service counted 60 spruce trees over 2 inches DBH that would be removed under Alternative 2. Five of these trees are greater than 32 inches DBH. Several spruce trees fell within proposed Run 12 due to heavy snow loading in late December 2002. A series of storms with relatively high snow levels (5,000-5,500 feet in elevation) took down a very high number of trees within the spruce grove, the Special Use Permit area, and the Siskiyou Crest area as a whole. The number of Engelmann spruce that would be removed under FEIS Alternatives 2 and 6 has been revised accordingly.

Effects to the Engelmann spruce grove under my decision are identical to Alternative 6. Compared to Alternative 2, the fraction of the Middle Fork area spruce grove that would be cut is less, 5.5 % instead of 10 %. This is because the location of Runs 14 and 12 has been shifted in a manner that avoids more of the spruce trees and wetland and further minimizes fragmentation of the spruce wetland plant community.

Table ROD-10 provides breakdown of the number of Engelmann spruce in the Middle Fork area, under my decision within the SUP that would be removed, by size class. Percentages are shown by size class, of the total number of trees removed under my decision (37).

Table ROD-10. Number and Percentage by Size Class of Spruce Trees Removed

Size Class (inches at DBH)	Number of Trees Removed	% by Size Class of Trees Removed
2 to 12	16	43%
13 to 21	13	35%
22-29	7	19%
30-35	1	3%
>35	0	0%
Total	37	

The very largest spruce trees currently living in the East Fork Ashland watershed would not be cut under my decision. These largest trees include: two trees in a large grove on the West Fork of the East Fork of Ashland Creek at 5,700 feet in elevation that are 67 inches DBH and 61 inches DBH, respectively; one tree in the Middle Fork area spruce grove that is 53 inches DBH; and five other trees in the Middle Fork area spruce grove that were measured with diameters greater than 48 inches DBH. Although the extensive grove on the West Fork of the East Fork of Ashland Creek has the absolute largest two trees in the watershed, the Middle Fork area spruce grove has the greatest number of trees larger than 36 inches DBH. A very rough estimate of 46 spruce trees over 36 inches DBH in the Middle Fork area spruce grove was made in a 1997 contract survey. Although none of these large trees appear to be in the path of proposed ski runs, some of them would be susceptible to the increased likelihood of windthrow under my decision.

Effects to Mt. Ashland Lupine and Henderson's Horkelia

The implementation of ski expansion activities, particularly in the area of the West Ridge (on the summit between the National Weather Bureau radar site and the area locally known as the "Rabbit Ears" rock outcrop) may affect two rare vascular plant species listed by the Forest Service as Sensitive: Mt. Ashland Lupine (Lupinus lepidus var. Ashlandensis), and Henderson's horkelia (Horkelia henderosonii). Ski expansion activities may have an effect on long-term population viability of Mt. Ashland Lupine and Henderson's horkelia.

The Mt. Ashland Lupine is endemic to Mt. Ashland (found nowhere else). There is only one large population located on the summit and west slope of the mountain. The existing population covers roughly 43 acres and has about 36,000 individuals. The population occupies natural openings. The Mt. Ashland lupine grows on southern, western, or flat aspects. It is not found in any of the north-facing openings. It becomes scarce or absent on those portions of the summit and west slope where the aspect turns toward the northwest or north.

Henderson's horkelia is endemic to the eastern Siskiyous from Mt. Ashland to Dry Lake Lookout south of Condrey Mountain (17 miles southwest of Mt. Ashland). Six populations are known. The Mt. Ashland population probably has the greatest number of plants. An extended population in the Dutchman Peak/Observation Peak area spreads across more acres but probably contains fewer plants. The Mt. Ashland population occupies roughly the same area on the summit and west slope as the Mt. Ashland lupine population, with notable extensions on the west and southwest sides. A few plants occur on the terminal moraine at the bottom of the Bowl. Individual horkelia cannot be reliably counted because the plant spreads vegetatively as well as by seed, but Henderson's horkelia is abundant within many parts of the area occupied by the Mt. Ashland population.

There are four small patches on about 0.15 acres on the south aspect of the terminal moraine at the bottom of the Bowl. Altogether, these plants occupy about 80 square feet, a very small area compared to the 50+ acres occupied on the summit, west ridge, and adjacent areas. A Mitigation Measure is required to protect these plants during construction of the Moraine Lodge. No individual plants on the moraine are expected to be lost under my decision.

Mt. Ashland Lupine (*Lupinus lepidus var. Ashlandensis)*: Under my decision, skiers would continue to cross an estimated 5 acres of the lupine population when weather and snow conditions attract them to the south side of the mountain. Skiers would continue to use 3 acres of lupine habitat around the top and west side of the Bowl and 0.5 acres down the West Ridge. FEIS Map IV-6 shows the relationship of the lupine population area to existing and proposed ski runs under Alternative 6, which is the same as my decision.

Since the proposed Run 15 begins on the West Ridge, the numbers of skiers using these 3.5 acres of lupine habitat would substantially increase over current usage. My decision also includes construction of a snow fence on the West Ridge to augment snow depths. The increased skier usage and the snow fence may change environmental conditions on these 3.5 acres by increasing pressure of the snow pack on the dormant root crowns of lupines and other plants, and increasing the longevity of the snow pack in the spring. A roped ski area boundary would border the West Ridge Run and, if properly enforced, would keep most skiers off of an additional 25 acres of Mt. Ashland lupine habitat. Minor disturbance and loss of occasional individuals could occur from skiers using bare ground patches in the lupine population to rest or socialize during low snow periods.

It is not known if these potential environmental changes would be beneficial, adverse, or neutral for the Mt. Ashland lupine. However, the effect of a longer-lived snow pack is most likely to be adverse because the lupine typically grows in wind-scoured areas where the snowpack typically disappears early in the spring. These 3.5 acres are already skied over with no evidence of adverse effects. Also, roughly 2 of these acres have much lower population density than the rest of the 43-acre population. Therefore, even if numbers of individual plants were to decline on these 3.5 acres, it is not expected that my decision would adversely affect the viability of the population as a whole.

Effects to the Mt. Ashland lupine population from increased summer recreation activity will be mitigated through implementation of measures that include installation of barriers, signs, and through education (see Mitigation Measures). Recent lupine and horkelia habitat improvement projects are being implemented under the Terms of the Conservation Agreement, as described in FEIS Chapter III, Section C, 4).

Hendersons horkelia: The horkelia population generally occupies the same acres of existing ski runs (developed and undeveloped) and the same natural openings and habitat on the summit and west slope as does the Mt. Ashland lupine. Effects of my decision are expected to be the same for Henderson's horkelia as they are for the Mt. Ashland lupine, discussed above.

Effects Associated with Human Social Values

Although allocated to Developed Recreation as an existing ski area (RRNF LRMP 1990), and as decided in the 1991 Master Plan ROD/FEIS, ski expansion activities could affect the McDonald Peak IRA and could affect the current unroaded character and value, primitive recreation, as well as the potential value for additional future Wilderness.

All alternatives considered are based on the 1991 analysis and decision for expansion of the MASA SUP area boundary; see Chapter III, Section D for more discussion on the history of the Inventoried Roadless Area (IRA) known as McDonald Peak. The 1991 decision to expand the ski area SUP area boundary is associated with Alternative 7 of the 1991 ROD/FEIS. This expanded boundary overlaps the boundary of the McDonald Peak area, inventoried as roadless, by a total of approximately 298 acres. In addition, the current ski facilities and use overlap this boundary by less than 1 acre.

The removal of forest and the introduction of people and facilities into this previously undeveloped area are a direct effect, and could also create indirect effects. While there is a measurable difference in acres affected, the most significant and measurable effect is the mere presence of development and the modification of the natural landscape.

My decision will construct ski runs and lifts within and along the southeastern edge of the McDonald Peak IRA, within the Middle Fork area. This effect is similar to that of FEIS Alternative 6, with the exception of the inclusion of the Skiway, which includes more area than the Egress Route. My decision will modify approximately 39.9 acres; this is slightly less than Alternative 2 (40.7 acres). This effect, in addition to the current use, would amount to a total direct effect of approximately 42.0 acres of the inventoried 9,425 acres. This acreage equates to an effect of approximately 0.45 percent of the IRA.

The McDonald Peak IRA was not considered suitable for Wilderness during analysis for inclusion in the 1984 Wilderness Act and was released for multiple use management with the decisions associated with the 1990 RRNF LRMP. Some people feel this roadless area should still be considered or designated as Wilderness.

My decision changes the opportunity for hiking, hunting, and plant identification in a portion of the headwaters of the East Fork of Ashland Creek. Though the opportunities for dispersed recreation would be maintained, and perhaps expanded as discussed in the Recreation section (see Section E, 10, FEIS Chapter IV), the environment in which it would be experienced would change. The current experience is one dominated by native, unentered forest, and the absence of human developments; the opportunity for solitude is high. The future experience would be identical to that currently available within the existing MASA development, dominated by artificial openings (ski runs) and structures (ski lifts), and high human use. There would be very limited opportunities for solitude, since artificial openings and structures create an atmosphere dominated by human influence.

Authorized development under my decision will effectively foreclose any potential for Wilderness designation within the Middle Fork area, i.e., the headwaters of the East Fork of Ashland Creek. This is because my decision will maintain unnatural openings and construct permanent structures that are incompatible with Wilderness designation. My decision, however, will affect only a small portion of the Inventoried Roadless Area or lands that currently possess undeveloped character. Thus, remaining lands would maintain the same potential for Wilderness designation.

These remaining lands would still form a contiguous block and would contain an area over 9,000 acres. In fact, the Forest Service believes that a more detailed and current inventory of undeveloped lands in and around the McDonald Peak area could identify an area equal to, or greater than the previously Inventoried Roadless Area (i.e., more than 9,425 acres), not including the lands contained within the SUP area.

Ski expansion activities could affect other undeveloped areas adjacent to the McDonald Peak IRA (but not inventoried as Roadless), currently possessing roadless characteristics, and similarly affect values and opportunity for primitive recreation.

Roadless areas, like Wilderness, are valued by many for their very existence in an undeveloped state. This value is experienced practically by users of the area, and intrinsically by those who place value in simply knowing that undeveloped lands, perceived as "wild," still exist. This roadless area, in the vicinity ski area expansion activities, currently possesses these undeveloped character values. The SUP area includes a total of approximately 298 acres of lands inventoried as roadless. The area within Inventoried Roadless and overlapping the SUP is approximately 77.5 percent within the Middle Fork area, and 22.5 percent within the Knoll area.

Also within the SUP area, certain additional areas, typically adjacent to the inventoried area and not within areas currently developed for skiing, also currently possess similar undeveloped character and values. The SUP area includes approximately 280.2 acres of lands currently possessing this character (and *NOT* designated as Inventoried Roadless). The criterion for identification of these areas includes areas that generally lacked development (e.g., ski runs, the wastewater drainfield area and Bull Gap Road, with reasonable "buffers" would not possess this character).

My decision will compromise the undeveloped character of a portion of the McDonald Peak IRA, and the undeveloped area adjacent to it, by removing forest and constructing ski lifts and runs. The direct effects, as stated above, are a change in character of approximately 40 acres within the Inventoried Roadless Area. Direct effects to areas currently possessing roadless character and *NOT* within the IRA are estimated to be approximately an additional 19.4 acres for my decision (same as Alternative 6). This equates to a total direct effect and loss or change in current undeveloped character (from inventoried and non-inventoried areas) from approximately 60.4 acres, including the less than 1 acre already affected by current use.

It is recognized that the effects to human values associated with wildland features occur in ways that exceed the amount of acres included in clearing for ski lifts and runs. This effect is difficult to measure and is highly subjective. It can be stated that some adverse effect to these values would occur, at some level approaching, but probably not including 100% of the areas currently possessing these values, within the SUP area. As stated above, lands in the SUP area within the IRA include 298 acres; lands adjacent to and *NOT* within roadless that possess undeveloped character within the SUP include an additional 280.2 acres.

Though there would be a net reduction in the amount of unaltered natural area remaining, the effect would be localized to the area along the southeastern edge of the Roadless Area (and adjacent to the Middle Fork areas). Under my decision, the direct change in character to the entire McDonald Peak IRA would leave over 99 percent of the IRA unaffected. This would leave not only a high percentage of the area intact, but would also maintain nearly all of its original shape, neither fragmenting nor narrowing the area substantially. The effect is localized in the headwaters of the East Fork of Ashland Creek. Ski area development would not be visible from most areas within the IRA, except as viewed from areas such as Wagner Butte and certain areas along the ridge between Wagner Butte and McDonald Peak.

Cumulative Effects

There have been no management actions in this area since the Forest Service inventory occurring in the except for annual maintenance of the Wagner Butte Trail and fire suppression activities (e.g., Horn Gap Fire, 2003, 15 acres). In addition to current and proposed ski area expansion activities, there is possible additional trail restoration and development work foreseeable (Grouse Gap Trail). This trail proposal is not likely to have adverse effects to character, and the adverse physical effects of development are likely to be offset by the restoration nature of the action on the current conditions.

Ashland Forest Resiliency (AFR) proposes hazardous fuel reduction treatments within portions of the IRA. Although no new roads or landings would be constructed within the IRA, management actions such as thinning from below, pruning, and prescribed fire are proposed. These actions would not be evident from a landscape view but would be visible to persons walking through areas where treatments occurred.

Approximately 1,000 acres of the IRA is proposed for treatment under the AFR project. The ecological effects of fragmentation and late-successional forest connectivity would be minimal with these types of treatments and the resulting reduction in fire hazard and risk would further protect the integrity of the IRA. The combination of the Ashland Watershed, the late-successional conditions and the overlap of the McDonald Peak IRA is significant in the role the Siskiyou bioregion plays in dispersal and migration of species across the landscape, as discussed in Section D, 1 of Chapter III.

The change that my decision will make is essentially the creation of permanent openings in sub drainages that are now predominantly forested. The McDonald Peak IRA as a whole, however, cannot be characterized as continuous forest. It supports a wide array of large openings in grasses and forbs; brush fields; and rocky outcrops. Thus, openings created by development under my decision, and their maintenance in a continually open state, would not be out of character for the area in form, ecological function, or percentage of the landscape. Though the changes would be substantial for the expansion area within the headwaters of East Fork Ashland Creek, they would not be so for the Inventoried Roadless Area as a whole.

Removal of large or old-growth trees and changes to late-successional ecosystems associated with ski expansion activities may conflict with human spiritual values that people place on large trees, and the natural environment.

Removal of large or old-growth trees and changes to late-successional ecosystems associated with ski expansion activities may conflict with human spiritual values that people place on large trees, and the natural environment. Under my decision, the conversion of areas with mature and old-growth (late-successional) conifer forest vegetation into openings for ski runs, ski lifts, and buildings, is the most intensive vegetation change. Most of the forested acres are composed of Shasta red fir trees, with lesser amounts of mountain hemlock and other conifers. When the overstory and understory conifers and taller shrubs are pruned or removed, the species composition of low shrubs and herbaceous plants in these openings would change to species that are tolerant of open habitats. Based on observations in the existing ski area, the resulting species composition of these open areas would include a large proportion of green-leaf manzanita, pine-mat manzanita, snowbrush, white-stemmed lupine, sandwort, green fescue, squirreltail, two species of sedges, and pussy paws. Young Shasta red fir and mountain hemlock seedlings would be present; they would likely be clipped, bent, removed, or otherwise kept about a foot above the ground, as ski runs are maintained. The height of new shrubs and conifers would be held about a foot above the ground to allow skiing over them. Table ROD-11 displays acres of current and post-project vegetation conditions under my decision within the Site Scale Analysis area.

Table ROD-11. Acres of Current and Resultant Vegetation by Successional Stage - Site Scale Analysis Area

Land Cover Class	Current Condition	Modified Alternative 2
Late Forest, Closed	570	538
Late Forest, Open	24	20
Mature Forest, Closed	253	235
Mature Forest, Open	152	136
Immature Forest, Closed	0	0
Immature Forest, Open	4	4
Seedling/Sapling	1	1
Shrub	261	291
Grass/Forb	114	144
Non-vegetated	68	68
Impervious, Erodible	13	18
Impervious, Non-erodible	9	13
Total	1,469	1,469

Spiritual value issues surrounding the Engelmann spruce grove, the Lower wetland, and the proposed ski area expansion involve much more than simple species viability. Old-growth character, aesthetics, rare organisms, species richness and other biodiversity attributes, and spiritual and recreational value associated with the Engelmann spruce grove are discussed below.

Where Runs 12 and 14 intersect the Engelmann spruce grove, some big trees and the current late-successional character of the grove would disappear. Aesthetic qualities based on old-growth character, naturalness and beauty that people currently perceive in the Middle Fork area spruce grove would be missing from these corridor areas. The ski runs would be visually obvious from other parts of the spruce grove and the lower meadow.

Even though the majority of the spruce grove would remain undisturbed under my decision, some people may perceive a loss of aesthetic quality throughout the vicinity of the spruce grove, because the area in general is no longer pristine. There would be a loss of recreational value for people who seek out remote and pristine natural settings, such as the spruce grove currently offers. Any spiritual attributes some people associate with the Middle Fork area spruce grove or similar settings may also be lost or reduced.

Effects Associated with Economics

Effects Related to Skier Demand; there is a concern that skier demand is insufficient to establish and support the need for expansion.

Factors that affect skier demand are numerous and include natural events such as amount of snowfall, temperature, wind conditions and mix of terrain; and human factors such as the general state of the economy, and competition with other forms of recreation. A factor in one region of the country may affect visits in another region. For example, low snowfall in the East often increases the number of skiers to destination resorts in the West. Likewise, poor snowfall in the West, often results in increased use at eastern destination areas.

The demand for skiing in general and at a particular ski area is a function of ski area characteristics, such as terrain and snow conditions, and an individual's socioeconomic characteristics, such as disposable income and availability of leisure time. It is the aggregation of each individual's demand that results in the total demand for skiing. As the factors that affect an individual's demand for skiing shift through time, so does the total demand for skiing. For instance, consumer incomes may increase, giving them more disposable income to spend on recreation, such as skiing. The tastes and preferences of consumers for goods and services may change, causing them to want more of one thing or less of another. Of course, the number of individual consumers in a group may change, such as more people jogging or more cyclists, resulting in increased or decreased demand. Such changes may be due to changes in preferences, new information, or may simply be a result of demographic changes. All of these socioeconomic factors play a role in shaping the demand for skiing over time.

Projected Visitation

Skier visitation projections at Mt. Ashland are based upon a number of variables, including population growth, changing demographics, competition, the growing expectation level of skiers, the compatibility between the mix or terrain on the mountain and skill levels of local skiers, and variability of weather, including the potential for ski area closures due to wind or other conditions. Most importantly, the ski experience offered by Mt. Ashland and the success of marketing efforts are critical to expanding market share within the context of these elements.

The projected low annual growth rate for the current ski area is 0.50%, corresponding to slightly less than the historical growth rate for other ski areas in Mt. Ashland's local market area between 1985/86 and 2001/02. The projected high annual growth rate is 1.0%, somewhat below the historical growth rate for other ski areas in Mt. Ashland's local market area between 1990/91 and 2001/02. A lower growth rate is assumed because it is expected that without the proposed improvements at Mt. Ashland, the ski area would lose its share of the local and regional market as competing ski areas continue to make improvements to attract additional skiers.

Under my decision, it is assumed that the following factors would result in a higher growth rate between 2005/06 and 2013/14 in comparison to current conditions (based on FEIS Alternative 2):

- Increase in skiing terrain, hourly capacity and comfortable carrying capacity (CCC);
- Increase in additional Novice and Intermediate terrain, with a mix of terrain that better reflects the skill levels of skiers in the market;
- Improved skier services (new Moraine Lodge, expanded parking and other skier service facilities); and
- Approximately 17 fewer days per year when a substantial portion of the mountain would be closed due to high wind conditions (i.e., when the LC-6 Chairlift and associated terrain will be operational). This would be equivalent to approximately four additional full days of operation in terms of visitation[8].

Low and high annual growth rates are assumed to be 2.3% and 3.0% between 2005/06 and 2013/14. The lower rate is somewhat higher than the growth in Oregon skier visits between 1990/91 and 2001/2002, consistent with Mt. Ashland's relatively stronger performance during this period. The higher rate assumes that Mt. Ashland would increase its share of the local and regional markets and/or attract Oregon skiers who would otherwise travel outside the region. As noted above, Mt. Ashland's growth rates between 2015 and 2024 for all alternatives would be expected to more closely mirror historic regional trends (from 1.0% to 1.5% annual increases).

As an economic concern, ski expansion may affect the long-term operational economic feasibility (i.e., economic viability during drought years, competition from other ski resorts given the extent of expansion commitment, etc.) of MASA.

An economic feasibility analysis was conducted for the five Action Alternatives. The No-Action Alternative was not evaluated as part of this analysis as it would not require a major capital investment. The complete Feasibility Analysis prepared for this FEIS by Cogan Owens Cogan, LLC, was reviewed by the Forest Service, is contained in FEIS Appendix I, and is incorporated by reference. The purpose of the analysis is to determine which of the Action Alternatives would yield a favorable return on investment. To make this determination, the analysis forecasts operation revenue and expenses for each of the Action Alternatives for a period of twenty years. The ski area's income, net of operating, debt service and administrative costs, were discounted to establish a net present value for the investment.

To account for variances in operating conditions over time, a sensitivity analysis was conducted using a net present value model. Variations in the ski area's economic performance may be caused by many factors, including snow conditions, the health of the regional or national economy, and changing demographics and consumer interests. Changes in any of these factors would affect ski area visitation. The model simulates the ski area's economic performance under poor growth in skier visitation, expected growth in skier visitation, and very favorable growth in visitation. The ski area's economic performance was simulated for each of these scenarios by adjusting revenue and operating costs and observing the effect on net present value.

The year 2003 is used for the base-year. This year represents current conditions at the ski area without any proposed improvements. The base-year economic pro-forma used the historical correlation between days of operation, visitation, and related operating revenue and expenses in the period from 1996 through 2002. This analysis established expected revenues and costs for the ski area assuming a 130-day season and COC's projected visitation for the base year. The base-year model also establishes a set of relationships between visitation, revenues and operating expenses that are then used to simulate the change in revenue and expenses for each Action Alternative over time. It should be noted that actual visitation and revenues in the 2003 season were higher than the estimated base-year forecasts.

Each Action Alternative requires a different level of capital investment, both in the total amount invested and in the timing of the investment. Capital investment includes long-lived assets, such as new ski lifts, buildings, parking facilities, ski runs, environmental restoration costs, and related infrastructure that are not typically expensed on an annual basis. Estimates for the level of capital investment associated with each Action Alternative were provided by MAA and the SE Group. Capital investment is expected to occur over three phases for each alternative, with those improvements that would have the greatest attraction for visitors occurring in Phase I, and improvements related to enhancing skier amenities occurring in later phases.

[8] This is the equivalent of the total number of days when the Ariel Chairlift has been completely or partially closed or opened late based on an average over the last five years (1998 - 2003). Partially closed or opened late days are counted as half-days (Source: MAA). On these days, it is projected that visitation is approximately 75% of normal.

The analysis assumes that Phase I improvements would be financed with borrowed funds. This approach would allow the ski area to immediately build those improvements that are most likely to increase visitation without having to wait for fund-raising or retained earnings to accumulate before proceeding with expansion. For Phase II and III, however, the model assumes that these improvements would be financed with retained earnings and fund-raising. The estimated timing for these improvements is shown in FEIS Appendix I, along with their estimated cost.

Growth in operating revenue is a function of growth in visitation. The feasibility analysis assumed average revenue per skier in the base year of $22.86 per skier visit to forecast future revenue for alpine skiers. Snow tubing revenue was based on a constant revenue factor of $15.00 per visitor. Snow tube revenue assumes an average lift price of $12.50 per person and $2.50 per person expenditures on concessions (food, equipment, apparel, etc.). These factors were held constant for the 20-year analysis period. Skier visitation varied by alternative based on the alpine skier forecasts prepared by COC. Visitation for snow tubing was the same for each alternative and also was based on a forecast prepared by COC. Operating costs were broken down for each proposed improvement, which allowed the analysis to adjust operating costs for each proposed development phase. The analysis assumes that operating cost increases for Phase I, and Phase III improvements would be incurred after a two-year construction window. This means that the operating cost increase is not incurred until the second year after construction commences.

Net Present Value Analysis

To compare the economic feasibility of the five action alternatives, a discounted cash flow analysis was performed. The process of determining an appropriate discount rate is very important to this analysis. As a private non-profit entity, MAA does not compete for investment capital in the same way as for-profit ski areas. It has access to sources of capital that are not available to many ski areas. MAA does not need to provide a profit-based return on investment in order to attract investment capital. MAA also does not have ancillary real estate development investments as part of its business, as do many ski areas. These factors combine to reduce investment risk associated with the ski area, but make finding comparable public sources for determining an appropriate discount rate difficult.

The ski area has been able to maintain, and increase, the reserve funds originally set aside at the inception of the non-profit corporation, and has been successful at building its operation in spite of having a terrain mix and facilities that are less than optimal. As a non-profit, however, it does not operate as a typical business. The conventional "text-book" approach for estimating cost of capital involves either calculating internal rates of return on invested capital over time, or finding a market-based cost of capital associated with other companies like MAA. Neither of these approaches are appropriate in MAA's case because there are no public sources of information to support using external sources and because MAA's non-profit status makes developing internal rates of return on invested capital very difficult. The approach used, therefore, infers a discount rate by evaluating levels of risk that MAA faces based on proceeding with expansion.

The analysis assumed a cost of capital for MAA of 20%. This is a total of several risk factors identified in Table I-4 of FEIS Appendix I. This rate (20%) is 2.5 times the ski area's estimated cost of borrowing (8%). The higher discount rate reflects added risk associated with the expansion plans caused by revenue volatility, higher than average maintenance needs (the ski area would install a used ski lift to access the new terrain), and the unpredictable economic and weather cycles that cannot be systematically accounted for in forecasting economic performance.

For each Action Alternative, annual net income was calculated by subtracting debt service, operating and administrative costs, from projected operating income, for a period of 20 years. At the end of that time period, it is assumed that the capital investments associated with each alternative would have a salvage value equal to 10% of their initial cost. Three different visitation scenarios -- low, medium, and high – were evaluated for each alternative. These scenarios are intended to represent different levels of success for the ski area and include a variety of factors that may influence visitation.

Summary of Analysis

Under the "Low Visitor" trend scenario, none of the Action Alternatives return a positive net present value using a 20% discount rate (cost of capital). Alternative 2 returns a positive value under both the "Expected" and "High" visitation trend scenarios. Alternative 6 returns a positive value under the "High" visitation trend scenario. Alternatives 3, 4 and 5 do not return a positive value under any scenario.

Based on FEIS analysis, my decision results in a net present value that is estimated to be higher than Alternative 6, and approaching Alternative 2, and is projected to be a positive amount under the "Expected" visitation trend scenario. Results are displayed below (Table ROD-12) for these two alternatives. In this table, parenthesis around the net present value signifies a negative number.

Table ROD-12. Results of Financial Feasibility Analysis – Net Present Value

Action Alternative	Low Visitor Trend	Expected Visitor Trend	High Visitor Trend
2	$ (178,536)	$ 42,697	$ 207,188
6	$ (377,246)	$ (154,741)	$ 10, 703

Other Issues

Beyond the above listed seven Significant Issues, approximately 45 other issues are also analyzed in the FEIS. All issues are based upon public and agency comments received during the on-going scoping process or are related to satisfying Federal, State, and local requirements and standards, and were also taken into account in my decision. The FEIS documents discussion of these additional issues and effects that were identified during the process but that were not found to be significant issues key to designing alternatives. In evaluating alternatives, these issues were found to have either variable effects or effects that were similar or common to all alternatives, or could be equally mitigated under all alternatives. Because of this, these issues will not be further discussed in this decision document.

ALTERNATIVES CONSIDERED

There are a number of component actions and combinations of components analyzed as an alternative "package" considered in the FEIS. Appendix D of the FEIS discusses many component actions and alternatives that were considered by the Responsible Official, but eliminated from detailed study. Chapter II in the Final EIS identifies and compares a range of actions and alternatives that address, in varying degrees, the Purpose and Need for future expansion of the MASA. Six alternatives are considered in detail including No-Action.

Three action alternatives considered in detail that are primarily based on a site-specific analysis of a current proposal received from the proponent to develop a portion of the Master Plan in the Middle Fork area[9]. Two additional alternatives are analyzed in detail that would expand the ski area predominately in areas other than Middle Fork, within the SUP area and in accordance with the programmatic Master Plan approval made by the 1991 Record of Decision and Final Environmental Impact Statement.

Action Alternatives are options that were considered by Forest Service Responsible Officials, as alternatives that propose some form of ski area expansion and development. Additional Action Alternatives were developed to consider alternative ways to attain the stated Needs and the specific Purpose elements identified in Chapter I of the FEIS. This alternative range is also designed to address the significant resource and social issues identified during scoping as being associated with ski area expansion and/or Alternative 2.

All Action Alternatives incorporate proposed design and facilities based on extensive professional study of the existing facility and SUP area, as well as agency and public comment received on the February 2000 DEIS, scoping in 2002, and comments received on the July 2003 Draft EIS. All Action Alternatives also incorporate improvements based on extensive public dialogue and recent developments in the snow sports business (such as the increase in snowboard use, and the advent of terrain parks and tubing areas).

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9 Within the overall 960 acre SUP area, there are three somewhat distinct sub-areas that logically correspond to geographic locations of potential expansion activities, and are associated with the Alternatives Considered in Detail. The "current facility", is located in the central and southern portion of the SUP area where ski area developments currently exist. The "Middle Fork" area is the area associated with the northwest portion of the SUP area and the Middle Fork of the East Fork of Ashland Creek and Chairlift LC-6. The "Knoll" is the area in and around the northeast portion of the SUP area associated with the geographic feature known as the Knoll.

Alternative 1 (No-Action)

As required by NEPA, a No-Action Alternative is included and analyzed in the Final EIS as a benchmark against which the Action Alternatives can be compared. In this analysis, it also serves as a vehicle for analyzing the effects of no future development within the MASA SUP area at this time. This alternative represents the current conditions and current state of development, with no additional expanded ski area features and facilities, other than those that may have already been analyzed and authorized under NEPA. Current uses (both winter and summer) would remain status quo.

Alternative 1 identifies and describes the baseline conditions of the physical, biological, social and economic environments within the present Mt. Ashland Ski Area. The term 'No-Action" means no change to present conditions; the current set of recreation and resource management activities would continue; no additional expansion, developmental activities or modification of existing facilities, or restoration activities would be authorized at this time, under this analysis.

An additional function of this alternative is to provide an alternative that would not authorize ski area expansion or further developmental activities within the McDonald Peak Inventoried Roadless Area at this time (see Chapter III, Section E, 4, and this Chapter, Section C, 3). However, existing activities identified as occurring within less than one acre of the Inventoried Roadless Area would continue.

This alternative was not selected because:
Alternative 1 does not address the stated Purpose and Need (Chapter I) which includes terrain balance and diversity, guest access and circulation, updating and balancing guest services and facilities, skier safety, economic viability and longevity, and the trend of watershed recovery.

The No-Action Alternative would not improve the current recreation experience. The ski area boundary would not change in size or location and off-trail skiing opportunities would remain the same. During the peak season, some ski runs would continue to be crowded with increases in skier density due to likely increases in skier visits. Presently, the Novice skier has limited accessible terrain on Lower Juliet and then a substantial jump to the more difficult side hill terrain on Avon (the easiest way down from the Windsor Chairlift). Since there is currently no Low Intermediate terrain at MASA, skiers must go directly from Novice to Intermediate terrain in their upward learning progression.

Skier safety problems would increase due to higher skier densities, especially on the narrow "cat-track" portion of Lower Juliet and the Lower Winter area where race events are conducted. The current Ski Patrol facility may not be able to handle an increase in skier injuries if they should occur. Similarly, MASA would continue to experience crowding at the Base Lodge, Rental Shop, and parking lot. On those days when parking is required on the Access Road because of an overflow at the parking lot, pedestrians on the Road would continue to be at risk. The ski area would continue to be known for its steep and short ski runs and outmoded facilities. With increased use, these problems would likely become exacerbated over the long term.

Alternative 2 (Proposed Action)

Under the Proposed Action (described and analyzed as Alternative 2 in the FEIS) the Forest Service would authorize MAA to construct two chairlifts, two surface lifts, and approximately 71 acres of associated new ski terrain primarily within the western half (the East Fork of Ashland Creek or "Middle Fork" area) of the MASA SUP area. There would be an additional 4 acres of clearing for lift corridors and staging areas. In addition, expanded features would include a tubing facility in the southern portion of the permit area; three guest services buildings, a yurt, additional night lighting; additional maintenance access road segments; additional power, water lines and storage tanks, sewer lines; and additional parking areas resulting in an increase in vehicle parking by 220 spaces. Watershed restoration projects would be implemented, including structural storm water control, and non-structural controls, such as the placement of woody material. In total, ski run development would require approximately 68 acres of tree removal. This tree removal would result in approximately 1,822 thousand board feet of commercial grade timber. Under Alternative 2, the ski area boundary would allow off-trail skiers to continue down the ridge to a point just above the lower switchback on the 300 Road where it would intersect the west edge of Run 12 at the top of the Upper Meadow area. It would follow the edge of Run 12 to LC-6. From that point, it would extend upward in an easterly direction along the edge of Run 9 and the Skiway Run (Run 18) to its junction with Rodger's Way. At that point, skiers would turn north into the Middle Fork area.

This alternative was not selected because:
This alternative would have the largest overall environmental effects. I did not select it verbatim as proposed because several design features as included under Alternative 6 offer similar attainment of Purpose and Need, with less environmental effect. There are a number of component features that I support and my decision has included (see Decision section of this ROD). While this alternative has overall the highest level of attainment of Purpose and Need, my decision to select and modify Alternative 2 results similar Purpose and Need attainment with less overall environmental effect.

Alternative 3

Alternative 3 is designed to address the Purpose and Need identified in Chapter I, with less resulting consequence in regard to factors associated with the identified Significant Issues. Specifically, Alternative 3 is primarily based on Alternative 2, with modifications that would not develop skiing terrain west of the proposed LC-6 Chairlift and would not develop additional parking except for the Tubing Facility (approximately 20 spaces) and Bottleneck Widening (MAA would develop some type of shuttle system off of NFSL from Interstate 5 and/or the Rogue Valley). This alternative functions to address the Significant Issues in comparison to Alternative 2, by avoiding direct effects to Engelmann spruce, reducing direct effects to wetlands and Riparian Reserves, reducing effects to water quality, and reducing effects on Mt. Ashland Lupine and Henderson's horkelia. It would also reduce effects associated with the McDonald Peak Inventoried Roadless area over Alternative 2.

Under Forest Service authorization, MAA would construct two chairlifts, one surface lift, and approximately 42 acres of associated new ski run terrain primarily within the western half of the SUP area, including widening of nine existing runs. There would be an additional 2 acres of clearing for lift corridors and staging areas, and approximately 51 acres of gladed skiing terrain. In addition, a 4-acre tubing facility in the southern portion of the SUP area; three guest services buildings, a yurt, additional night lighting; additional maintenance access road segments; additional power, water lines and water storage tank, sewer lines; an additional snow fence, and an increase in parking by 20 spaces. Watershed restoration projects would be implemented, including structural storm water control, and non-structural controls, such as the placement of LWM and Small Woody Material (SWM). All proposed facilities would be developed within the existing SUP area, with the exception of some of the restoration projects.

This alternative would result in the addition of approximately 42 acres of new Beginner to Expert skill level skiing terrain. In addition, 51 acres of terrain would be gladed. Not including glading, this constitutes an approximately 34 percent increase in terrain and would combine with 125 acres of existing ski runs to provide approximately 167 acres of total terrain at MASA. In total, ski run development would require approximately 42 acres of tree removal. This tree removal would result in approximately 1,251 thousand board feet of commercial grade timber. Since MASA opened in 1963, the ski area boundary has extended down the West Ridge within the SUP permit boundary to a point just above the upper switchback on Forest Road 300. This alternative would retain that ski area boundary on the West Ridge. The boundary to the north would then generally follow the location of proposed Runs 12 and 15 in Alternatives 2 and 6.

This alternative was not selected because:
This alternative would have less overall environmental effect than other alternatives in the Middle Fork area, but would have a low (second lowest of the Action Alternatives) attainment of Purpose and Need. It does not include Run 12, a key component in providing additional Novice terrain. It also would incur a relatively high level of detrimental soil effects (estimated at 28%), especially as associated with the Betwixt Run and grading. It would have the greatest detrimental effect on whitebark pine relative to all Action Alternatives. While this alternative would avoid effects to the Lower Wetland area and Engelmann spruce, the degree of ski area expansion it proposes is not enough to warrant the level of financial feasibility risk it would entail. Ski area boundary management would be problematic (see FEIS Chapter IV, page IV-239), as would the increased safety problems associated with little additional parking.

Alternative 4

Alternative 4 is designed to address the Purpose and Need identified in Chapter I, with less resulting consequence with regard to some of the identified Significant Issues. Specifically, Alternative 4 would develop skiing terrain at this time in the eastern portion of the SUP, in and around the "Knoll" area. Development in this area was analyzed as part of the Master development Plan and was programmatically authorized in the 1991 ROD/FEIS.

This alternative functions to address the Significant Issues by avoiding effects to Engelmann spruce, reducing effects to wetlands and Riparian Reserves, reducing effects to water quality, and avoiding effects on Mt. Ashland Lupine and Henderson's horkelia. This alternative was developed by the Forest Service to be responsive to Purpose and Need and to address (reduce) environmental consequences over Alternative 2. Under this alternative, the Forest Service would authorize MAA to implement a variety of facilities improvements primarily in the Knoll area, instead of in the Middle Fork area.

Under Forest Service authorization, MAA would construct five chairlifts, and approximately 66 acres of associated new ski run terrain primarily within the eastern portion of the SUP area, including widening of existing runs. In addition, there would be approximately 4 acres of clearing for lift corridors and staging areas. Additional facilities include a Knoll area lodge, a vehicle/lift shop, maintenance access road segments, additional power, water lines and storage tanks, sewer lines; an additional snow fence, and a new parking lot providing 328 spaces. Watershed restoration projects would be implemented, including structural storm water control, and non-structural controls, such as the placement of woody material.

This alternative would result in the addition of approximately 66 acres of new Beginner to Expert skill level skiing terrain. Constituting an approximate 52 percent increase, the proposed terrain enlargement would combine with 125 acres of existing ski runs to provide approximately 191 acres of total terrain at MASA. In total, ski run development would require approximately 57 acres of tree removal. This tree removal would result in approximately 1,845 thousand board feet of commercial grade timber. Under Alternative 4, the current ski area boundary would remain the same within the current ski area portion of this alternative. From the current Lodge Run area, the boundary would extend down the lower edge of the Bull Gap Road to proposed Run 7. From that point on it would follow the outside edge of Runs 7 and 4 to the Emergency Egress route where it would rejoin a reconstructed Bull Gap Road. From that point, the boundary would follow the road down to Run 3 and then up Run 1 to the Knoll Summit. It would then follow the south edge of LC-10 to the Knoll parking lot.

This alternative was not selected because:
It would have the highest construction costs of any alternative and the lowest net present value of all Action Alternatives. Costs would be high due to the number of lifts and new infrastructure facilities required, many of which would duplicate facilities at the present ski area. In essence, this alternative would amount to a separate satellite ski area. As stated in the 2000 DEIS, this alternative was eliminated from detailed study for some of these same reasons. In addition, this alternative has no outstanding features or components (e.g., Run 12). While this alternative would increase lower ability terrain, the runs would be approximately the same length as the current ski area, unlike runs associated with the Middle Fork area. Finally, this alternative would have the greatest effect on northern spotted owl habitat and received virtually no support in public comment on the 2003 DEIS.

Alternative 5

Alternative 5 is designed to address the Needs and Purposes identified in Chapter I, with less adverse consequences with regard to some of the identified Significant Issues. Specifically, Alternative 5 would develop skiing terrain primarily within the currently developed portions of the SUP area. Many of the components being proposed under this alternative for development in this area were not specifically analyzed in the 1991 ROD/FEIS. This alternative is primarily designed to be responsive to public comments received on the 2000 Draft EIS, scoping in 2002, and public comment on the July 2003 DEIS. While many people commented on development of the current ski area, this alternative also functions to address the Significant Issues by avoiding effects to Engelmann spruce, reducing effects to wetlands and Riparian Reserves, reducing effects to water quality, reducing the effects on Mt. Ashland Lupine and Henderson's horkelia, and avoiding additional effects on the McDonald Peak Inventoried Roadless Area, as compared to Alternative 2.

This alternative was developed by the Forest Service to be responsive to Purpose and Need and to address (reduce) environmental consequences of other Action Alternatives that propose development in currently undeveloped areas. Under this alternative, the Forest Service would authorize MAA to implement a variety of facilities improvements primarily in the Current Facility area, instead of the Middle Fork or Knoll area.

Under Forest Service authorization, MAA would construct three chairlifts (including replacement of existing Ariel), two surface lifts, and approximately 20 acres of associated new ski run terrain within the central portion of the SUP area, including widening of eight existing runs. There would be approximately 2 acres of clearing for lift corridors and staging areas, and an additional 44 acres of gladed terrain. In addition, this alternative includes a 4-acre tubing facility in the southern portion of the SUP area; three guest services buildings, a yurt, additional night lighting; additional maintenance access road segments; additional power, water lines and storage tanks, sewer lines; an additional snow fence, and an increase in parking by 160 spaces. Watershed restoration projects would be implemented, including structural storm water control, and non-structural controls, such as the placement of woody material.

This alternative would result in the addition of approximately 23 acres of new Beginner to Expert skill level skiing terrain. In addition, 44 acres of terrain would be gladed. Not including glading, this constitutes an approximate 18 percent increase in terrain and would combine with 125 acres of existing ski runs to provide approximately 148 acres of total terrain at MASA. In total, ski run development would require approximately 17 acres of tree removal. This tree removal would result in approximately 391 thousand board feet of commercial grade timber. Under Alternative 5, the ski area boundary would remain substantially unchanged except for the area served by LC-5. The Bull Gap Maintenance Road and the Mt Ashland Access Road bound a finger-like extension north of the Radio Facility, and would help orient skiers in case they skied beyond the boundary.

This alternative was not selected because:
This alternative would have the least environmental impact and the poorest attainment of Purpose and Need relative to all of the Action Alternatives. Run length and vertical drop would be identical to Alternative 1. The ski area would continue to experience wind closures on Ariel (even with replacement), problems with lack of sustained fall-line skiing, and increased skier densities. This alternative has the second lowest net present value of all Action Alternatives. Overall, this alternative would show an improvement over the current condition (Alternative 1), but far less so than all the other Action Alternatives, which would provide a higher quality recreation experience.

Alternative 6

Alternative 6 is designed to address the Purpose and Need identified in Chapter I, with less consequence in regard to factors associated with the identified Significant Issues. Specifically, Alternative 6 is primarily based on Alternative 2, with environmental modifications that would reduce effects, but would not reduce skiing terrain as much as is proposed under Alternative 3. This alternative functions to address the Significant Issues by reducing effects to Engelmann spruce, reducing effects to wetlands and Riparian Reserves, reducing effects on soils and water quality, and reducing effects on Mt. Ashland Lupine and Henderson's horkelia. It is also designed to provide an adequate range of alternatives considered in detail. Alternative 6 is somewhat of a blending of expansion components being considered within the Middle Fork area.

This alternative was developed by the Forest Service to be responsive to Purpose and Need and to address (reduce) environmental consequences with expansion in the Middle Fork area, over Alternative 2. Under this alternative, the Forest Service would authorize MAA to implement a variety of facilities improvements. Projects being proposed include: construction of a new chairlift and associated skiing terrain within the western portion (the Middle Fork area) of the SUP area, additional skier service facilities, a chairlift providing access to Lower Caliban and Lower Dream, a short surface lift in the vicinity of the Base Area to better utilize existing terrain, a snow tubing area, additional parking, and necessary supporting infrastructure.

Under Forest Service authorization, MAA would construct two chairlifts, two surface lifts, and approximately 65 acres of associated new ski run terrain primarily within the western half of the SUP area, including widening of six existing runs. There would be approximately 5 acres of clearing for lift corridors and staging areas. This alternative also includes a 4-acre tubing facility in the southern portion of the SUP area; three guest services buildings, a yurt, additional night lighting; additional maintenance access road segments; additional power, water lines and storage tanks, sewer lines; an additional snow fence, and a new parking area providing 328 spaces (in the Knoll area). Watershed restoration projects would be implemented, including structural storm water control, and non-structural controls, such as the placement of LWM and SWM.

Under Alternative 6, the use of an excavator for run clearing (and other excavation work associated with clearing for lifts; lift towers and creek crossings, except where accessible by road) would be restricted to a lightweight, low ground pressure machine (e.g., a "spider"). This relatively light (16,000 pound) excavator can be air lifted in and out of construction sites. Under Alternative 6, the specified crossing of Lower Run 12 (IM-3) would use log footings, as opposed to excavated concrete footings (see component descriptions for IM-2 and IM-3 in Section F, FEIS Chapter II for more detail).

This alternative would result in the addition of approximately 65 acres of new Beginner to Expert skill level skiing terrain. Constituting an approximately 52 percent increase, the proposed terrain enlargement would combine with 125 acres of existing ski runs to provide approximately 190 acres of total terrain at MASA. In total, ski run development would require approximately 65 acres of tree removal. This tree removal would result in approximately 1,757 thousand board feet of commercial grade timber.

Under Alternative 6, the current roped ski area boundary would extend down the West Ridge to a point above the upper switchback on Road 300. It would turn north and follow the west edge of Run 15 where it would intersect the west edge of Run 12 at the top of the Upper Meadow area. It would follow the edge of Run 12 to LC-6. From that point, it would extend upward in an easterly direction along the edge of Run 9 and the Emergency Egress route to its junction with Rodger's Way.

This alternative was not selected because:
I did not select Alternative 6 verbatim because it does not include my preferred configuration for parking and does not include my preference for inclusion of the Moraine Lodge. Several design features are included under Alternative 6 that offer similar attainment of Purpose and Need, with less environmental effect. That is why I included a number of Alternative 6 component features in my decision (see Decision section of this ROD). While this alternative would have an overall high level of attainment of Purpose and Need, my decision to select and modify Alternative 2 results in similar Purpose and Need attainment with less overall environmental effect.

ENVIRONMENTALLY PREFERRED ALTERNATIVE

It is required by law that one or more environmentally preferable alternatives be disclosed. The environmentally preferred alternative is not necessarily the alternative that will be implemented and it does not have to meet the underlying Purpose and Need for the project. It does however, have to cause the least damage to the physical and biological environment and best protects, preserves and enhances historical, cultural, and natural resources (Section 101 NEPA; 40 CFR 1505.2(b)).

I have determined that Alternative 5 has the least impact in terms of causing damage to the physical and biological environments, of the Action Alternatives considered that propose ski area expansion. The No-Action Alternative would include no additional disturbance associated with ski area expansion but would not meet the stated Purposed and Need. Further, it would not allow restoration activities to be authorized at this time, which would contribute to continued recovery of affected watersheds.

PUBLIC INVOLVEMENT

Scoping is the name for the process used to determine the extent of the environmental analysis to be conducted. It is used early in the NEPA process to identify (1) the issues to be addressed, (2) the depth of the analysis required, (3) alternatives to the Proposed Action, and (4) potential environmental effects of the Proposed Action. The Final EIS was developed with extensive public participation. The public involvement requirements of NEPA (40 CFR 1501.7) have been met in order to develop and publish a Final EIS for release to an informed public.

The scoping process for the 1991 Master Plan FEIS began in October 1984. Public involvement continued for six years through November 1990. See pages I-4, 5 and Appendix J in the 1991 FEIS for a full discussion of public involvement that contributed to the Record of Decision signed in July 1991. Scoping for a site-specific proposal for ski area expansion unofficially began in October of 1997.

On March 4, 1998, MAA submitted to the Forest Service a proposal to implement a variety of on-mountain improvements, including expansion into the Middle Fork area (similar to the proposed action in this Final EIS). On March 18, 1998 a scoping letter was sent out to approximately 260 individuals, businesses, organizations, and others who were on the 1991 FEIS mailing list.

In September 1998, the Ashland Ranger District announced that a Supplemental EIS would be prepared instead of an Environmental Assessment. This announcement was reported by both newspaper and broadcast media. On December 21, 1998, MAA submitted a refined and more detailed proposal to the Forest Service that was again extensively reported by the press. Another scoping letter was sent on January 15, 1999 and a Notice of Intent was published in the Federal Register. Both documents announced the Forest Service's intent to supplement the 1991 FEIS. Four informal public meetings (workshops, each lasting seven hours) were held on March 8, 15, 22, and 29, 1999 at the Ashland Ranger District to discuss the Proposed Action and to ask for further public input on issues and alternative aspects of the Proposed Action.

The initial Notice of Intent for a Supplemental EIS was published in the Federal Register on January 8, 1999; FR page 2873-2874. Based on further review, the Forest Service determined that a project-specific EIS was the more appropriate type of document for complete disclosure of the analysis regarding a proposal for expansion of MASA, tiering to an existing (1991) decision. The NOI for a supplement was rescinded and a new NOI describing this intent was published in the Federal Register on October 12, 1999 (FR pages 55228 and 55228-55229). The Forest Service prepared a Draft EIS and a Notice of Availability was published by the Environmental Protection Agency in February 2000. An amended notice of Availability was released on April 14, 2000 (FR page 5520156), which extended the Comment Period for the Draft EIS from April 3, 2000, to May 4, 2000. The extent of public and agency comment on that Draft EIS was substantial. Substantive comments and suggestions, especially regarding alternatives considered and additional components of actions or alternatives that were not considered in detail, caused the Responsible Official to decide to prepare a new Draft EIS; this document was considered a continuation of the ongoing environmental analysis.

Based on the decision to issue a new Draft EIS, a new NOI was issued on April 1, 2002 (FR page 15356, 15357). This new EIS resulted in an analysis that reflects active citizen participation and improves the range of alternatives considered in detail. This process was designed as a continuation of the ongoing environmental analysis and all input previously received is incorporated into the new DEIS.

The Draft EIS was made available for comment under the provisions of the National Environmental Policy Act (40 CFR 1500-1508), and Notice, Comment, and Appeal Procedures for National Forest System Projects and Activities, (36 CFR 215). The Forest Service accepted written, electronic and oral comments as provided in §215.6. A 60-day public comment period for the Mt. Ashland Ski Area Expansion DEIS formally began on July 25, 2003 with publication of a Notice of Availability in the Federal Register (FR 44080). A press release announcing the availability of the DEIS was sent to local media in southern Oregon and northern California on July 22, 2003. At the request of the City of Ashland, the public comment period was extended for an additional 30 days on August 18, 2003. This extension allowed for a 90-day comment period that closed on October 23, 2003.

Forest Service employees, including the IDT that analyzed the six alternatives in the DEIS, held an Open House to facilitate public comment and to clarify the alternatives before the October 23 public comment deadline. A formal public hearing was also conducted on September 2, where numerous individuals provided oral comments to the Forest Supervisor (Scott Conroy) and the Acting Ashland District Ranger (John Schuyler). Four public field trips to the MASA were lead by Forest Service personnel. Further field trips were also conducted for City of Ashland officials. Other organizations also led field trips to the ski area. City of Ashland staff and council members conducted one study session and two city council meetings devoted to the DEIS. Public attendance at these meetings showed a high interest in issues associated with the proposed expansion of MASA.

A total of 3,269 comments to the Draft EIS were received by the Ashland Ranger District. All comments received by the close of the Comment Period were reviewed and were considered as part of the comment analysis process. Comments received following the close of the Comment Period were reviewed for substantive content but were not entered in the database (these people do not have "standing" for appeal under 36 CFR 215). All comments were read and coded based on content and intent, by a Forest Service planning team, with District Ranger oversight, review and concurrence. The District Ranger read all unique comment letters.

Pursuant to 36 CFR 215.6 (b), (1), A "Response to Comments" appendix documents the Responsible Official's consideration and response of all substantive comments submitted in compliance with paragraph (a) of this section. This document is contained in FEIS Appendix A.

FINDINGS

In evaluating MAA's proposal for expansion, the Forest Service is required to ensure that management direction has been addressed for proposed actions and project areas and that actions are in the public interest. There are a variety of laws and regulations that call for the agency to work with private industry to provide needed recreational facilities, including downhill ski areas, on suitable NFSL. Special Use Permits are to be administered for public recreational uses that promote public health and safety and protect the environment. The major laws include the Organic Administrative Act of 1897, the Weeks Act of 1911, the Multiple-Use Sustained Yield Act of 1960, the Forest and Rangeland Renewable Resources Planning Act of 1974, the National Forest Management Act of 1976, and the National Forest Ski Area Permit Act of 1986. The Forest Service is authorized to provide recreational opportunities on NFSL funded through private enterprise (16 United States Code [USC] 497). Special Use Permits are to be administered for recreation uses that serve the public, promote public health and safety, and protect the environment. Further, as directed by the National Forest Ski Area Permit Act of 1986 (16 USC 497 and 26 CFR 251), a ski area is defined as:

> "a site and attendant facilities expressly developed to accommodate alpine or Nordic skiing and from which the preponderance of revenue is generated by the sale of lift tickets and fees for ski rentals, for skiing instruction and trail passes for the use of permittee-maintained ski trails. A ski area may also include ancillary facilities directly related to the operation and support of skiing activities."

Skiing is an important component of the recreational opportunities offered by the National Forests. Forest Service policy encourages year-round recreation opportunities at ski areas to serve the public, provide economic stability to local communities, and promote economic commercial ventures (FSM 2342.1). The *Recreation Agenda* (USDA FS 2000) details the Forest Service role in increasing outdoor recreation on NFSL through partnerships with other public and private entities (e.g., state agencies, the ski industry, and non-profit organizations).

I find my decision to be in alignment with this management direction and that my decision is in the public interest.

Forest Plan Consistency (NFMA)

Pursuant to 40 CFR 1502.20, the National Forest Management Act requires a specific determination of consistency with the Rogue River and Klamath National Forest Land and Resource Management Plan and its Standards and Guidelines. Modified Alternative 2 has been developed to be in full compliance with the Forest Plans and NFMA, as discussed below.

Rogue River and Klamath National Forest Plans

Pursuant to CEQ 1502.20, the Final EIS is tiered to the FEIS and ROD for the Rogue River National Forest Land and Resource Management Plan (USDA Forest Service 1990a) as amended by the Northwest Forest Plan (USDA Forest Service and USDI Bureau of Land Management 1994b). My decision is located on lands allocated to Administratively Withdrawn under the Northwest Forest Plan. The Final EIS is also tiered to the FEIS and ROD for the Land and Resource Management Plan for the Klamath National Forest (KNF LRMP 1995c).

The RRNF LRMP (1990) provides long-range management direction for the RRNF; all uses on the Forest must address consistency with management prescriptions (strategies) applicable to specific management areas. Its overall Forest Management Goal is to "Provide a balance of resource management activities that will maintain a healthy forest ecosystem as well as helping to supply local, regional, and national social and economic needs. Maintain close coordination with adjacent landowners, both private and public…for better management of all resources. Seek opportunities for partnerships with other agencies and the private sector to enhance resource protection and local development." (RRNF LRMP 1990, page 4-1).

Specific goals for "Facilities" states "Provide and manage efficient administrative sites and facilities sufficient to accomplish land and resource management and protection objectives. Provide safe, efficient, environmentally sound access for the movement of people and materials involved in the use and management of National Forest lands." (RRNF LRMP 1990, page 4-3). Under "Forest Management Objectives and Resource Summaries", specifically "Recreation", it states "The Rogue River National Forest will provide recreation experiences across the range of the Recreation Opportunity Spectrum. The Forest will be placing increased emphasis on all aspects of recreation…." (RRNF LRMP 1990, page 4-22). "The developed recreation program will emphasize the rehabilitation or upgrading of existing sites to modern standards. In addition, maintenance funding has been increased so that all sites will be managed at full service levels. The Forest will manage for 9,968 persons-at-one-time (PAOT) at the developed sites. Expansion of existing alpine ski areas will be emphasized over development of new ones." (RRNF LRMP1990, page 4-23).

The KNF LRMP (1995) provides long-range management direction for the KNF. The USDA Forest Service Mission, included in the KNF Land and resource Management Plan, is "To sustain the health, diversity and productivity of the Nation's forests and grasslands to meet the needs of present and future generation." (KNF LRMP, page 4-3). In stating the Forest Vision, the KNF is envisioned as a place where "A variety of pleasing environments are actively managed for the recreational benefits of both area residents and Forest visitors." Under "Forest Program emphasis; Recreation Management" it states: "develop a program that is supportive to the communities' efforts to diversify, strengthen and attract natural resource-oriented activities and businesses which will strengthen rural economies. Offer a wide range of recreation attractions and opportunities that are responsive to the demands of multi-cultural, traditions and non-traditional recreation users. Locate and manage developed recreation sites primarily to support recreationists as they participate in off-site recreational activities within the recreational emphasis areas…" (KNF LRMP, page 4-7).

The respective LRMPs designate the MASA SUP area as Developed Recreation (MA-4), or as Administratively Withdrawn. The 1991 ROD/FEIS for the MASA enlarged the SUP area and this area is currently being managed for Developed Recreation under the guidelines of the RRNF LRMP. The currently proposed facility expansion (under all Action Alternatives in this Final EIS) is contained totally within this expanded SUP area. Of the 960 acres within the SUP area, 888 acres are located on the RRNF and 72 acres are on the KNF.

The goals and objectives of the Developed Recreation Management Strategy are to provide quality outdoor recreation opportunities within a forest environment that is modified for visitor use, visitor satisfaction, and accommodation of large numbers of visitors (RRNF LRMP page 4-53). I find my decision to be consistent with Forest Plan management direction and that my decision is in compliance with NFMA.

Northwest Forest Plan - Riparian Reserve Standards and Guidelines

The analysis of the existing conditions of the four affected sub-watersheds relative to Riparian Reserve Standards and Guidelines (1994 ROD, pages C-31 through C-39) is presented in FEIS Chapter IV for all alternatives considered in detail. These Standards and Guidelines were reviewed for applicability relative to the types of actions being proposed and authorized. The Recreation Management Standards and Guidelines RM-1 and RM-2 (NWFP page C-34) were determined to be applicable because recreation management is the goal of ski area expansion. The General Riparian Management Standards and Guidelines (NWFP page C-37) were determined to be applicable to all projects under the NWFP that are proposed within Riparian Reserves. The Watershed and Habitat Restoration and Fish and Wildlife Management Standards and Guidelines (NWFP page C-37) WR-1, WR-2, WR-3, and FW-1 were determined to be applicable because restoration projects are a connected action to ski area expansion.

Compliance with these Standards and Guidelines relative to my decision is similar to Alternative 2; narrative discussion is contained in FEIS Chapter IV, Table IV-14, page IV-105 and 106.

1991 Mt. Ashland Ski Area Master Plan ROD/FEIS

The 1991 ROD/FEIS authorized the programmatic Master Plan that currently controls development at MASA. This Master Plan programmatically authorizes MASA to expand (as described in the 1991 ROD, page 13) in accordance with Alternative 7. This Selected Alternative "would expand MASA's capacity to 4,795 PAOT, served by a total of eight lifts. Skiable terrain would be increased to 197 acres. One mile of cross-country trail would be groomed on Road 20. No permanent facilities would alter the character of the south side of Mount Ashland. A transport lift would connect the existing lodge to a new facility at the Knoll. MASA's permit area would be expanded to enclose a total of 1,180 acres (*see discussion in FEIS Chapter II for corrections to this acreage figure*), primarily including areas north of the Bowl and the Knoll. Parking capacity would be increased to accommodate just over 1,900 vehicles. Summer uses would be developed." Also see Section D of FEIS Chapter I for more information on the decisions made in the 1991 ROD.

I find my decision to be consistent with this programmatic Master Plan and that my site-specific decision to authorize expansion is in compliance (and does not exceed) the programmatic aspects of the 1991 Record of Decision. My decision does not foreclose future proposals by MAA to implement further aspects of the Master Plan pending site-specific environmental analysis.

Other Legal Requirements and Policies

In reviewing the FEIS and actions involved in my decision (Modified Alternative 2), I have concluded that my decision is consistent with the following laws, requirements and current or proposed policies:

The Preservation of American Antiquities Act, June 1906: All surveyed and inventoried cultural resource sites associated with Mt. Ashland Ski area expansion will be protected from entry and excluded from any resource management activities. New sites discovered during operations will be protected by required Mitigation Measures (See FEIS IV-IV-197 and Rod Attachment B).

The National Historic Preservation Act: The Oregon State Historic Preservation Officer (SHPO) has been consulted concerning activities associated with Mt. Ashland Ski area expansion. The Advisory Council on Historic Preservation (ACHP) will be consulted about measures to protect significant archaeological sites from adverse affects, should any be identified (SHPO letter is included in FEIS Appendix N).

The National Environmental Policy Act (NEPA), 1969: NEPA establishes the format and content requirements of environmental analysis and documentation, such as Mt. Ashland Ski area expansion. The entire process of preparing an environmental impact statement was undertaken to comply with NEPA.

The Endangered Species Act of 1973, as amended: Biological Evaluations and Assessments have been prepared to document possible effects of activities on endangered and threatened species associated with Mt. Ashland Ski area expansion. Appropriate coordination, conferencing, and consultation with USFWS and NOAA Fisheries have been completed. Consultation letters from NOAA Fisheries and the USFWS are found in FEIS Appendix M (Biological Assessments are available in the project records). A most recent Biological Opinion 8330.05373 (FWS log # 1-15-04-F-0537, Reinitiation for 1-7-98-F-414) is available upon request.

An effects analysis was prepared to assess potential effects to Sensitive Species as identified by the Regional Forester. This evaluation determined that while there may be impacts to individual sensitive species, those effects are not likely to contribute to a trend towards federal listing or loss of viability of the population or species. All field surveys for activities listed in this ROD have been competed.

Clean Air Act Amendments, 1977: My decision is designed to meet the National Ambient Air Quality standards through avoidance of practices that degrade air quality below health and visibility standards. The Oregon State Implementation Plan and the Oregon State Smoke Management Plan will be followed to maintain air quality (See FEIS IV-107-IV-110)

The Clean Water Act, 1982: My decision will meet and conform to the Clean Water Act as amended in 1982. This act establishes a non-degradation policy for all federally proposed projects. My decision meets anti-degradation standards agreed to by the State of Oregon and the Forest Service, Region 6, in a Memorandum of Understanding (Forest Service Manual 1561.5). This will be accomplished through planning, application, and monitoring of Mitigation Measures including Best Management Practices (BMPs).

The FEIS identified and completed an analysis of effects to section 303(d) listed water quality limited water bodies adjacent or down stream of the Special Use Permit area. My decision is designed to avoid impacts where possible, and where impacts cannot be avoided, mitigation is designed to minimize the potential for accelerating sedimentation to streams (see ROD Attachment B).

State Forest Worker Safety Codes: The Oregon Occupational Safety and Health Code for Forest Activities (OAR 437, Division 6) regulations will be met when my decision is implemented. Appropriate provisions will be included in all contracts for addressing State Forest Worker Safety Codes.

IMPLEMENTATION

Implementation of my decision to authorize expansion at the Mt. Ashland Ski Area may take place 50 days following the publication of a legal notice announcing this decision in the Newspaper of Record for the Rogue River-Siskiyou National Forest, Medford's *Mail Tribune*. This decision is anticipated to be implemented beginning in the summer of 2005.

Permits, Authorizations, and Bonding

The Special Use Permit includes all management direction and Mitigation Measures identified in the 1991 Master Plan, as well as permit clauses that govern the Forest Service/permittee relationship (i.e., the extent of commercial operations allowed, food and beverage services, facility maintenance, etc.). The Action Alternatives analyzed in the FEIS and my decision are designed to represent a reasonable scenario for authorization of ski area expansion. The environmental analysis process requires that the FEIS describe the environmental consequences of each alternative relative to ground-disturbing activities, not to be prescriptive of what takes place in an operational sense. The Forest Service believes that MAA and their consultants are in the best position to determine where, for example, services are located. Exact locations and function of each building(s) will be determined at implementation. Final and exact facility, lift, ski run locations and other design features may be refined to a reasonable and logical extent during implementation (see Mitigation Measures, Attachment B), not to exceed environmental consequences predicted in the FEIS.

An operating plan is required and is updated annually prior to operations, and the operating plan includes authorization and scheduling of development activities. The annual operating plan includes the Summer Work Plan, and describes how MAA will carry out construction and operations in accordance with the terms of the SUP and my decision. This operating plan will also be in accordance with the Mitigation Measures required by my decision.

Actual construction will not occur until the Forest Supervisor or delegated Responsible Official approves the operating plan. Compliance with the operating plan will be monitored by the Ashland Ranger District staff and Forest Service resource specialists.

State and local agencies have regulatory responsibilities for many activities and actions being authorized; these will be finalized during the design, construction, and operation phases of actual expansion. Licensed professionals are required to prepare the construction drawings for facilities, utilities, structures, parking areas, etc. These proposals will then be reviewed by the appropriate state or local agency departments of environmental quality, planning, building, or health. Approval by these agencies is a condition of the SUP issued by the Forest Service.

Currently, the SUP requires a $200,000 bond for ski area restoration in the unlikely event that operations (currently managed by MAA) declare bankruptcy and a subsequent decision is made to abandon the ski area. This amount was based on an April 1992 Restoration Environmental Assessment and Decision Notice for the current facility. The City of Ashland, under their current lease agreement with MAA, requires MAA to have this amount available in “readily available liquid assets”, thereby meeting this requirement.

Under ski area expansion activities being authorized by my decision, the bond or assets available amount under the SUP will be proportionally adjusted to account for the increase in developed area, and the subsequently increased need for funding for reclamation (above the current amount) in the event of ski area closure.

Process for Change During Implementation

Minor changes may be needed during implementation to better meet on-site resource management and protection objectives. Minor adjustments to ski runs, facilities, and infrastructure elements may be needed during final design for resource protection, to improve operational feasibility, and to better meet the intent of my decision. Many of these minor changes will not present sufficient potential impacts to require any additional specific documentation or action to comply with applicable laws. Notable changes will be documented through implementation monitoring and made available to the public.

Implementation and effectiveness monitoring conducted in association with management activities authorized by this Record of Decision provide opportunity for adapting management techniques as needed to better meet the intent of the selected alternative as planned and approved. In some cases this may involve minor modifications or corrections during implementation. For instance, implementation monitoring of the effectiveness of straw bales might indicate a need to make adjustments or corrections to better meet the intent of preventing off-site sediment movement. Monitoring may indicate a need to adjust, change, or improve upon certain mitigation measures. These types of corrections or adjustments would be implemented as needed.

Project monitoring could result in the need to propose changes to authorized project actions; these changes will be subject to the requirements of the NEPA and other laws concerning such changes. In determining whether and what kind of further NEPA action is required, the Responsible Official will consider the criteria in 40 CFR 1502.9(c) and FSH 1909.15, sec. 18, and in particular whether the proposed change is a substantial change to the selected alternative as planned and already approved, and whether the change is relevant to environmental concerns. Connected or interrelated proposed changes regarding particular areas or specific activities will be considered together in making this determination. The cumulative impacts of these changes will also be considered.

APPEAL PROCESS AND RIGHTS

My decision is subject to administrative appeal. Organizations or members of the general public may appeal my decision according to Title 36 CFR Part 215. The City of Ashland and the Mt. Ashland Association may appeal this decision pursuant to 36 CFR 251, Subpart C (one or the other, but not both regulations).

The 45-day appeal period begins the day following the date the legal notice of this decision is published in the *Medford Mail Tribune, Medford*, Oregon, official newspaper of record for the Rogue River-Siskiyou National Forest. The Notice of Appeal must be filed with the Appeal Deciding Officer:

Appeal Deciding Officer: Linda D. Goodman
Pacific Northwest Region
USDA Forest Service
Attn. 1570 Appeals
PO Box 3623
333 S.W. First Avenue
Portland, OR 97208-3623

Appeals can also be filed electronically at: appeals-pacificnorthwest-regional-office@fs.fed.us or hand delivered to the above address between 7:45 AM and 4:30 PM, Monday through Friday except legal holidays. The appeal must be postmarked or delivered within 45 days of the date the legal notice for this decision appears in the Medford Mail Tribune newspaper. The publication date of the legal notice in the Medford Mail Tribune newspaper is the exclusive means for calculating the time to file an appeal and those wishing to appeal should not rely on dates or timeframes provided by any other source.

Electronic appeals must be submitted as part of the actual e-mail message, or as an attachment in Microsoft word (.doc), rich text format (.rtf), or portable document format (.pdf) only. E-mails submitted to email addresses other than the one listed above or in other formats than those listed or containing viruses will be rejected. Only individuals or organizations that submitted substantive comments during the comment period may appeal. It is the responsibility of those who appeal a decision to provide the Regional Forester sufficient written evidence and rationale to show why my decision should be changed or reversed. The written notice of appeal must:

- The Appellant's name, address, and if possible, a telephone number of the appellant;
- Signature or other verification of authorship upon request (a scanned signature for electronic mail may be filed with the appeal);
- When multiple names are listed on an appeal, identification of the lead appellant (215.2) and verification of the identity of the lead appellant upon request:
- Identify the decision document by title and subject, date of the decision, and name and title of the Responsible Official;
- Identify the specific change(s) in the decision that the appellant seeks or portion of the decision to which the appellant objects; and the rational for those changes;
- Identify any portion(s) of the decision with which the appellant disagrees, and an explanation for the disagreement;
- State how my decision fails to consider substantive comments previously provided, either before or during the comment period specified in Title 36 CFR 215.6 and, if applicable, how the appellant believes the decision violates law, regulation, or policy.

Scott D. Conroy

SCOTT D. CONROY
Forest Supervisor, Responsible Official
Rogue River-Siskiyou National Forest

9/13/04
Date

For further information concerning the specific actions authorized by my decision, you may contact:

Linda Duffy, District Ranger
Or Steve Johnson, Team Leader
Ashland Ranger District
645 Washington Street
Ashland, OR 97520
(541) 552-2900

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ATTACHMENT A

RECORD OF DECISION
MODIFIED ALTERNATIVE 2 MAP

ATTACHMENT A. Record of Decision – Modified Alternative 2 Map

To view the alternative map, click on the following link:

http://www.fs.fed.us/r6/siskiyou/planning/mtashland/rod/decision-map.pdf

ATTACHMENT B

REQUIRED MITIGATION MEASURES

ROD ATTACHMENT B

Required Mitigation Measures

Mitigation Measures are a required component of the Record of Decision and are identified and detailed within this attachment, and will be enacted for the authorized ski expansion activities.

The Forest Service is required by the Council on Environmental Quality (CEQ) Regulations for implementing the procedural provisions of NEPA to identify all relevant, reasonable mitigation measures that could improve the project. Mitigation, as defined in the CEQ Regulations (40 CFR 1508.20) includes:

- Avoiding the impact altogether by not taking a certain action or parts of an action.
- Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
- Rectifying or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- Compensating for the impact by replacing or providing substitute resources or environments.
- Rectifying the impact by repairing, rehabilitating or restoring the affected environment.

Many potential effects have been eliminated or lessened through the design process (see Section D, 1 FEIS Chapter II). Note that some measures will be enacted only if certain future conditions exist that would require them (e.g., if a new nesting pair of spotted owls is discovered within 0.25 miles of a development area). Other mitigation (e.g., undulation of edges of ski run clearing) will be done to a feasible extent, with the precise extent of application of the requirement being unknown prior to implementation.

Required Mitigation Measures and Standard Operating Procedures designed to avoid or minimize adverse effects (or implement beneficial effects) for the decision under the ROD are identified by resource topic area, and in some cases, by the specific component or sub-component project within the authorized activity. These measures are specific to implementation of actions authorized by the decision under the ROD. Standards and Guidelines and mitigation measures identified in the RRNF and KNF LRMPs are also incorporated by reference as required measures.

The effectiveness and feasibility of the Mitigation Measures are assessed based upon the following rating system. These ratings are applied to all Mitigation Measures, except the Standard Operating Procedures identified below. Each measure identifies the code for effectiveness and feasibility at the end of the statement or paragraph. Ratings were determined by agency resource specialists based on current scientific research and/or professional experience.

Figure ROD B-1. Effectiveness and Feasibility of Mitigation Measures

EFFECTIVENESS (E)

E1	Unknown or experimental; little or no experience in applying this measure. May not substantially reduce effect.
E2	Usually reduces significant effects; often done in this situation.
E3	Almost always reduces effects substantially; almost always done in this situation.

FEASIBILITY (F)

F1	Unknown or experimental; little or no experience in applying this measure. May be technically difficult or very costly. May be legally or socially difficult.
F2	Technically probable; costs moderate to high in comparison to other options. Legally or socially acceptable with reservations.
F3	Technically easy; costs low in comparison to other options. Legally or socially expected.

A. Standard Operating Procedures

Introduction
A number of Mitigation Measures are basically Standard Operating Procedures (SOP) that will be employed by the Forest Service and those implementing authorized actions, pursuant to Federal and State regulations, and Forest Service Manual direction. These procedures will apply irrespective of the element or aspect of ski area expansion.

(**SOP-1**) Prepare and submit a phased development plan (annual operating plan or Summer Work Plan) for Forest Service approval prior to implementation of any authorized expansion component project. This plan will detail specifically how and when development of authorized activities will occur. The Mitigation Measures (identified in the ROD) and listed herein will be made a part of this plan. Implementation plans will be periodically updated to reflect changing conditions. **(E3, F3**)

(**SOP-2**) Construction documents will be prepared and stamped by a professional engineer, as required by law or regulation, and approved by the Forest Service. **(E3, F3)**

(**SOP-3**) For each project, an Implementation Plan will be prepared with a list of site specific Mitigation Measures (including those from this section and others as deemed appropriate). This plan will be approved by the Forest Service prior to implementation of any project. Construction will not begin until authorized by the Forest Service and approved by all applicable Federal, State and local agencies. **(E3, F3)**

(**SOP-4**) Comply with all Terms and Conditions and standards for protection of Threatened, Endangered and Sensitive species, in compliance with the Endangered Species Act. **(E3, F3).**

(SOP-5) Comply with all requirements and standards of the Clean Water Act. Comply with all requirements and standards of the Clean Air Act. **(E3, F3)**

(**SOP-6**) Pursuant to the American Disabilities Act of 1991, design and construct new and remodeled facilities on NFSL to meet the needs of the disabled. **(E3, F3)**

(**SOP-7**) Construct all structures to standards of the Uniform Building Code, National Plumbing Code, National Electric Code, and/or other recognized standards. **(E3, F3)**

(SOP-8) Construct all ski lifts and associated infrastructure to American National Safety (ANSI) standards. **(E3, F3).**

(SOP-9) Obtain all Federal, State, and local permits as required. **(E3, F3).**

(SOP-10) Provide for public safety at all times. **(E3, F3).**

B. Hydrology, Soils and Geology

Background

Mt. Ashland Association (MAA) has been successful in mitigating soil displacement and maintaining or enhancing soil fertility with previous actions. Areas opened for lifts and ski runs on lower Comer Lift utilized logs/limbs anchored with tree stumps across steep slopes to secure soils and to add woody material. Other mitigation examples occur on Dream, Winter, and Pistol Ski Runs where small trees, rocks and limbs were placed on contour to the ski runs that were widened or where obstacles were removed in the past ten years.

Erosion control practices applied by MAA along intermittent stream channels and gullies have included log and rock check dams, erosion control blankets, and vegetation planting. These practices have been successful in reducing soil movement in and along stream channels within the current ski area.

Effective mitigation is started during the EIS planning phase, is concentrated upon during the implementation and construction phase, and is continued with ongoing maintenance and attention to any problematic sites. To effectively mitigate for potential effects to water quality it is important to begin during the design phase of each component project. The erodible nature of the native granitic soils requires close oversight and monitoring of the location and construction methods associated with the proposed activities, in order to avoid and minimize effects to the environment and maintain high water quality.

Water Quality Best Management Practices

Best Management Practices (BMPs) as identified in *General Water Quality Best Management Practices* (USDA PNW 1988) contain mitigation measures that will be used to protect watershed conditions and water quality. All of these measures are rated **(E3, F3), in terms of effectiveness and feasibility.** While the terminology in these BMPs is dated (for example, Streamside Management Unit now falls under Riparian Reserve), they are still considered effective under today's management direction. Further BMP guidelines as detailed in *Ski Area BMPs - Guidelines For Planning, Erosion Control and Reclamation*, will also be followed where applicable (USDA Wasatch-Cache NF 2001g).

Specific Water Quality BMPs determined to be applicable to ski area expansion activities identified in the 1988 publication (identified above and incorporated by reference) are made required mitigation. These Mitigation Measures (including the clearing for ski runs and lifts which is similar to a timber harvest action, and maintenance road construction or reconstruction) include:

TIMBER HARVEST (T)

- **T-5** Limiting the Operating Period of Timber Sale Activities
- **T-7** Streamside Management Unit Designation
- **T-8** Streamcourse Protection
- **T-10** Log Landing Location
- **T-12** Suspended Log Yarding in Timber Harvesting
- **T-13** Erosion Prevention and Control Measures During Timber Sale Operations
- **T-14** Revegetation of Areas Disturbed by Harvest Activities
- **T-18** Erosion Control Structure Maintenance.
- **T-21** Servicing and Refueling Equipment

ROAD SYSTEMS (R)

R-1 General Guidelines for the Location and Design of Roads
R-2 Erosion Control Plan
R-3 Timing of Construction Activities
R-5 Road Slope and Waste Area Stabilization (Preventive)
R-9 Timely Erosion Control Measures on Incomplete Roads and Stream Crossing Projects
R-18 Maintenance of Roads

WATERSHED MANAGEMENT (W)

W-1 Watershed Restoration
W-3 Protection of Wetlands
W-4 Oil and Hazardous Substance Spill Contingency Plan and Spill Prevention Control and Countermeasures Plan
W-6 Control of Activities Under Special Use Permit
W-7 Water Quality Monitoring
W-9 Surface Erosion Control at Facility Sites

RECREATION (REC)

REC-1 Provide Safe Drinking Waters Supplies
REC-2 Documentation of Potable Water Supplies
REC-3 Management of Sanitation Facilities
REC-5 Assuring Proper Sanitation and Water Supplies for Special Use Permit Facilities

For actions applicable to the Klamath National Forest, BMP guidelines are found in Appendix D of the LRMP. For a more complete discussion of the actual practices, refer to the *Water Quality Management for National Forest Systems Lands in California*, 1979. This document and the applicable practices they prescribe are incorporated by reference and are part of Standard Operating Procedures on the Klamath NF portions of expansion activities.

Introduction
The following Mitigation Measures are a requirement of the decision under the ROD and are designed to reduce surface erosion, sedimentation rates, and the risk for landslides, protect water quality, and maintain or enhance site/soil productivity.

Revegetation is one of the primary goals in minimizing erosion of disturbed sites. The subalpine environment at Mt. Ashland requires diligent care and attention for successful revegetation. It should be recognized that vegetation does not currently cover all of the ground surface, even where undisturbed. Within the SUP area, not all revegetation efforts will be immediately successful and 100% vegetation cover is not expected.

It is expected that soils will be stabilized that are prone to erosion or frost processes, to assist vegetation in gaining a foothold for vigorous growth. A number of erosion control measures are used to stabilize disturbed sites so that revegetation can have a greater likelihood of success. However, some erosion control methods such as rock blankets and rock-lined drain dips, and chipping and slash placement provide immediate protection without reliance on establishment of new vegetation.

Erosion Mitigation Measures are designed to perform a variety of tasks. One technique is to prevent the disturbed site from being exposed to the weathering and erosive forces of water and ice. Short-term stockpiling of topsoil and later re-placement over areas where topsoil has been removed is a mitigation that can accelerate site recovery. This can be further enhanced with the use of stabilizing erosion mulches or fabrics.

These methods include the use of geotextile fabric in concert with rock blanketing or armoring of exposed slopes to prevent the direct erosive forces of running water from dislodging and carrying soil particles off site. Permanent and temporary styles of erosion control blankets work in a similar fashion. The blankets are manufactured with straw, coconut fibers, or synthetic fibers. Designing with erosion control blankets incorporates revegetation into the performance of the materials.

Other erosion control methods focus on slowing the velocity of runoff to prevent it from picking up soil particles and/or to cause the water to drop its sediment load. These include techniques such as water bars, drain dips, silt fences, straw bales, herringbone placement of logs on the ground, mulches, and lop-and-scatter treatments composed of slash generated during tree clearing. Some temporary erosion control measures are designed to function in or adjacent to a waterway to filter out or trap sediment. These include products such as silt fences placed down slope of the disturbance site, and sediment trap blankets that can be placed into the stream.

Proper construction methods are effective in providing for stability and erosion resistance to earthwork. Compaction of soil and rock associated with cut and fill slope construction performs a number of functions. Well compacted fills have higher stability and strength, lower water transmission, and higher resistance to erosion and frost effects. Coordination and inspection by Forest Service specialists experienced with construction practices provides additional control of construction activities, and is effective in minimizing adverse environmental effects.

Optional methods of timber removal such as "over snow" clearing could occur, if authorized by the Forest Service, and if resource protection objectives are met (including protection of nesting wildlife species). Other methodology (e.g., use of low ground pressure tree shears to fall and bunch timber for helicopter turns) similarly could be authorized if resource protection objectives can be met.

Prior to Site Disturbance:
Erosion control plans, in concert with revegetation plans, and required permits will be submitted by MASA for Forest Service review and approval. Construction contract drawings, specifications and clauses will provide details of how, when and where Mitigation Measures are to be installed and maintained. Quality assurance plans will be required to ensure compliance with approved plans. Construction supervision by the contractor, with Forest Service inspections will be required. Sites with planned disturbances will be located on the ground, with the clearing and/or construction limits marked. Any required filtering mitigation such as silt fences, wattles, or straw bale systems will be installed prior to clearing. Develop revegetation plans that include production of native seed and seedlings to be available for construction.

During Construction:
Utilize on-site logs and slash, where appropriate, for filter material, soil cover, water bars. Minimize clearing and soil disturbance. Provide for proper drainage to prevent ponding or concentrated overland storm flow over unprotected exposed soil slope. Monitor the local weather forecast for predicted storm events. Wherever practical, place temporary or permanent soil cover as construction proceeds. Install prescribed revegetation and erosion control measures.

After Construction:
Monitor the installations. Foster natural and cultivated revegetation of disturbed soils. Prior to the onset of fall rains, perform a site review to inventory and attend to any locations in need of additional erosion control efforts. During the spring melt, inspect the locations of concentrated runoff and assess the performance of erosion control installations. Provide for maintenance of existing installations. At sites where the prescribed erosion control measures are shown to be less effective than anticipated, install and maintain additional erosion control materials appropriate for the site conditions. Implement revegetation plan.

Specific Mitigation Measures
The following identifies more specific erosion control (EC) requirements for ski area construction activities that are authorized and required by the Forest Service ROD:

(EC-1) Construction/reconstruction of road segments, Runs 8, 12, 18, and Sonnet re-contouring, parking lots, and buildings will occur during dry weather conditions. (**E3, F3**)

(EC-2) Operations may occur outside of dry weather conditions, however, certain requirements must be met in order to have operations proceed during periods of wet weather. Compliance with Best Management Practices (BMPs) by MAA is necessary to meet water quality requirements, as agreed to between the State of Oregon and the Forest Service.

The following specific criteria are provided as standards for operating during wet weather conditions (**E3, F3)**:

- Operations will be diligently monitored by MAA and the Forest Service to detect changes that can occur during wet weather conditions. If detrimental effects to the transportation system, water quality, or soil resources are encountered by either party, immediate notification of designated personnel by either MAA, or the Forest Service will occur. The Forest Service will work together with MAA to select or develop actions to be implemented by MAA necessary to alleviate these effects.

- BMP guidelines dictate that no contaminant will flow into any stream courses from any facility used by MAA. Monitoring will occur.

- Mitigation measures (BMPs) will be implemented to prevent accelerated sedimentation to streams.

- On maintenance roads, snow will be removed without disturbing the road surface, cut bank, fill slope, or drainage structures. No soil should be intermixed with the side cast snow during plowing; at least 2 inches of snow will remain on the road surface after snow plowing.

- Frozen roads may be used if they support the weight of vehicles to be driven on it. If any part of the active road or work area thaws and mitigation such as rocking cannot be implemented to ensure protection of water quality, the road will not be used.

- After a precipitation event or at the beginning of operations following the wet season, it will be necessary to determine when conditions are dry enough for construction activities to resume. Local variations in soil type, hydro-geomorphology, and road composition will result in certain areas or road segments drying sooner than others. Therefore, discretion is required and universal determinations can rarely be made. In general, if the roadway or work area can support vehicles without causing rutting, soil displacement, damage to drainage structures, and with no sediment delivery to streams, it can be used.

(**EC-3**) Required road work will be accomplished by October 15 or prior to the onset of the wet season as determined by a Forest Service Hydrologist, Geologist, or Soil Scientist (**E2, F3**):

- Drainage structures and erosion/sediment prevention structures will be in place and functioning.

- Roads will be properly graded and ditched or out-sloped; saturated roads will not be graded.

(**EC-4**) Utilize low effect techniques to perform ground-disturbing activities. Use hand-operated equipment when feasible. Use helicopters to remove large trees that will not be used for mitigation needs. (**E3, F3**)

(EC-5) Road crossings and existing 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 occur in an area that minimizes disturbance to the stream bed and banks. A temporary platform will be created to cross the channel, if necessary. The Forest Service will approve all stream crossing locations and proposed methods of crossing, prior to construction, and monitor. (**E2, F2)**

(EC-6) An Erosion Control Plan will be implemented as part of the construction documents. The plan will provide site-specific guidelines for erosion control, monitoring and an implementation schedule of approved projects. The plan will be reviewed and approved by the Forest Service. A maximum area of disturbance (that is, area of exposed and potentially erodible soil) will be established for any one operating season. Evidence of successful revegetation and/or other erosion control methods will be reviewed by the Forest Service prior to approval of additional ground-disturbing activities. (**E3, F3)**

(EC-7) The decision under the ROD will require an approved Stormwater Management Plan. His plan will maintain or improve water quality, sediment retention, and in-stream flows relative to the existing condition. Concentrations of Total Suspended Solids (TSS) and petroleum hydrocarbons will be maintained or reduced, and sediment trap efficiency will be maintained or increased. Facilities will be designed to reduce instantaneous peak flows discharged from parking lots. This plan will be finalized prior to and at the time of actual implementation. **(E3, F3)**

Ski Runs and Lifts

Numerous alternatives to ski run locations have been assessed in the field and on planning maps to avoid ground disturbance, particularly adjacent to wetlands and waterways. The majority of ski runs have been located on stable ridges and spurs. Where slope stability was considered a potential hazard, detailed computer analysis was performed to model current and expected future conditions.

Where runs cross wetlands or meadows, they do so for short distances. Ski runs will be cleared of trees and high brush only, while maintaining the greatest possible amount of ground vegetation in an undisturbed state. Tree stumps will be left at a height that is adequate to retain logs left on the slopes. Logs left on the slopes are intended to retard soil movement and to break up possible runoff. Tree tops and limbs will be scattered over the ground for erosion control. Where concentrations of slash are excess to erosion control needs, localized hand piling and burning of slash may occur (see Section G, 8, FEIS Chapter II for specifications).

Where cut and fill excavation occurs (surface lifts and some of the runs) additional erosion control measures are required. They may include the use of rock blankets, drain dips, revegetation, logging slash placement, contouring of logs at the toe of fill slopes, chipping, and erosion control blankets. Specific Mitigation Measures for ski runs and lifts (R&L) are as follows:

(R&L-1) A Forest Service Hydrologist and/or Geologist will provide oversight for the placement of logs and implementation of Mitigation Measures. (**E3, F3**)

(R&L-2) Logs, limbs, and stumps will be left on site for erosion control along steep slopes (50 to 65%) of Runs 10, and 15. Trees with diameters of approximately 12 to 15 inches and smaller, will be anchored behind the stumps, dug at least four inches into the soils, and placed perpendicular to slopes to catch any sediment moving down slope. Limbs and logs, eight inches in diameter or smaller, will be utilized and placed perpendicular and/or herringbone along steep slopes. Stumps will be left at least 10 inches above the ground surface to retain trees placed behind them and sediment that may be transported on slopes above. (**E3, F3**)

(R&L-4) Keep all mechanized equipment out of wet areas and wetlands, except in designated work areas (such as Run 12 creek crossing). (**E2, F3**)

Run 18 (Skiway)
In addition to the use of erosion control methods described for ski runs, additional efforts are anticipated for Run 18.

(R&L-5) The crossing of Pumphouse Creek will consist of stable, coarse rock that is not subject to erosion. To prevent runoff from traveling for any great distance along the Skiway Run, the run will be out sloped 5-10% to shed the water quickly. Drain dips will be placed at frequent locations to divert runoff from the run. These dips will be reinforced with coarse rock along the base of the dips and on the fill slopes below the dip outlets. Seeding and mulching may be required to accelerate revegetation of the disturbed slopes. Frequent monitoring and maintenance will occur to ensure that the anticipated level of erosion control is being achieved. (**E3, F2**)

(R&L-6) Dips will be located to prevent directing water from the Run 18 into landslide Hazard Zones 1 and 2, and areas of existing surface erosion below or along Run 18. (**E3, F3**)

Lift Terminals and Towers
All cut and fill slopes at the terminals will be required to have permanent erosion control measures such as rock blanketing, chipping, or other approved methods. Revegetation and erosion protection for other disturbed slopes will be implemented. Experience with the installation of the lower terminal for Comer Chairlift (located within 100 feet of the East Fork of the East Fork of Ashland Creek) revealed that such Mitigation Measures were very effective in minimizing sediment delivery to the surface waters.

(R&L-7) At the lower LC-6 terminal, additional erosion control methods during construction will be required. These may include installation of silt fences and/or straw bales between the construction limits and the stream banks, installation of near stream and/or in-stream sediment traps, and increased quality assurance inspection of construction. Long term erosion control methods such as the use of logs and clearing slash, revegetation, geotextiles, rock blanketing of cut and fill slopes, and permanent erosion control blankets will be required. (**E3, F3**)

(R&L-8) To reduce the potential for sediment delivery to streams, lift towers will be located to maximize their distance from active stream systems. To minimize ground disturbance and vegetation removal, construction materials will be brought in by helicopter. The excavated materials from the tower footings will be smoothed and graded by hand tools followed by revegetation and other erosion control methods, such as covering disturbed soils with rock blankets, geotextile material, and logging slash. To prevent off-site movement of soils from a possible tower located near the 6,700 foot elevation, removal of the excavated material by helicopter may be required. (**E3, F2**)

Lower Wetlands Ski Run and Bridge Crossing
A variety of ski run locations and wetland crossing alternatives were analyzed. A team of engineers and earth scientists were contracted by MAA to delineate the wetlands, identify potential effects and propose alternatives for crossing the lowermost wetlands and the Middle Fork of the East Fork of Ashland Creek. The selected design has the ski runs skirting the western edge of the wetlands and crossing the creek with a single bridge. As a result, the run crosses the creek where it is within well-defined banks. Potential effects and crossing distances to the wetland have been reduced by this layout. The design and mitigation efforts are anticipated to greatly reduce the potential for sedimentation to East Fork of Ashland Creek.

(R&L-9) As with the construction of the lower terminal, silt fencing and straw bales will be required between the excavation for bridge footings and the creek. A construction platform built from felled logs may be used to the extent operationally feasible to support the excavator and minimize effects to the soils. (**E3, F2**)

(R&L-10) A Forest Service Hydrologist or Geologist will provide oversight of construction and mitigation of the wetland crossing to ensure maximum protection of the wetland. Construction quality assurance inspection and supervision will also occur to ensure work is carried out as directed. Following construction, all disturbed ground will be revegetated and appropriate long-term erosion control methods will be in place. Monitoring of erosion control mitigation will occur to ensure it been implemented effectively. (**E3, F3**)

(R&L-11) For the Run 12 crossing over the unnamed tributary of the East Fork of Ashland Creek, the use of mechanized equipment (i.e., snow groomers and snowmobiles) will not be allowed prior to accumulation of at least 24 inches of snow within the stream crossing, either through natural accumulation or snow grooming techniques.

(R&L-12) Utilize a low ground pressure excavator, schedule the timber felling, limbing and bucking to occur in late winter or early spring, when the snowpack depth is receding. Monitoring of the snow depth and density will ensure that foot traffic and felling is completed with a two-foot (24 inches) minimum snow depth. (**E3, F2**)

Maintenance Roads

Soil stabilization may be appropriate along some of the steeper pitches of the maintenance roads. As with other highly disturbed sites, frequent monitoring and ongoing road maintenance will occur to sustain effective erosion control and minimize sediment delivery potential to surface waters.

Mitigation Measures are necessary to reduce the amount of potential surface erosion and sediment transport from new segments of the maintenance roads. Some or all of these mitigations may also be applied to existing segments of maintenance roads as determined to be necessary by a Forest Service Hydrologist, Geologist, or Soil Scientist. Specific Mitigation Measures for maintenance roads (MR) are as follows:

(MR-1) Drain dips will be spaced at distances necessary to divert surface water from the road without causing surface erosion within or below the road. (**E3, F3**)

(MR-2) Out-slope the road prism 2 to 4% to disperse surface water as much as possible between the drain dips. (**E3, F3**)

(MR-3) Plant native grass seed (or non-native seed approved by the Forest Botanist), brush species, and mulch along road fill slopes (in areas where rock is not utilized to stabilize the slope), in accordance with revegetation plans. **(E3, F3)**

(MR-4) Place riprap (coarse rock material), LWD and/or geotextile blankets over fill slopes as needed, and at drain dips and their outlets. (**E3, F3**)

Parking Lot Expansion
Reinforced fill construction methods have non-erodible slopes engineered into their designs and will be constructed in a manner to ensure long-term stability of the structures. Oversight by a Forest Service Geotechnical Engineer will be required for plan review, approval, and construction supervision and inspection to ensure long-term stability of the fill slope structures. Disturbed soil slopes will be stabilized with temporary and permanent erosion control methods and revegetated. Specific Mitigation Measures for parking lot expansion (PK) are as follows:

(PK-1) To prevent sediment from leaving construction boundaries, silt fencing, certified weed-free straw bales, or other mitigation approved for holding soils on site will be installed. (**E3, F2**)

(PK-2) During periods of construction, potential storm water will not be allowed to concentrate on freshly exposed soils or unprotected fill slopes. (**E3, F2**)

(PK-3) Vegetative plantings will be incorporated into the design of the retaining structures in the fill slopes of the parking lot(s), where it is feasible and appropriate. (**E3, F3**)

(PK-4) Avoid concentrating surface water from the parking lots, except where designed to resist/handle extra forces from higher flows. (**E3, F3**)

(PK-5) Install storm water detention structures to reduce peak flows from parking lots that discharge into drainage channels. **(E2, F2)**

Moraine Lodge and/or Toilet and Ski Patrol Facilities
The location of these skier services facilities on slopes of approximately 35 percent or less, and the large distance (about 1,000 feet) from surface water, provides inherent mitigation for reducing the potential for sediment delivery to streams. Specific Mitigation Measures for these and other facilities (FAC) are as follows:

(FAC-1) All disturbed slopes will require stabilization and revegetation. Fill slopes will be protected with native rock or other suitable permanent erosion control methods (**E3, F3**)

Underground Water Storage Tank
The location and design of the underground water storage tank in a previously excavated area, excavation in rock material (less erosive), the small area excavated, and the distance from surface water (about 500 feet), inherently mitigates the potential for sediment delivery to streams. Rock excavated can be utilized for erosion control measures here, or at other disturbed sites.

(FAC-3) Erosion control during construction, and revegetation and erosion control following construction of the underground water storage tank will be implemented. (**E3, F3**)

C. Avalanche and Natural Hazards

Since 1963, the Mt. Ashland Ski Patrol has demonstrated a high level of expertise in (a) preventing and controlling avalanches and (b) recognizing and controlling natural hazards. That experience, combined with Forest Service expertise, is expected to continue. The following avalanche and natural hazard (AH) Mitigation Measures are applicable to the decision under the ROD:

(AH-1) Provide adequate avalanche protection and control according to an operation plan to be reviewed annually by the District Ranger. (**E3, F3**)

(AH-2) As part of the annual operation plan, develop a plan for skier management in the East Fork basin between LC-6, and the ski runs located to the west. (**E3, F3**)

(AH-3) Locate lift terminals, utilities, and facilities outside of avalanche hazard zones to the extent possible. (**E3, F2**)

(AH-4) Store explosives in a location not readily accessible to the public, and in accordance with Federal regulations. (**E3, F3**)

(AH-5) Utilize avalanche diversion techniques as appropriate for the possible runout zone near the Moraine Lodge or Moraine Toilets. (**E2, F2**)

D. Engelmann Spruce - Stand Health

An important objective for the Engelmann spruce stand in the Middle Fork area is to avoid exacerbating insect and disease effects. Although *Heterobasidion annosum* (cause of *annosus* root disease) was not detected during surveys of the Mt. Ashland spruce stand, it is one of the most common root diseases of spruce in the Cascades. Since it can be spread over long distances via windborne spores that infect through freshly-cut stumps, stump treatment is good insurance. The following spruce (SP) Mitigation Measures apply to this objective:

(SP-1) If trees are cut in or at the edge of the spruce stand, treat stumps over 14 inches in diameter with Sporax® within 48 hours of cutting[1]**.** Treat stumps of true firs as well as Engelmann spruce. Sporax treatment will prevent infection of cut stumps by *Heterobasidion annosum* (cause of *annosus* root disease). Sporax will not be used in or adjacent to streams or areas of surface water. **(E3, F3)**

(SP-2) Remove all spruce logs greater than 12 inches DBH that are felled during ski area development from the site within one year of cutting, to prevent infestation and population build-up of spruce beetle. **(E3, F3)**

E. Botanical Resources

Specific Mitigation Measures applicable to vegetation or botanical (BOT) resources are as follows:

(BOT-1) Seed and nursery stock used for revegetation will be local stocks of native species. Non-local stocks of native plants materials available on the commercial market will not be used. Suitable non-invasive non-native plant materials will be designated by the Forest Service when local stocks of native species are not available, are impractical, or are not performing well. (**E3, F2**)

(BOT-2) Partially as mitigation and partially as a management experiment, MAA will collect seed cones, grow seeds and plant seedlings and/or transplant Engelmann spruce. Revegetate on suitable sites unaffected by expansion activities and monitor. (**E2, F2**)

(BOT-3) Partially as mitigation and partially as a management experiment, MAA will collect seeds, grow seed and plant seedlings and/or transplant Mt. Ashland Lupine and Henderson's horkelia. Revegetate on suitable sites unaffected by expansion activities and monitor. This may also be viewed as insurance for population viability. (**E2, F2**)

[1] Sporax® (sodium tetraborate decahydrate) is a contact preventative fungicide used to limit the spread of *Heterobasidion annosum*, the cause of annosus root disease by prohibiting germination and infection by spores. Sporax application will be done according to label directions and will not take place in areas of running water.

(BOT-4) For any authorized construction, equipment, vehicles, and staging/gathering areas will be prohibited in the large meadow adjacent to the Engelmann spruce grove when the ground is not snow covered (to maintain the native meadow plant community). Non-native seed will not be used within or adjacent to this meadow. (**E3, F3**).

(BOT-5) Ground disturbance will be minimized in the meadow in the upper half of proposed Run 12 (to maintain the existing plant species composition). Non-native seed will not be used in this meadow. (**E3, F3**)

(BOT-6) Disturbance in the spruce wetland area will be confined to the ski run corridor and lift line corridor. (**E3, F3**)

(BOT-7) Extend roped boundary down the West Ridge and prohibit alpine skiers (those who have purchased a lift ticket) from crossing the ski area boundary, to minimize possible effects on the Mt. Ashland lupine population. (**E2, F3**)

(BOT-8) In concert with the Conservation Agreement, to minimize effects of summer recreation activities on the Mt. Ashland lupine and Henderson's horkelia habitat, install and/or maintain barriers (logs, posts, rocks, dirt berms, etc.) or other devices that control and direct vehicle, bicycle, and pedestrian traffic near Rabbit Ears rock outcrop and at the summit of Mt. Ashland. Use educational signs to foster awareness of the rare plant protection effort. (**E2, F3**)

(BOT-9) Snow fences at the summit and West Ridge will be limited in number, placement, size and/or design so that no substantial acreage of the Mt. Ashland lupine population south of the West Ridge ski run will experience increased snow deposition (above natural snow deposition). (**E2, F2**)

(BOT-11) If monitoring shows a need, markers and rope will be used to mark and protect the two north side whitebark pines from damage by skiers and snow groomers. (**E2, F3**)

(BOT-12) There is an opportunity to enhance the viability of the whitebark pine population on Mt. Ashland by collecting seeds from the three Mt. Ashland trees and propagating seedlings from them, to be planted elsewhere on the mountain, away from existing and proposed developments. (**E2, F3**)

(BOT-13) During construction of buildings, lifts, and ski runs in the vicinity of the whitebark pines, the two north side trees will be identified and protected to avoid damage. (**E2, F3**)

(BOT-14) During construction in and around the moraine at the base of the Bowl, the small population of Henderson's horkelia will be identified and protected to avoid damage. Additional mitigation will include fencing off the population and notification of construction workers and ski area personnel that the area must be avoided. (**E2, F3**)

F. Invasive Non-native Plants

Specific Mitigation Measures for control of invasive non-native plants (noxious weeds [NW]) are as follows:

(NW-1) To prevent the introduction of noxious weeds and other non-native plants, earth-moving equipment will be cleaned of dirt, mud, and plant parts before arriving to the project area. (**E3, F2**)

(NW-2) Any new ski runs and lift corridors authorized for construction will be surveyed for noxious weeds and other invasive non-native plants during the second summer or autumn after construction occurs. If noxious weeds are detected, appropriate action will be taken, in accordance with the RRNF Integrated Noxious Weed Plan (for the RRNF and KNF). (**E3, F3)**

(NW-3) All activities will comply with the Best Management Practices for Noxious Weed Prevention and Management, Port-Orford-cedar Root Disease Prevention and Management, Sudden Oak Death Prevention and Management – Interim Direction for the Rogue River and Siskiyou National Forests, February 15, 2002. **(E3, F3)**

This Final EIS document incorporates by reference the Region 6 FEIS for Managing Competing and Unwanted Vegetation (December 1988b), its Record of Decision and the terms of a Mediated Agreement (March 1989), which provides the basis for the *Rogue River National Forest's Integrated Noxious Weed Management* EA (1999d).

This attachment also incorporates by reference the Decision Notice signed by J. Michael Lunn, Forest Supervisor, on September 1, 1999 for the Environmental Assessment for Integrated Noxious Weed Management Plan (Weed Plan) on the Rogue River National Forest. Under this decision, a list of all Forest infestations and locations are maintained in the Weed Plan.

(NW-4) Under the terms of the Weed Plan and the Special Use Permit, the ski area operator (MAA) is required to help prevent new infestations, limit the expansion of existing populations, and report new sites. **(E3, F3)**

G. Wildlife

Specific Mitigation Measures for terrestrial wildlife (WL) are as follows:

Mitigation Measures to protect <u>northern spotted owl pair activity centers</u> (PACs):

Any of the following mandatory Mitigation Measures may be waived in a particular year if nesting or reproductive success surveys conducted according to US FWS-endorsed survey guidelines reveal that spotted owls are non-nesting or that no young are present that year. Waivers are valid only until March 1 of the following year. With previously known sites, activity centers are assumed occupied unless protocol surveys indicate otherwise.

(WL-1) Work activities (such as tree felling, yarding. road construction, hauling on roads not generally used by the public, blasting) that produce loud noises above ambient levels, will not occur within specified distances (see Table ROD B-1 below) of any nest site or activity center of known pairs and resident singles between 1 March and 30 June (or until two weeks after the fledging period) - unless protocol surveys have determined the activity center to be not occupied, non-nesting, or failed in their nesting attempt. **(E3, F3)**

March 1 - June 30 is considered the critical early nesting period. A Forest Service Biologist has the option to extend the restricted season to as late as 30 September during the year of activity, based on site-specific knowledge (such as a late or recycle nesting attempt). The restricted area is calculated as a radius from the assumed nest site (point).

Table ROD B-1. Northern Spotted Owl Restrictions

Type of Activity	Zone of Restricted Operation
Blast of more than 2 pounds of explosive	I mile
Blast of 2 pounds or less of explosive	120 yards
Impact pile driver, jackhammer or rock drill	60 yards
Helicopter or single-engine airplane	120 yards
Chainsaws (vegetation clearing, tree felling, etc.)	65 yards
Heavy equipment	35 yards

Mitigation Measures to minimize effects to goshawks:

(WL-3) If a goshawk nest site is detected within the SUP area, a Forest Service Wildlife Biologist will determine nesting status (presence or absence of young). If young are determined to be present, activities will be restricted within 0.25 mile of the nest site until August 31 or a Forest Service Wildlife Biologist determines young to be successfully fledged from the nest. (**E3, F3**)

Mitigation Measures to minimize effects to great gray owls:

(WL-4) If a great gray nest is discovered during project implementation activities, protect nest site with a 0.25 mile no activity buffer around the nest site and a 300 foot no activity buffer around natural meadows and openings. (**E3, F3**)

Mitigation Measures to minimize effects to bat species:

(WL-5) Retain all standing hard snags that are not immediate hazards to human safety in the vicinity of the ridge associated with Run 12. (**E3, F3**)

(WL-6) Although not a Northwest Forest Plan requirement, there is an **opportunity** to protect snags and large trees that may be used as maternity sites by restricting tree removal activities on Run 12 (if authorized) from December 1 to July 30. This would allow time for young bats to begin to fly and leave the maternity roost, based on Forest Service Wildlife Biologist determination of actual trees or snags used by bats. (**E3, F2**)

Mitigation to minimize effects to arctic blue butterflies:

(WL-7) To minimize effects to important meadow resources including the arctic blue butterfly, no ground disturbance is planned within the wet portion of the Upper Meadow associated with proposed Runs 12 and 13. A designated route and stream crossing will be established by a Forest Service hydrologist, in coordination with other Forest Service resource specialists. This will provide protection for the only known host plant of arctic blue butterflies, the shooting star of the genus *Dodecatheon (*E3, F3), to minimize effects to important meadow resources, including the arctic blue butterfly. (**E3, F3**)

Mitigation to minimize effects to neotropical migratory birds:

(WL-8) If operations are planned to occur between December 1 to July 30 in the alder glade crossing associated with Run 11, a Forest Service Wildlife Biologist will determine presence of nesting neotropical migratory birds in the alder glade. If nesting birds are found, a Forest Service Wildlife Biologist will provide recommendations based on species present and proximity to planned activities. (**E3, F3**)

Mitigation for down woody material habitat:

(WL-9) For wildlife habitat, directionally fall and leave large woody material (logs greater than 24 inches DBH) landing outside and adjacent to cleared areas. Material to be removed can be cut into logical log lengths. (**E3, F3**)

H. Scenic Quality

The scenic quality (SC) Mitigation Measures will be done to the maximum extent feasible, with the precise actual extent of application of the measure being unknown prior to final design and implementation.

Mitigation to minimize scenic effects from Ski Runs:

(SC-1) Minimize overall clearing widths for ski runs whenever possible, and not exceeding proposed design. (**E3, F3**)

(SC-2) Use undulation techniques (selective removal to allow for irregular or clumping of trees) within and along edges of ski runs. (**E3, F3**)

(SC-3) Revegetate cleared and soil disturbed areas as soon as possible to reduce erosion and contrast. (**E3, F3**)

(SC-4) As discussed under Tubing Area section below, use "warm" color/shades of lighting. Make use of latest available lighting technology to minimize lighting effects. **(E3, F3)**

Mitigation to minimize scenic effects to the South Ridge Tubing Facility:

(SC-5) Retain screening provided by existing trees along Crest (Access) Road. Gradually feather the edges of the opening approximately 75 feet beyond the opening, to minimize wind throw of trees on this ridgeline location (retain open grown trees with greatest root structure, least wind mass, etc.). The surface lift towers should be lower than the skyline of trees. (**E3, F3**)

(SC-6) Coloration of tower structures should be dark gray, green or brown. Locate lighting on the east side of the snowplay opening instead of the west, to better direct the light generally westward away from potential I-5 viewpoints. "Warm" colors/shades of light are less obtrusive in the night sky, identify latest available technology for both aesthetics and energy savings, for use throughout the snowplay area. (**E3, F3**)

Mitigation to minimize scenic effects from Parking Expansion:

(SC-7) Minimize the extent of clearing and construction for parking as much as possible. (**E3, F3**)

(SC-8) Reinforced fill slopes will be seeded after construction for establishment of native grasses, forbs, and shrubs necessary to reduce the contrast with the surrounding slopes. The location, distribution, and timing of plantings should be done under the guidance of a Forest Landscape Architect. Fill slopes will be seeded and irrigated as necessary to establish grass coverage within three years of construction completion. (**E2, F2**)

(SC-9) Plant indigenous trees and shrubs below the toe of new fill slopes for screening and additional slope stabilization. Location and extent of planting should be determined through the guidance of a Forest Landscape Architect. (**E2, F2**)

(SC-10) Fresh cut slopes created at the "bottleneck" portion of the Crest Road will be mulched and revegetated with native grasses and shrubs unless rock content is too high for plant survival. Location and extent of planting should be determined in consultation with a Forest Landscape Architect. Reduce unnatural contrasts on new cut slopes by irregular texture reflecting rock strata; consider permanent weathering agent dyes to better match weathered rock surfaces in the area. Grass establishment should be achieved within three years after construction activities are completed. (**E2, F2**)

(SC-11) Revegetate selected portions of the existing cut slopes above the main parking area (adjacent to current maintenance buildings). These slopes contain more surface soil than neighboring slopes and have a better chance of establishing native plant species. These slopes are presently the greatest contrast in views along the Crest Road and from the California viewshed. Revegetation should be done in consultation with a Forest Landscape Architect and be completed within the same timeframe as the seeding of new fill slopes. (**E2, F2**)

(SC-12) Protect existing and residual trees, rock outcrops and other natural features from damage during construction activities. (**E3, F3**)

Mitigation to minimize scenic effects from <u>Structures and Buildings:</u>

(SC-13) Consistently apply (across all structures and signs) the principles of aesthetic compatibility with the setting (architectural character, "natural" colors, shapes, materials, consistent with "Cascadian" themes of the North Pacific Province (see *The Built Environment Image Guide*, USDA FS-710, December 2001), also consider long term cost effectiveness and energy efficiency. (**E3, F3**)

(SC-14) Design Moraine Lodge and other facility expansion/construction to incorporate, as much as possible, native materials. The color, form, and texture of the facades of these structures should borrow from valued attributes of the surrounding landscape. (**E3, F3**)

(SC-15) Use non-reflective materials for roof and facades of structures. Use non-reflective paint on new ski lift towers to minimize reflectivity. Paint new (and existing) structures with earth tone colors that borrow from the surrounding landscape. (**E3, F3**)

I. Cultural Resources

Specific Mitigation Measures for cultural (heritage) resources (CR) are as follows:

(CR-1) Continue ongoing survey by a certified Cultural Resource Technician within the "area of potential effect" before, during, and after project implementation. (**E3, F3**)

(CR-2) Notify Forest Archaeologist of any heritage resources discovered during project implementation. If a cultural resource is found, cease construction activities at that location until site evaluation and determination of effect have been completed. (**E3, F3**).

(CR-3) Encourage interpretive activities (brochures, signs, programs), through cost-share agreements that describe the human story at Mt. Ashland. (**E3, F3**)

(CR-4) Maintain strict confidentiality of the location of any identified heritage sites within project areas by designating them as "avoidance areas". No equipment transport, work-crew "lunch camps," or other activities will be permitted in avoidance areas. (**E2, F3**)

J. Air Quality

Specific Mitigation Measures for air quality (AQ) is as follows:

(AQ-1) Site improvements will be installed promptly in order to reduce the potential for dust emissions. The area disturbed by clearing, earth moving, or excavation activities will be kept to a minimum at all times, allowing improvements to be implemented in phases. (**E3, F2**)

(AQ-2) Limit the amount of slash that requires burning by using an excavator to crush and distribute slash across the width of the ski trails, chipping where access allows, and lopping and scattering of small woody material. (**E3, F2**)

(AQ-3) Investigate opportunities for combustion of any slash at regional biomass co-generation facilities. (**E3, F3**)

(AQ-4) Stage burn hand piles to reduce the volume of smoke being produced at one time. (**E3, F3**)

(AQ-5) Time burning to ensure that heavy fuels are as dry as possible. (**E3, F3**)

(AQ-6) Implement prescribed burning of slash piles during periods when the atmospheric conditions will transport smoke in a southerly direction away from the Medford Air Quality Management Area. (**E3, F3**)

(AQ-7) Apply water at helicopter landing areas to reduce dust formation caused by rotor wash. (**E3, F3**)

(AQ-8) Use "track out" control, a method to avoid mud being tracked out from construction areas onto roads where it dries and becomes airborne dust. This is generally accomplished by washing off vehicle tires before entering a paved road. (**E3, F3**)

(AQ-9) Require prompt revegetation of all disturbed areas to minimize dust and wind erosion. Erosion control and revegetation efforts will commence immediately following construction as per Forest Service BMPs and an approved Erosion Control Plan. (**E3, F3)**

(AQ-10) Use only dry, cured firewood in the Moraine Lodge, and/or other wood-burning sources. (**E3, F3**)

(AQ-11) Maintain emission control devices on all MAA vehicles. MAA is encouraged to continue and expand the past practice of subsidizing bus trips and employee van shuttles to MASA, which results in reduced vehicle emissions. (**E3, F3**)

K. Recreation

Specific Mitigation Measures for recreation at MASA (RecM) are as follows:

(RecM-1) Design, construct, maintain, operate, and inspect all ski lifts in accordance with American National Standard Safety Requirements for Passenger Ropeways--Aerial Tramways, Aerial Lifts, Surface Lifts, Tows, and Conveyors (ANSI B77.1) (**E3, F3**).

(RecM-2) Maintain area closure to mountain bikes, snowmobiles, and motorized vehicles. MAA will assist Forest Service in monitoring and enforcing these closures. (**E2, F2**).

(RecM-3) Provide full public access to hikers within the SUP area. MAA will assist Forest Service in monitoring use in sensitive wetland areas. (**E3, F2**)

(RecM-4) Enhance public understanding of the Siskiyou Crest environment through interpretation (signing, publications, and tours). Develop partnership with community interests to implement interpretive plan. (**E3, F3**)

(RecM-5) Maintain roped ski area boundary down the West Ridge to minimize possible conflicts with Nordic skiers. (**E3, F3**).

(RecM-6) Prohibit lift-served skiers from using the Summit spur of Grouse Gap Nordic Ski Trail (Road 300) on the southwest side of Mt. Ashland in order to minimize conflict with Nordic skiers. (**E2, F2**)

(RecM-7) Update ski area boundary management plan with participation of MAA, Forest Service, Southern Oregon Nordic Club, and other interested parties. (**E3, F2**)

(RecM-8) Narrow the south to southeast facing slopes of Run 14 to greatest extent possible to limit sun exposure on this run. (**E2, F3**)

(RecM-9) Develop safety plan for ski run junction near outlet from Bowl. This plan will be developed as part of the annual Area Safety and Operating. (**E3, F3**)

(RecM-10) Post temporary signage to warn recreation users of construction activities, and if necessary, alternative routes will be provided. (**E3, F3**)

L. Noise

The primary Mitigation Measure for noise (N) is as follows:

(N-1) Establish construction zones (including helicopter use), construction timing, and staging areas based on mitigation and management requirements established for the protection of wildlife species under the ESA, Northwest Forest Plan, or Rogue River and Klamath National Forest Plans. (**E3, F3**)

M. Transportation

The primary mitigation for transportation (TR) is as follows:

(TR-1) Provide incentives to carpooling and the use of public transit services by employees and guests (MAA responsibility). Example programs might include provisions for preferred parking for high occupancy vehicles, private coaches, and reduced lift ticket pricing. (**E3, F3**)

N. Safety

A summary of the specific mitigation for human safety (S) is as follows:

(S-1) Implement area closure in vicinity of helicopter operations but allow for public viewing areas where possible. Permit vehicle traffic to proceed through parking lot with minimal delay during helicopter operations. (**E3, F3**)

(S-2) Restrict hunting within the ski area boundary during summer and fall maintenance seasons. (**E3, F3**)

ATTACHMENT C

MONITORING PLAN

ATTACHMENT C

Mt. Ashland Ski Area Expansion

Monitoring Plan

August 2004
Ashland Ranger District
Rogue River-Siskiyou National Forest

Mt. Ashland Ski Area Expansion
Monitoring Plan

Table Of Contents

PREFACE

This Monitoring Plan has been prepared as an Attachment to the Record of Decision (ROD) and is intended to provide guidance for monitoring of effects that will demonstrate that resulting conditions associated with expansion of the MASA are consistent with the Rogue River National Forest Land and Resource Management Plan, as amended by the Northwest Forest Plan, and with the Klamath National Forest Land and Resource Management Plan.

This Monitoring Plan has been completely revised over the "Monitoring Plan Framework" included as Appendix M in the 2003 Draft EIS. Revisions are based on public comment on the Draft EIS and further development of a monitoring strategy and indicators to effectively monitor current and evolving conditions associated with the Record of Decision for ski area expansion at MASA.

Implementation and effectiveness monitoring and evaluation conducted in association with expansion activities provide opportunities for adapting management techniques as needed to be in compliance with or better meet the intent of the selected alternative as planned and approved in the ROD.

In some cases, minor modifications or changes to the monitoring methods may be necessary. This is the basis for Adaptive Management and the iterative nature of this Monitoring Plan. These types of corrections or adjustments will be implemented as needed, and communicated to the public. Changes to monitoring methods typically do not require authorization under NEPA, as they are primarily associated with data gathering.

Project monitoring could result in the need to propose changes to authorized project actions; these changes will be subject to the requirements of the NEPA and other laws concerning such changes. In determining whether and what kind of further NEPA action is required, the Responsible Official would consider the criteria in 40 CFR 1502.9(c) and Forest Service Handbook 1909.15, section 18, and in particular whether the proposed change is a substantial change to the selected alternative as planned and already approved, and whether the change is relevant to environmental concerns.

Monitoring will primarily be the responsibility of the Mt. Ashland Association (MAA) and coordinated with Forest Service resource specialists. A Forest Service Representative will inspect the operation as needed during operations. Inspections will be unannounced and randomly timed. A Forest Service Representative will visit the site during the first storms of the season to verify that erosion control methods are effective. Water quality monitoring is a requirement of the Oregon Department of Environmental Quality (ODEQ).

I. INTRODUCTION

Monitoring is the periodic measurement or observation of a condition, a process or an action. The process of closely linking planning with implementation of actions via monitoring is an important aspect of Adaptive Management.

Monitoring Categories

This Monitoring Plan establishes monitoring objectives and protocols, and organizes for evaluation the following types of monitoring:

Implementation monitoring is used to determine if features, facilities and practices as specified and authorized in the Record of Decision are being accomplished as planned, especially the use of Mitigation Measures. In other words "Did we do what we said we were going to do"?

Baseline Monitoring is designed to characterize the existing or previously existing condition for comparison with future or predicted conditions. In some cases this can refer to an initial inventory or set of measurements taken at the beginning of monitoring efforts. This type of monitoring is useful as a starting point or comparison for other types of monitoring and can provide a basis for trend detection.

Post-Project Condition Monitoring is used to determine if the existing conditions resulting from project implementation are, or have changed based on the design and execution of the selected expansion actions. Condition monitoring helps identify changes to allow determination of effectiveness of actions and Mitigation Measures.

Effectiveness Evaluation in this Monitoring Plan is the identification of change based on monitoring, to determine if expansion actions and Mitigation Measures were effective in achieving the stated function and estimated resource conditions. ***Evaluation*** is the analysis and interpretation of the information provided by monitoring. Evaluation is the feedback mechanism identifying whether there is a need to change how the project is being implemented to comply with existing direction or whether a need exists to change or adapt the project or action.

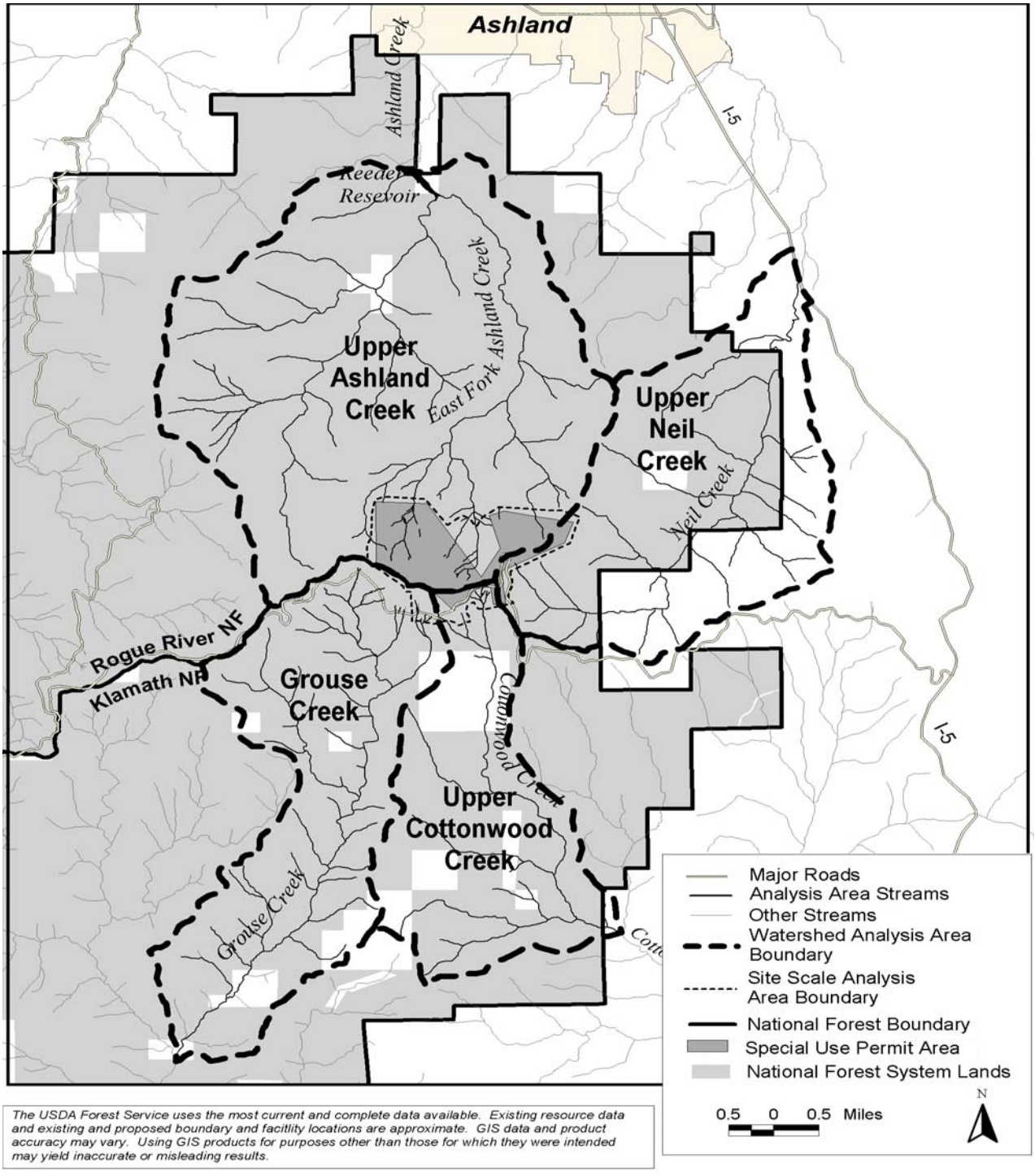
Scales

Monitoring at the Mt. Ashland Ski Area (MASA) will focus on three spatial scales: the Project Scale, the Site Scale, and the Watershed Scale.

The **Project Scale** includes and addresses specific components in a project context (i.e., where actions are occurring), based on the ski expansion decision as documented in the ROD. Monitoring at the Project Scale will focus primarily on implementation of selected ski area expansion actions and Mitigation Measures, and whether those actions and measures are being accomplished as planned.

Analysis in the FEIS also utilized the context of the **Site Scale Analysis Area**. The Site Scale Analysis Area (also described in FEIS Appendix E as the Streams and Wetlands Study Area) includes the entire MASA Special Use Permit (SUP) area and additional, adjacent area outside of the SUP area. This additional area is included to provide the basis of analysis and monitoring of watershed conditions that may be affected by expansion activities. The Site Scale Analysis Area is shown on Map ROD C-1, below.

MAP ROD C-1. Monitoring Scales - Analysis Areas



The **Site Scale Analysis Area** is approximately 1,469 acres in size and includes approximately 1,065 acres of the (Upper) Ashland Creek sub-watershed, which is a tributary to the 231,087 acre Bear Creek fifth-field watershed. Upper Neil Creek is also a tributary to Bear Creek with a small portion of the Upper Neil Creek sub-watershed (154 acres) located in the Site Scale Analysis Area as well. Also within the Site Scale Analysis Area is a portion (94 acres) of the Grouse Creek sub-watershed, a tributary to the larger Beaver Creek fifth-field watershed. The Site Scale Analysis Area also includes approximately 156 acres of the Upper Cottonwood Creek sub-watershed, tributary to the Cottonwood Creek fifth-field watershed, which includes a mix of interspersed private and Federally managed lands.

The **Watershed Scale Analysis Areas** include the identified portions of the Upper Ashland Creek watershed, the Upper Neil Creek watershed, the Grouse Creek watershed, and the Upper Cottonwood Creek watershed. The total area of these four sub-watersheds is approximately 30,738 acres. The Watershed Scale Analysis Areas is also shown on Map ROD C-1, above.

The goal of Watershed Scale monitoring is to provide a basis for evaluation of the cumulative effects of the proposed activities and all other actions within the watershed, and to determine whether Mitigation Measures are adequate to maintain watershed condition within the range of predicted conditions.

II. IMPLEMENTATION MONITORING

The primary purpose of implementation monitoring is to determine if a project or project actions have been implemented as planned. For this Monitoring Plan, monitoring asks if the proposed plans are being followed, with the focus on implementation of the required Mitigation Measures.

As defined in CEQ regulations (40 CFR 1508.20), "mitigation" includes avoiding effects, minimizing effects through design of an action, rectifying an effect through restoration, reducing the cumulative effect of the effect by preservation or maintenance operations for the duration of the action, and compensating for the effect by providing replacement or substitute resources. Thus, Mitigation Measures include all efforts undertaken to reduce effects, at phases from project design through to the end of a project's operational life.

A number of mitigating measures associated with expansion of Mt. Ashland Ski Area do not need monitoring because they have already been completed as a part of the design of project components. The FEIS describes examples of possible actions that were dropped from consideration or proposed actions that were substantially revised in order to avoid or minimize effects (see FEIS Appendix D).

Methods to accomplish monitoring of the employment of Mitigation Measures should include the following:

(1) confirm that the final project design specifications and plans include the appropriate measure;

(2) confirm that the measure is implemented by performing at least one site visit at an appropriate time during construction or implementation; and

(3) visit the site repeatedly to confirm that the measure is being implemented correctly (this would typically be necessary for complex, sustained projects or when correct implementation requires onsite supervision by a qualified individual).

The frequency and timing of visits depends upon the project; for example, a road construction project may need continuous monitoring during activities within or adjacent to stream crossings, but less frequent monitoring may be sufficient on upland slopes. Repeat visits are needed to confirm onsite effectiveness of the measure. This would typically involve quantitative measurements of resource condition (see next section).

The SUP includes all management direction and Mitigation Measures identified in the 1991 Master Plan, as well as permit clauses that govern the Forest Service/permittee relationship (i.e., the extent of commercial operations allowed, food and beverage services, facility maintenance, etc.). The Forest Service believes that MAA and their consultants are in the best position to determine where, for example, services are located. Exact locations and function of each building(s) will be determined at implementation. Final and exact facility, lift, ski run locations and other design features may be refined to a reasonable and logical extent during implementation (see Mitigation Measures, ROD Attachment B), not to exceed environmental consequences predicted in the FEIS.

An operating plan is required and is updated annually prior to operations, and the operating plan includes authorization and scheduling of development activities. The annual operating plan includes the Summer Work Plan, and describes how MAA will carry out construction and operations in accordance with the terms of the SUP and the Record of Decision. This operating plan will also be in accordance with the Mitigation Measures required by the ROD.

Actual construction will not occur until the Forest Supervisor or delegated Responsible Official approves the operating plan. Compliance with the operating plan will be monitored by the Ashland Ranger District staff and Forest Service resource specialists.

State and local agencies have regulatory responsibilities for many activities and actions being authorized; these will be finalized during the design, construction, and operation phases of actual expansion. Licensed professionals are required to prepare the construction drawings for facilities, utilities, structures, parking areas, etc. These proposals will then be reviewed by the appropriate state or local agency departments of environmental quality, planning, building, or health. Approval by these agencies is a condition of the SUP issued by the Forest Service.

Construction Project Monitoring

Monitoring for construction projects begins at the project planning and design phase, approximately 6 to 12 months before the project is scheduled to begin. The first step is to review construction plans and acquire the necessary environmental and building permits for the project, including the development of a Stormwater Pollution Control Plan (SWPCP) and acquisition of a National Pollution Discharge Elimination System (NPDES) permit, if necessary.

A number of Mitigation Measures are basically standard operating procedures that will be employed by the Forest Service and those implementing authorized actions, pursuant to Federal and State regulations, and Forest Service Manual direction. These procedures will apply irrespective of the element or aspect of ski area expansion. These standard operating procedures include:

- Prepare and submit a phased development plan (annual operating plan or Summer Work Plan) for Forest Service approval prior to implementation of any authorized expansion component project. This plan will detail specifically how and when development of authorized activities will occur. The Mitigation Measures (identified in the ROD) and listed herein are made a part of this plan. Implementation plans will be periodically updated to reflect changing conditions.
- Construction documents will be prepared and stamped by a professional engineer, as required by law or regulation, and approved by the Forest Service.
- For each project, an Implementation Plan will be prepared with a list of site specific Mitigation Measures (including those from this section and others as deemed appropriate). This plan will be approved by the Forest Service prior to implementation of any project. Construction will not begin until authorized by the Forest Service and approved by all applicable Federal, State and local agencies.
- Comply with all Terms and Conditions and standards for protection of Threatened, Endangered and Sensitive species, in compliance with the Endangered Species Act.

- Comply with all requirements and standards of the Clean Water Act. Comply with all requirements and standards of the Clean Air Act.
- Pursuant to the American Disabilities Act of 1991, design and construct new and remodeled facilities on NFSL to meet the needs of the disabled.
- Construct all structures to standards of the Uniform Building Code, National Plumbing Code, National Electric Code, and/or other recognized standards.
- Construct all ski lifts and associated infrastructure to American National Safety (ANSI) standards.
- Obtain all Federal, State, and local permits as required.
- Provide for public safety at all times.

Once the necessary permits and approvals are obtained and the documentation has been reviewed and approved by the Forest Service, construction can begin and monitoring will ensure that permit conditions and the construction plans are being followed properly. Erosion control and water quality monitoring will be performed according to the SWPCP during the active construction phase and will be discontinued once the construction is complete and the site has been declared stabilized by the Forest Service. Post-project monitoring will continue at the site. Monitoring efforts for all construction and restoration projects will be tracked and documented to ensure that all monitoring requirements, permit conditions, and Mitigation Measures are implemented in an organized and efficient fashion.

Table ROD C-1 identifies the Mitigation Measures specific to the Record of Decision and are organized by resource area. This is not intended to be a fixed list of Mitigation Measures; the list may be supplemented, as determined by the Forest Service and coordinated with MAA, to incorporate Mitigation Measures relevant to road maintenance, stormwater control, unforeseen new regulations, etc. The Mitigation Measures identified in ROD Attachment B will be included in construction plans and SWPCPs as appropriate. All Mitigation Measures will be approved by the Forest Service prior to authorization for construction.

Typically, mitigation for a project is achieved by first designing the project to avoid or minimize impacts[1], then modifying the design to incorporate specific Mitigation Measures, and finally by adding project-specific Mitigation Measures during project implementation.

The following table is designed as a tracking mechanism for required Mitigation Measures. Columns provide space for tracking the use of (employment of) measures by expansion component categories or component projects, dates, and remarks or comments. Reference to Mitigation Measures is the alphanumeric code for each measure, as identified in ROD Attachment B.

[1] Many potential effects have been eliminated or lessened through the design process (see Section D, 1 FEIS Chapter II).

Table ROD C-1. Mitigation Measure Tracking

Resource Area	Mitigation Measure Reference	Component Category and/or Component Where Employed	Verification Date(s)	Remarks
BMPs Timber	T-5 T-7 T-8 T-10 T-12 T-13 T-14 T-18 T-21			
BMPs Road Systems	R-1 R-2 R-3 R-5 R-9 R-18			
BMPs Watershed Management	W-1 W-3 W-4 W-6 W-7 W-9			
BMPs Recreation	REC-1 REC-2 REC-3 REC-5			
Erosion Control General	EC-1 EC-2 EC-3 EC-4 EC-5 EC-6 EC-7			
Erosion Control Runs and Lifts	R&L-1 R&L-2 R&L-4 R&L-5 R&L-6			
Erosion Control Lift Terminals and Towers	R&L-7 R&L-8			
Erosion Control Wetlands and Bridge Crossing	R&L-9 R&L-10 R&L-11 R&L-12			
Erosion Control Maintenance Roads	MR-1 MR-2 MR-3 MR-4			
Erosion Control Parking	PK-1 PK-2 PK-3 PK-4 PK-5			

Table ROD C-1. Mitigation Measure Tracking (continued)

Resource Area	Mitigation Measure Reference	Component Category and/or Component Where Employed	Verification Date(s)	Remarks
Erosion Control Facilities	FAC-1 FAC-3			
Avalanche and Natural Hazards	AH-1 AH-2 AH-3 AH-4 AH-5			
Englemann Spruce	SP-1 SP-2			
Botanical Resources	BOT-1 BOT-2 BOT-3 BOT-4 BOT-5 BOT-6 BOT-7 BOT-8 BOT-9 BOT-11 BOT-12 BOT-13 BOT-14			
Invasive Non-native Plants	NW-1 NW-2 NW-3 NW-4			
Wildlife	WL-1 WL-3 WL-4 WL-5 WL-6 WL-7 WL-8 WL-9			
Scenic Quality	SC-1 SC-2 SC-3 SC-4 SC-5 SC-6 SC-7 SC-8 SC-9 SC-10 SC-11 SC-12 SC-13 SC-14 SC-15			

Table ROD C-1. Mitigation Measure Tracking (continued)

Resource Area	Mitigation Measure Reference	Component Category and/or Component Where Employed	Verification Date(s)	Remarks
Cultural Resources	CR-1 CR-2 CR-3 CR-4			
Air Quality	AQ-1 AQ-2 AQ-3 AQ-4 AQ-5 AQ-6 AQ-7 AQ-8 AQ-9 AQ-10 AQ-11			
Recreation	RecM-1 RecM-2 RecM-3 RecM-4 RecM-5 RecM-6 RecM-7 RecM-8 RecM-9 RecM-10			
Noise	N-1			
Transportation	TR-1			
Safety	S-1 S-2			

Restoration Project Monitoring

Monitoring for restoration projects is similar to construction project monitoring. Even though the intent of restoration projects is to restore long-term ecosystem health, short-term detrimental effects may occur during project implementation. Therefore, monitoring is required during construction to reduce the likelihood for detrimental impacts and following construction to ensure than restoration goals are achieved.

Concurrent implementation of construction projects and restoration projects can minimize disturbance related to multiple entries into the watershed and can facilitate monitoring of cumulative impacts. Coordination of construction and restoration projects will be accomplished in order to reduce environmental effects and eliminate redundant monitoring efforts.

The appropriate Mitigation Measures will be identified for each restoration project and implemented according to the conditions of the project specific SWPCP. Project-specific Mitigation Measures will be identified during detailed project design, and would be designated during coordination meetings between MAA and involved regulatory agencies, including (but not limited to) Forest Service, the Army Corps of Engineers (for projects affecting wetlands), and U.S. Environmental Protection Agency (for projects affecting water quality).

III. BASELINE AND POST PROJECT CONDITION MONITORING

Existing Data

Some baseline data is currently available, some is being collected, and other data will be collected prior to project implementation to characterize the existing conditions specifically for comparison to post project conditions and will provide a basis for project condition monitoring. Most of this data is located at the Ashland Ranger District in various hard copy and electronic files. Other data exists on EPA, USGS, and NRCS websites. Daily snowfall and air temperature during the winter operating season is held by MAA.

Rainfall: Limited rainfall data is available from three gauges installed in the Ashland Watershed in the early 1970s. These gages were installed at low, mid, and high elevations. The high elevation gage is located at the Mt. Ashland Switchback snow course within the SUP. MASA personnel have been recording summer rainfall amounts within the ski area since the summer of 2001. Daily precipitation has been recorded at the Big Red Mountain Snotel site since October 1981. This site is located 7.5 miles west of Mt. Ashland at 6,250 feet.

Snowfall: As described in the 2004 FEIS, there is an abundance of data relative to snowfall. Two NRCS snow survey sites are located within the SUP. Another is located within one mile of the SUP. A fourth site is located near Siskiyou Summit. The latter site has been in existence since the 1930s while the other three sites were established in the late 1960s. Snow water content data is available from the Big Red Mountain SNOTEL site about 7.5 miles west of Mt. Ashland. As mentioned above, daily snowfall amounts at the ski area are held in MAA files. MAA data extends back to the 1980s. (Further research of MAA archives could reveal data extending back to the late 1960s and 1970s).

Streamflow: Gages were established near the mouths of the East and West forks of Ashland Creek in 1925. These gages worked intermittently through 1982 and provided reliable data for 16 years within this 57-year timeframe. These gages were reestablished in the summer of 2002. Streamflow measurements were taken once in the fall of 2003 at the following locations within the SUP:

1. East Fork of East Fork near the Windsor Chairlift
2. Middle Fork of East Fork @ Bridge Crossing
3. West Branch of the Middle Fork of East Fork @ Crossing
4. Lower Middle Fork of East Fork Below All Confluences
5. Pumphouse Creek

Petrochemical: Petrochemical testing was conducted once on Cottonwood Creek adjacent to the Pacific Crest Trail below the MASA parking lot in 2001.

Stream temperature data is available from numerous locations over varying lengths of time. The majority of the data is from Ashland Creek with less data from Neil, Cottonwood, and Grouse Creeks. Hourly temperature readings were recorded with a temperature data logger.

Ashland Creek

- 10 years of hourly readings at the mouths of East and West Forks.
- 5 years of daily readings on East and West Forks at the Forest Road 2060 crossing.
- 3 years of hourly readings at two locations within and adjacent to the SUP. One site is located on the Middle Fork of the East Fork immediately below the Lower Wetlands Crossing of Run 12. The other site is located a short distance downstream from the Comer Chairlift on the East Fork of the East Fork.
- Hourly readings were begun at two additional locations in early July 2004. One site is located on Pumphouse Creek below the ski area. The other site is located on the West Fork of the East Fork at an elevation of approximately 5,900 feet.
- Personnel from the Aquatic and Riparian Effectiveness Monitoring Program (AREMP), designed to assess the effectiveness of the Aquatic Conservation Strategy (ACS), conducted stream temperature measurements at three locations on the East Fork and one location on West Fork in 2003.

Neil Creek

- 10 years of hourly readings near the Forest boundary above Interstate 5 and 8 years of hourly readings near the confluence with Emigrant Creek by the Ashland Airport.
- Hourly readings were begun at one additional location in early July 2004. This site is located adjacent to the Forest Road 2080 crossing of Neil Creek.

Grouse Creek

- No stream temperature measurements are known to have been taken in Grouse Creek. However, 9 years of hourly readings have been conducted at the following downstream locations in Beaver Creek: mouth, West Fork (lower), and West Fork (upper). Additional readings have also been conducted at Hungry Creek, a tributary to Beaver Creek, for the same period of time. This stream is located approximately 2 miles south of the mouth of Grouse Creek.

Cottonwood Creek

- Hourly readings were begun at one location in early July 2004. The site is located immediately south of the MASA parking lot below the Pacific Crest National Scenic Trail.

Air Temperature: Hourly readings were begun at two locations within the SUP in mid June 2004. One site is located near the Base Lodge and the other near the bottom of authorized Chairlift LC-6 in the Middle Fork area. Daily temperature readings are taken by MAA personnel throughout the winter operating season. This data has not been compiled and is in raw format.

Sediment: Sediment data is available from the 1987 Forest Service publication *Origins and Characteristics of Sedimentation in Reeder Reservoir*. Specific sediment data relative to the ski area is available from the Forest Hydrologist's sediment dam monitoring on the East Fork of the East Fork of Ashland Creek from 1978-1983. More recent monitoring of the original sediment dam and a small settling pond upstream has been conducted by Forest Service personnel (permit administrator, soil scientist, and geologist).

Further documentation of sediment-related monitoring has been conducted over the past few years as part of standard permit administration. This monitoring includes photo and written documentation by the above-mentioned Forest Service specialists.

Other: Aerial photos dating back to the time of ski area construction in the mid 1960s. An EPA data website (http://www.epa.gov/storet) called STORET includes compilations of various water quality compilations including turbidity, phosphorous, temperature, pH, and other parameters. Data collection sites were located on the East and West Forks of Ashland Creek as well as the main stem below Reeder Reservoir.

Ongoing and Planned Monitoring

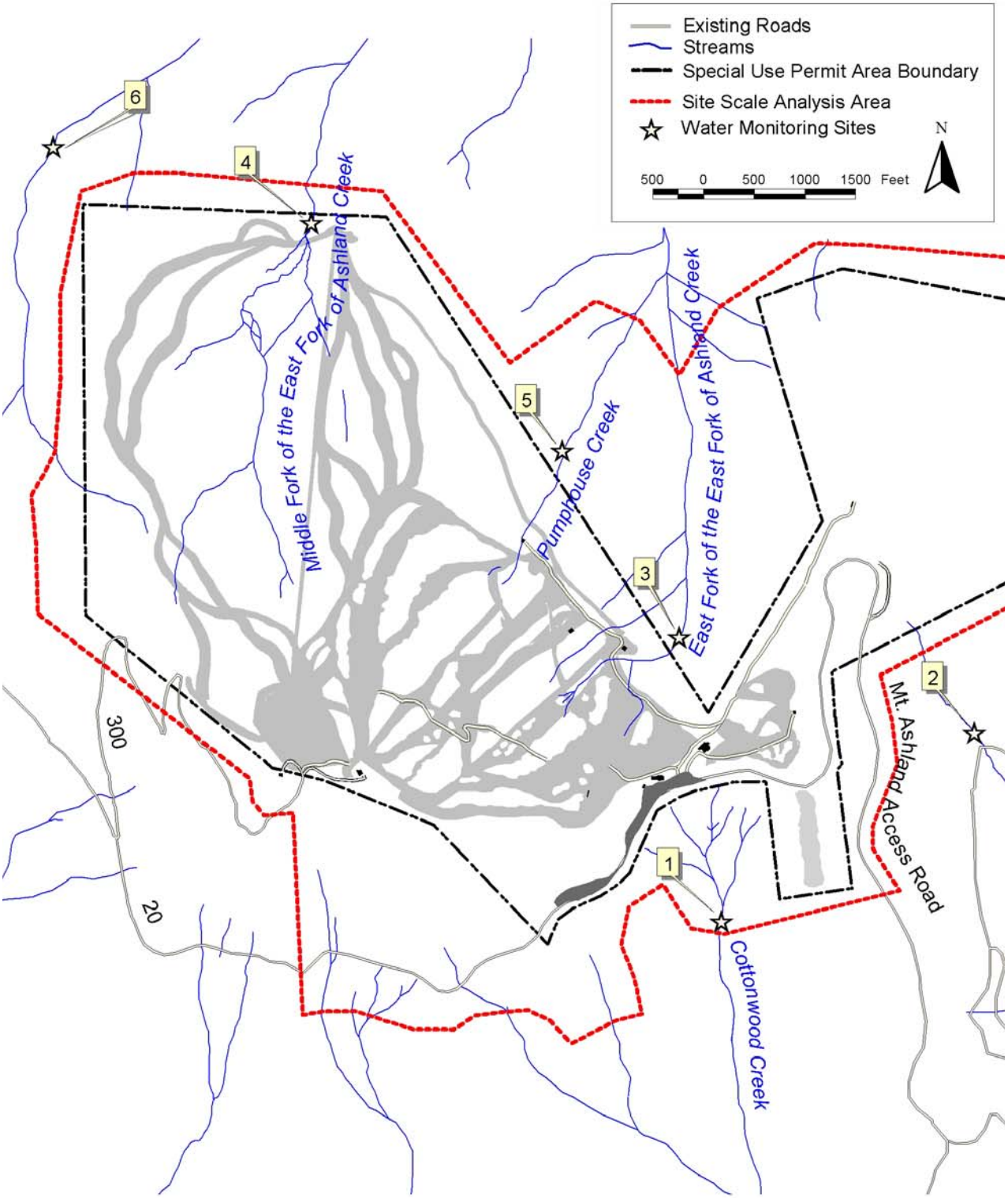
Water Resources

Six monitoring sites were established in the spring and early summer of 2004 to measure parameters associated with water quality and flow. These parameters include: temperature, flow, suspended sediment, pH and petrochemicals. All sites will be measured for all parameters with the exception of petrochemicals. Cottonwood Creek will be the only stream measured for this parameter due to its location below the MASA parking lot. These sites are listed on the following table and are shown on Map-ROD C-2.

Table ROD C-2. Water Resources Monitoring Site Information

Map Reference No.	Stream	Legal Location T 40S, R1E, Section:. Elevation: Aspect:	Date Established	Notes and General Directions to Site
1	Cottonwood	17 SW of NE 6,075' 190°	July 6, 2004 1000	Access to site via KNF road that takes off from Mt. Ashland Access Rd across from Bull Gap Snopark. Located short distance upstream from road crossing
2	Neil	22 NW of NW 5,977' 146°	July 7, 2004 1040	Access to site via Road 2080 from Bull Gap Snopark. Located short distance upstream from road crossing
3	EF of East Fork Ashland	16 SW of SE 6,194' 33°	July 6, 2004 1445	Known as site "EFA 2" in previous temperature monitoring efforts. Access to site from base of Comer Lift. Initially established in 2001 for temperature.
4	MF of East Fork Ashland	17 NE of NE 5,886' 18°	July 6, 2004 1200	Known as site "EFA 3" in previous temperature monitoring efforts. Access from base of Ariel. Initially established in 2001 for temperature.
5	Pumphouse 660864	16 NE of SW 5,919' 35°	July 6, 2004 1400	Access from base of Ariel.
6	WF of East Fork Ashland	17 NE of NW 5,912' 58°	July 13, 2004 0830	Access from base of Ariel or from "Rabbit Ears."

MAP ROD C-2. Water Resources Monitoring Sites



All sites will be measured on a monthly basis and, as much as possible, during event-driven events such as rain-on-snow and thunderstorms. Due to deep snowpacks, measurements cannot be taken during the winter months. At the time this Monitoring Plan was being developed, the Forest Service and MAA were working with the US Geological Survey to determine if this agency could perform all measurements and validate the data. It is likely that the City of Ashland will also be involved with some of these monitoring efforts, at least in terms of consulting needs. Initial measurements (other than temperature, which began in July 2004) are scheduled to begin in September 2004.

In order to track the evolution of any change, photo points related to water resources will be established at all Watershed Restoration sites, the Lower Wetland crossing area, and the Upper Meadow.

Botany

Continue to adhere to the monitoring requirements for Mt. Ashland lupine and Henderson's horkelia as established in the 2002 Conservation Agreement between the U.S. Fish and Wildlife Service and the Forest Service. The two whitebark pine in the Bowl area will be visited monthly during the winter operating season to determine if ski area operations show a need to mark or rope off these two trees.

Establish photo points at the Upper Meadow and at the Lower Wetlands crossing to detect possible changes in species composition.

Wildlife

No specific monitoring will be conducted for wildlife species. As part of a research project, Keith Aubrey of the Forest Service Pacific Northwest Research Station will be conducting research on Pacific fisher in the Siskiyou Mountains.

Geologic Slope Stability

At the Site Scale, perform monitoring of slope stability at two, five, and ten years following all ground disturbing activities that occur in areas previously mapped as Landslide Hazard Zone 1 or 2. Forest Geologist will perform this monitoring task and document any changes relative to slope stability should they occur.

Soil and Site Productivity

The following table gives soil quality thresholds and monitoring methods for disturbed sites that will be associated with the proposed ski expansion at Mt. Ashland. The intent of these thresholds is to describe to the project implementation team or construction group what is expected the first year after construction, but not how to implement the work. Ultimately the Forest Service role will be to monitor the soil disturbance to see if the operations are meeting these thresholds.

Table ROD C-3. Soils and Site Productivity Thresholds

Activity	Distance to Streamcourse	% Maximum Bare Soil	Maximum % Detrimental Soil Conditions	Monitoring Unit (1)	% of Monitoring Units Sampled
Ski and tubing run construction through forested areas	<100'	5	3	Ski Run in Forest	100%
	>100'	25	6	Ski Run in Forest	10%
Ski Runs constructed through meadows and open forested stands	<100'	10% lower than existing % bare soil	3	Ski Run in Openings	100%
	>100'	Existing bare soil %	6	Ski Run in Openings	10%
Construction of fill slopes or on bare surfaces (ski runs, buildings, terminals, towers, etc)	<200'	10	NA	Fillslopes and Surfaces	100%
	>200'	25	NA	Fillslopes and Surfaces	10%
Construction of parking lot fill slopes	<200'	5	NA	Fillslopes and Surfaces	100%
	>200'	15	NA	Fillslopes and Surfaces	10%
Activities within wetlands	Within Wetland	NA	1	Ski Run in Forest	100%

(1) Monitoring Units are areas of disturbance associated with the expansion decision that can be identified on the ground. They are described by activity and distance from streamcourse, and can be mapped (and tracked) in GIS.

These thresholds are based around the issues of soil erosion and sedimentation. They are not based on soil and site productivity qualities, since the Developed Recreation land allocation does not contain Standards and Guidelines for detrimental soil conditions. Soil erosion and sedimentation are very important issues on this project and is why the percent minimum bare soil (cover) and percent detrimental soil conditions are more restrictive within 100 feet of streamcourses than the guidelines that have been stated in the RRNF Forest Plan for other land allocations.

The following describes the monitoring methods for the table above.

The overall purpose of monitoring for soil cover and detrimental soil disturbances associated with ski run construction near stream channels is to assure that water quality objectives are met and to adapt construction practices to comply if they are not.

Bare Soil Exposure

The effect of **bare soil exposure** is the potential for sheet erosion and off-site sedimentation. Bare soil monitoring in meadows and open forests is conducted differently because there is less inherent soil cover in these areas. For this reason, transects must be conducted prior to disturbance.

Method: The percent bare soil will be measured using a photo-grid monitoring system similar to a system being developed for the Federal Highway Administration (Riley and others in development) or methods described in the Ashland Watershed Protection Project – Monitoring Plan (USDA 2001). Monitoring transects will be randomly established prior to construction. They will be permanently marked with a rebar at each end of each transect. Transects will extend outside of the disturbance area so that the rebar is not disturbed during construction. The percent bare soil will be determined for each monitoring unit for each sampling date.The area in bare soil will be calculated by multiplying the area of each disturbance by the percent soil cover[2] for that disturbance. The bare soil area of each disturbance is totaled for the monitoring unit and divided by the total area to determine the percent of monitoring unit in bare soil.

Detrimental Soil Disturbance

Activities that can produce **detrimentally burned soils** include all types of prescribed fire (hand pile and burning, and prescribed underburning). Soil quality standards consider soils to be detrimentally burned when the mineral soil surface has been significantly changed in color (oxidized to a reddish color), and the next one-half inch is blackened from organic matter charring by heat conducted through the top layer on an area greater than 100 square feet and a width of 5 feet. Soils with portions of a duff/litter layer intact have not been heated to the extent that is classified as detrimentally burned. The effect of burned piles could be the possible overland flow of water and sediment.

Detrimental **displacement** is defined as the visual evidence of surface loss in areas greater than 100 square feet; the presence of rills or gullies; and/or water quality degradation from sediment or nutrient enrichment. Displacement of soils can be caused by yarding of trees or heavy equipment travel. The effect of displacement of soil on water quality is the potential for surface channeling of water.

Soil quality standards classify an increase in bulk density of more than 15 percent at 4 to 12 inch soil depths as **detrimental soil compaction.** The effect of a high bulk density can be the potential for overland flow of water and sediment transport into stream channels or wetland areas.

Method: Determine the location of each mapping polygon within monitoring units on the ground prior to disturbance. These units will be mapped and entered into a GIS database for tracking. Following disturbance activities, walk the area at 30-foot contours and measure width and length all detrimental displacement and burned soils as defined above. For soil compaction, conduct before and after bulk density samples similar to previous trials conducted in Southern Oregon (Amaranthus and Steinfeld 1997; USDA 2002) to determine the relationship between the number of passes by excavator or other type of large equipment and soil compaction of MASA soil types.

If trials show that bulk density is not increased over 15%, then use of this equipment will not be monitored for compaction on other MASA sites. If it does exceed 15% then length and width of compaction within that polygon within a monitoring unit will be measured and area of detrimental disturbance will be calculated.

[2] % soil cover = 100 - % bare soil

Calculate the area for each detrimental disturbance. Total the area for all detrimental disturbances within a monitoring unit and divide by the area of the monitoring unit to determine percent area in detrimental soil disturbance conditions. The ground disturbance sites can be recorded on a large scale map.

Sediment Transport

Sediment transport from cuts and surfaces during rainstorm or snowmelt events has the potential of reaching a live stream or wetland. The purpose of this monitoring is to determine if sediment, originating from construction of cuts and surfaces, is entering or will potentially enter a channel or wetland. If sediment is entering a channel, then an estimate of quantities of sediment will be determined. Through this monitoring, sites that appear to be contributing sediment or potentially will contribute sediment can be identified and Mitigation Measures or modification of action or activity can be implemented.

Method: A transect will be established 50 feet below the monitoring unit polygon (typically the bottom of the fill slope) and run parallel for the entire length. Areas where channels or wetlands are less than 50 feet from disturbance will have transects placed between 5 and 10 feet above the channel.

Any transported soils observed crossing the transect will be designated on a map. The transported soil will be measured for slope length (from the bottom of the fill slope or disturbance to the last point the transported soil can be observed. If the transported soil extends to a channel or wetland, the amount of soil that has entered the channel will be estimated using methods similar to those developed by Megahan and Ketcheson (1996). Monitoring will take place after major rainstorms (> 0.5 inches of rainfall/hour) for the first several years after construction, or until deemed unnecessary.

Scenic Quality

Scenery resource monitoring will evaluate changes to the valued landscape character as a result of ski area expansion. Alterations to the landscape will be measured as changes in scenic integrity, when viewed from the valued viewsheds identified below:

- The Crest Viewshed (views from along Forest Road 20 and along the Pacific Crest National Scenic Trail),
- The California Viewshed (views from along northbound travel from Interstate 5-California, near Hornbrook exit),
- The Ski Area itself (views from within the permit boundary area), and
- The Rogue Valley Viewshed (views along dominate travel routes within the valley: 1) City of Ashland/Interstate 5, 2) Dead Indian Memorial Road, and 3) Highway 66 near Greensprings Summit, 4) City of Medford/Interstate 5 viewpoint.

Although specific points along these viewsheds will yield more direct views into the analysis area than others, monitoring should consider views along the extent of the travel corridor. In the case of the Rogue Valley Viewshed, evaluation should consider all possible views along each route, not merely those points chosen for photo-realistic simulations. Photos and/or video should be taken at the established viewpoints and viewsheds. Locations may vary provided each is representative of the respective corridor views.

Repeatable photopoints include the viewpoint locations within the Rogue Valley viewshed: City of Ashland, Dead Indian Memorial, and Coggins Saddle, (UTM locations for each are stored in the GIS database, Ashland Ranger District). Photos should be taken at both a 75 mm and 150-200 mm focal length to replicate a naked eye view and zoomed image view, respectively.

Monitoring should be done in both winter and summer times of year to account for seasonal-specific effects. Monitoring needs to begin during implementation to insure scenery-specific mitigation has been employed. After implementation is complete, monitoring for overall project effectiveness should begin, with periodic follow-up intervals, every 3-5 five years. Determination of exact intervals should respond to the evolution of the surrounding landscape, future projects, and agency needs.

Aquatic Habitat

Aquatic and riparian parameters to be measured in addition to water quality parameters are listed below. These parameters are indicators, utilized for baseline data and reveal upward or downward trends in stream conditions and fish habitat. The monitoring parameters to be measured pre and post-project are pebble counts, macroinvertebrate presence, and stream temperature.

- Macroinvertebrate assemblages and abundance (biological integrity), and
- Monitoring of East and West Forks of Ashland Creek fish habitat will be ongoing as these streams serve as reference streams for assessing the health of other Siskiyou Mountain streams in granitic geology

Landscape Ecology

Over the long term, measurable indicator(s) should be established to measure effects and trends. Changes in vegetation distribution (reduction or increases in cover) and proportion of seral stages can be used as the coarse filters. Plant density and composition can be used as the fine filters.

- Monitor the Engelmann spruce stand(s) and selected indicator species in the spruce wetland. Compare with existing information and previous inventories.
- Threshold species at the extremes of their range that are sensitive to change (as is spruce); American sawwort and subalpine fir are potential candidates.
- Tie into permanent sampling programs with standard protocols, such as the ecoplots, and the Current Vegetation Survey. Resample and analyze trends in vegetation cover, species presence, and proportion of seral stages, and compare diversity and pattern over time.
- Compare older studies and inventories like Whittaker, Detling, Waring, etc., although with caution in regard to purpose of inventory, spatial context, sampling schemes, and changes in taxonomy.
- Permanently mark and resample, with the same protocol, plots not associated with other programs. Compare diversity and pattern over time.

IV. EFFECTIVENESS EVALUATION

Effectiveness Evaluation in this Monitoring Plan is the identification of change based on monitoring, to determine if expansion actions and Mitigation Measures were effective in achieving the stated function and actions resulted in estimated resource conditions. Evaluation is the feedback mechanism identifying whether there is a need to change how the project is being implemented to comply with existing direction, or whether a need to change or adapt the project or action.

In this Monitoring Plan, effectiveness evaluation occurs by comparing the results of post project condition monitoring to the baseline conditions (Monitoring Plan Section III). Elements to be monitored are discussed under Ongoing and Planned Monitoring. These are compared to baseline data that is available. Questions to be answered during the evaluation process include:

- Is there any change?
- If change has occurred, is it due to project activities?
- Are changed conditions in compliance with established thresholds, standards and guidelines and other regulations?
- Are effects acceptable?
- Is a change to practice (adaptive management) necessary?

Evaluation completes the cycle of knowing the current condition, being aware of the changes, determining if these changes are acceptable and doing something about them if they are not. The lessons learned from monitoring and data collection will be useful for modifying project plans to better meet watershed goals and objectives. If effectiveness evaluation indicates laws, regulations, standards or critical objectives are not being met, the project will be modified as necessary and appropriate.

V. REPORTING

An annual implementation monitoring summary report will be provided to the RR-SNF by MAA under Forest Service and permit holder (City of Ashland) oversight. The report will identify which projects were active in the preceding year, which Mitigation Measures were applied in each project (see Table ROD C-2), what level of implementation monitoring was used for each measure, and the results of that implementation monitoring.

This report will also document the effectiveness evaluations that were made, for which projects or groups of actions, and document any changes that were made to correct practices that were resulting in unacceptable effects.

Literature Cited

Amaranthus, M.P., and Steinfeld, D.S. 1997. Soil compaction after yarding of small-diameter Douglas-fir with a small tractor in southwestern Oregon. Res. Pap. PNW-RP-504. Portland OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station, 7 p.

Brazier, Jon. November 15, 1982. Letter to Ashland District Ranger. Report on sediment monitoring project below ski area.

Brazier, Jon. October 11, 1983. Letter to Ashland District Ranger. Report on sediment monitoring project below ski area.

EPA Website - http://www.epa.gov/storet. Compiled May 2001. Legacy STORET Data. Historic water quality data from East and West forks Ashland Creek. Includes "Station Descriptions," "Summary Data Reports," and "Detailed Data Reports" from the 1970s to 1990s.

Megahan, W.F; Ketcheson, G.L. 1996. Predicting downslope travel of granitic sediments from forest roads in Idaho. Water Resources Bulletin. 32(2): 371-382.

Riley, S., Steinfeld, D. and Kern, J. Monitoring protocol for assessing vegetation and surface conditions of roadsides. Expected completion of protocol in 2005.

USDA Forest Service. 1987. Origins and Characteristics of Sedimentation in Reeder Reservoir. Rogue River National Forest. Medford, Oregon. August.

USDA Forest Service, Rogue River National Forest. April 2, 2002. Memorandum from David Steinfeld to files documenting soil density monitoring methods and results before and after excavator work.

USDA Forest Service, Rogue River National Forest. May 2001. Ashland Watershed Protection Project – Monitoring Plan (III B page 18).

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