

# Crystal Mountain Master Development Plan

## Final Environmental Impact Statement



## Record of Decision

August 2004



USDA, U.S. FOREST SERVICE

MT. BAKER-SNOQUALMIE NATIONAL FOREST

# Crystal Mountain Master Development Plan

## Record of Decision

USDA, U.S. Forest Service  
Mount Baker-Snoqualmie National Forest

### Cooperating Agencies:

National Park Service – Mount Rainier National Park  
U.S. Fish and Wildlife Service

### Lead Agency:

USDA Forest Service

### Responsible Official:

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# **RECORD OF DECISION**

## **Crystal Mountain Master Development Plan**

### **Final Environmental Impact Statement**

U. S. Department of Agriculture - Forest Service

Mt. Baker-Snoqualmie National Forest

Snoqualmie Ranger District

Pierce County, Washington

Responsible Official: John Phipps, Forest Supervisor

**August 2004**

## **1.0 INTRODUCTION**

This Record of Decision documents my decision to authorize Alternative 6 with modifications, for implementation as described in the *Crystal Mountain Final Environmental Impact Statement* (FEIS). This is one of several decisions that are required to implement this project. Various local, state, and other federal decisions and/or permits are also required for the implementation of this project (see Table ROD-3, below).

### **1.1 Crystal Mountain Ski Resort**

Crystal Mountain is situated in the Cascade Mountain Range of western Washington, adjacent to Mount Rainier National Park (MRNP), approximately 35 miles southeast of Enumclaw, Washington, T. 17 N, R. 10 and 11 E. Refer to Figure 1-1 on page 1, Volume 3, FEIS. Located on the Snoqualmie Ranger District (SNOQRD) of the Mount Baker-Snoqualmie National Forest (MBSNF), Crystal Mountain is accessed during the winter via State Route 410 (SR 410) and Crystal Mountain Forest Highway (Pierce County Road 97810). There are approximately 4,448 acres of National Forest System (NFS) lands occupied by Crystal Mountain as authorized by a Special Use Permit (SUP) administered by the U.S. Department of Agriculture – Forest Service (Forest Service). This Record of Decision pertains to a federal action that affects NFS lands within the existing SUP boundary.

## **2.0 THE DECISION**

It is my decision to adopt Alternative 6 with modifications (the Selected Alternative), as described below. These actions will occur within the existing SUP area boundary of Crystal Mountain. The Selected Alternative will be the Master Development Plan that guides Crystal Mountain's development over the next 10 – 15 years.

My decision includes selection of a Stormwater Management Plan for implementation: I have selected construction of the enhanced stormwater ponds, in the locations depicted

on Drawing 200 of the Stormwater Management Plan (FEIS Appendix M), including a large enhanced pond to the northeast of the Bullion Basin Base Area and parking structure.

My decision also includes a non-significant Forest Plan Amendment to reallocate approximately 550 acres from Administratively Withdrawn (MA 3C – Developed Recreation, Winter Sports Resorts) and Riparian Reserve to Administratively Withdrawn (MA 1B – Dispersed Recreation - Semi Primitive, Non Motorized) and Riparian Reserve.

This decision represents the final analysis under the National Environmental Policy Act (NEPA) necessary to implement all approved projects included in this decision. Any future proposed facilities not included in this decision will require separate analysis.

## 2.1 Changes Between DEIS Preferred Alternative and the Decision

The DEIS, published in August 2001 included my identification of Alternative 6 as the preferred alternative. This ROD documents my decision to approve Alternative 6 with modifications (the Selected Alternative). These modifications were made in response to concerns raised during and after the comment period for the DEIS, and reflect changes to further minimize impacts. Modifications to Alternative 6 include:

- The C-16 (East Peak) lift and trails have been **eliminated** from my decision. (as in Alternative 3, FEIS).
- Trail 4B – Boondoggle will not be widened (as in Alternative 5, FEIS).
- Snowmaking storage in an up-mountain lagoon at the base of Avalanche Basin has been **eliminated** from my decision.
- The construction of Parking Lot G will be approved **prior** to the development of the Bullion Basin Base Area and parking structure, to replace that portion of Parking Lot B to be taken up during construction of the new Bullion Basin Base Area and parking structure.
- Parking Lot H will be built **only** if, after construction of the Bullion Basin Parking Structure, there is a demonstrated need.
- Parking Lot F will be **reduced** in size to restore Riparian Reserves along Silver Creek, and **additional stream restoration** will be provided at Parking Lot F (as in Alternative 5, FEIS).
- Parking Lot B restoration will be as described in Alternative 5, FEIS. The construction of additional parking will not be approved until the initiation of parking lot restoration along Parking Lots B and F, as well as the Silver Creek Stabilization (FEIS Appendix I).

Refer to Section 12.0 for a summary comparison of environment consequences of implementing the Selected Alternative, and the other alternatives considered.

Table ROD-1 shows a summary comparison of my Decision (the Selected Alternative), with the DEIS Preferred Alternative, and the current, existing condition.

Following Table ROD-1 are Figures ROD-1 and ROD-2, which show the Selected Alternative at two scales: the entire SUP area and the Crystal Mountain base area.

**Table ROD-1**  
**Summary Comparison of Existing Facilities to the DEIS Preferred Alternative**  
**and the Selected Alternative**

<b>Master Plan Components</b>	<b>Existing ('00-'03)</b>	<b>DEIS Preferred Alternative</b>	<b>Selected Alternative</b>
Alpine Ski Area Capacity (CCC)	7,460	10,170	9,740
Lift/Trail Capacity (SAOT) <sup>a</sup>	7,120	10,040	9,600
Backcountry Capacity in SUP (SAOT) <sup>b</sup>	340	130	140
Design Peak Day Capacity (PAOT) <sup>c</sup>	8,206	11,187	10,714
FS SUP Area (acres) <sup>d</sup>	4,488	4,488	4,488
<sup>a</sup> SAOT = Skiers-At-One-time <sup>b</sup> Backcountry CCC breakdown as follows: lift-served backcountry includes South Country – 100, North Country – 200, Other – 30; hike-to backcountry includes East Peak - 10. <sup>c</sup> PAOT = People-At-One-time <sup>d</sup> The current SUP indicates that the permit area is 4,350 acres, however GIS analysis indicates the actual area of the SUP is 4,488 acres.			
<b>Lifts<sup>e</sup></b>			
Total Number of Lifts	9	17	16
Chairlift	9	14	13
Surface Tows	0	2	2
Tram	0	1	1
C-1, Miner's Basin	E	E,N	E,N
C-3, Green Valley Express	E	E	E
C-4, Quicksilver Express	E,N	N,R	N,R
C-6, High Campbell	E	E	E
C-7, Gold Hills	E,N	E,N	E,N
C-8, Discovery Express	E,N	N,R	N,R
C-9, Forest Queen Express	E	E,N	E,N
C-10, Rainier Express	E	R	R
C-11, Chinook Express	E	E,N	E,N
C-12, Park 'n Ride	-	P	P
C-13, Kelly's Gap Express	-	P	P
C-14, Morning Glory Express	-	P	P
C-15, Bullion Basin Express	-	P	P
C-16 East Peak		P	-
T-1, Summit Tram	-	P	P
S-1, Ptarmigan	-	P	P
S-2, Pika	-	P	P
<sup>e</sup> E = Existing, P = Proposed, N = Night Skiing, R = Relocated			
<b>Ski Terrain by Ability (acres/percent distribution)<sup>f</sup></b>			
Beginner	12.5 / 7	17.4 / 7	17.4 / 7
Novice	50.9 / 18	57.4 / 14	57.4 / 15
Low Intermediate	22.7 / 7	35.2 / 8	35.2 / 8
Intermediate	181.3 / 47	247.0 / 45	239.8 / 47
Advanced Intermediate	2.3 / 0	35.2 / 5	35.2 / 5
Expert	180.5 / 21	251.5 / 21	197.7 / 18
<sup>f</sup> Skier distribution based on the following optimum densities (skiers/acre): Beginner – 23, Novice – 15, Low Intermediate – 13, Intermediate – 11, Advanced Intermediate – 8, Expert – 5.			
<b>Night Skiing</b>			
Total Trails	5	22	22
Available Terrain (acres)	62.6	205.7	198.5
Capacity (skiers)	1,720	5,120	5,120
<b>Snowmaking</b>			
Total Trails	1	32	32
Total Coverage (acres)	30	253.9	253.9
Water Storage (millions of gallons)	-	5.0	0
<b>Trails<sup>g</sup></b>			
Number of Trails	54	79	76

**Table ROD-1**  
**Summary Comparison of Existing Facilities to the DEIS Preferred Alternative**  
**and the Selected Alternative**

<b>Master Plan Components</b>	<b>Existing ('00-'03)</b>	<b>DEIS Preferred Alternative</b>	<b>Selected Alternative</b>
Formal Terrain (acres)	450.2	640.8	582.7
1A, Skid Road	E	E,N,S	E,N,S
1B, Deer Fly	E	E,N,S	E,N,S
1C, Lower Bull Run	E	E,N,S	E,N,S
1D, Lower Exterminator	E	E,N,S	E,N,S
1E, Ptarmigan	-	P,S	P,S
3A, Green Valley	E	E	E
3B, Grubsteak	E	E	E
3C, Snorting Elk Traverse	E	E	E
3D, Northway Ridge	E	See 14A	See 14A
3E, Upper Snorting Elk	E	E	E
3F, Lower Snorting Elk	E	E	E
3G, Right Angle	E	See 13D	See 13D
3H, Kelly's Gap Road	E	See 13B	See 13B
3I, Sluiceway	E	See 13C	See 13C
4A, Quicksilver	E,N	M,N,S	M,N,S
4B, Boondoggle	E	M,N,S	E,N,S
4C, Boarder Zone	E,N	N,S	N,S
4D, Tinkerbell	E,N	M,N,S	M,N,S
6A, Silver Ridge	E	E	E
6B, Powder Bowl	E	E	E
7A, Gold Hills	E,N	E,N,S	E,N,S
7B, T & T	E	E,N,S	E,N,S
8A, The Meadow	E,N,S	M,N,S	M,N,S
8B, Kid's Club	E	-	-
9A, Queens	E	E,N,S	E,N,S
9B, Snow Garden	E	E,N,S	E,N,S
9C, Upper CMAC	E	E,N,S	E,N,S
9D, Lower CMAC	E	E,N,S	E,N,S
9E, Mr. MaGoo	E	E,N,S	E,N,S
9F, Little MaGoo	E	E,S	E,S
9G, Downhill	E	E,N,S	E,N,S
9H, K2 Face	E	E	E
9I, Rolling Knolls	E	E,N,S	E,N,S
9J, Wally's Way	E	E,N,S	E,N,S
9K, Sideburn	E	E,N,S	E,N,S
10A, Upper Front Traverse	E	E	E
10B, Back Traverse	E	E	E
10C, Lucky Shot	E	E	E
10D, Little Portillo	E	E	E
10E, Bear Pits	E	E	E
10F, Gandy's Run	E	E	E
10G, Mel's Madness	E	E	E
10H, Howeird	E	E	E
10I, Iceberg Ridge	E	E	E
10J, Lower Front Traverse	E	E	E
10K, Last Scream	E	E	E
10L, Little Shot	E	E	E
10M, Sunnyside	E	E	E
10N, Iceberg Gulch	E	E	E
10O, Upper Bull Run	E	E	E
10P, Upper Exterminator	E	E	E
10Q, West Face	E	E	E

**Table ROD-1**  
**Summary Comparison of Existing Facilities to the DEIS Preferred Alternative**  
**and the Selected Alternative**

Master Plan Components	Existing ('00-'03)	DEIS Preferred Alternative	Selected Alternative
10R, Pro Course	E	E	E
11A, Broadway	E	E,N,S	E,N,S
11B, Cut Over	E	M,N,S	M,N,S
12A, Easy Link	-	P,S	P,S
12B, Pika	-	P,S	P,S
13A, Buck	-	P	P
13B, Kelly's Gap Road	-	M,S (Previously 3H)	M,S (Previously 3H)
13C, Sluiceway	-	Previously 3I	Previously 3I
13D, Right Angle	-	Previously 3G	Previously 3G
13E, Angle-to-Northway	-	P	P
13F, Northway Return	-	P,S	P,S
13G, Spook Hill	-	P	P
13H, Lower Spook Hill	-	P	P
13I, Paradise Bowl	-	P	P
14A, Upper Stump Patch	-	P	P
14B, Lower Lift Line	-	P	P
14C, Northway By-pass	-	P	P
14D, Lower Northway	-	P	P
14E, Upper Northway	-	P	P
14F, Brand X 1	-	P (2A in Alt. 2)	P (2A in Alt. 2)
14G, Brand X 2	-	P	P
14H, Morning Glory	-	P	P
15A, Blue Bell	-	P,S	P,S
15B, Upper Blue Bell	-	P,S	P,S
15C, Upper Bullion Trail	-	P	P
15D, Mary Lee	-	P	P
15E, Lower Bullion Trail	-	P	P
15F, New bullion Trail	-	P,S	P,S
15G, Ted's Run	-	P,S	P,S
16A, East Peak – South	-	P	-
16B, East Peak	-	P	-
16C, East Peak – North	-	P	-

E = Existing trail, P = Proposed Trail, M = Existing trail proposed to be modified  
N = Night skiing accessible, S = Snowmaking Equipped

**Support Facilities**

Total Floor Space (square feet)	54,269	142,150	142,150
Upper Base Area (square feet)	50,599	69,800	69,800
Bullion Basin Base Area (square feet)	0	32,100	32,100
Summit House (square feet)	3,670	14,150	14,150
High Campbell Restaurant (square feet)	0	15,550	15,550
Green Valley Restaurant (square feet)	0	10,600	10,600
Number of Seats	1,382	2,906	2,906
Food Service Capacity (guests)	7,865	10,169	10,169
Overnight Visitor Capacity (guests)	729	1,419	1,419
Number of RV Spaces <sup>h</sup>	42	125	125
Employee Housing (pillows)	85	190	190
Maintenance Facilities (square feet)	15,681	18,239	18,239

<sup>h</sup> Under the Selected Alternative, RV spaces would be expanded and upgraded to include electricity, sewer, and water.

**Parking**

Guest Parking (acres)			
Lot A	3.0	3.7	3.7
Lot B	11.1	7.2	7.2



**Table ROD-1**  
**Summary Comparison of Existing Facilities to the DEIS Preferred Alternative**  
**and the Selected Alternative**

<b>Master Plan Components</b>	<b>Existing ('00-'03)</b>	<b>DEIS Preferred Alternative</b>	<b>Selected Alternative</b>
Lot C	3.7	3.2	3.2
Lot D	0.7	0.7	0.7
Lot E	0.6	0.6	0.6
Lot F	2.5	2.5	1.5
Lot G	-	7.3	7.3
Lot H	-	2.7	2.7
Structure	-	3.6 (486 cars)	3.6 (486 cars)
Garage	-	0.7	0.7
<b>Total Guest Parking Provided</b>	<b>21.6</b>	<b>32.2</b>	<b>31.2</b>
Employee Housing Parking (acres)	-	1.0	1.0
<b>Water/Wastewater</b>			
Average Annual Water Demand (gpd/ac-ft/yr)	33,700/32	76,312/72	76,312/72
Domestic Water Storage (gallons)	300,000	570,000	570,000
Average Annual Wastewater Treatment Demand (gpd)	33,700	76,312	76,312
Wastewater Disposal	subsurface	subsurface	subsurface
Power Demand (mw)	4.5	11	11
Propane Storage (gallons)	18,000	36,020	36,020
Number of Fuel Tanks	12	12	12
<b>Mountain Work Roads</b>			
Road Network Density (mi/mi <sup>2</sup> )	2.66	2.34	2.26
Road Network (miles)	18.68	16.40	15.83
Existing Roads to Remain (miles)	18.68	14.70	14.70
Proposed Roads (miles)	0	1.70	1.13
Existing Roads to be Obliterated (miles)	0	3.97	3.97
Proposed Temporary Roads (miles)	0	1.45	1.45

# Crystal Mountain

Mt. Baker-Snoqualmie National Forest

Selected Alternative

## LEGEND

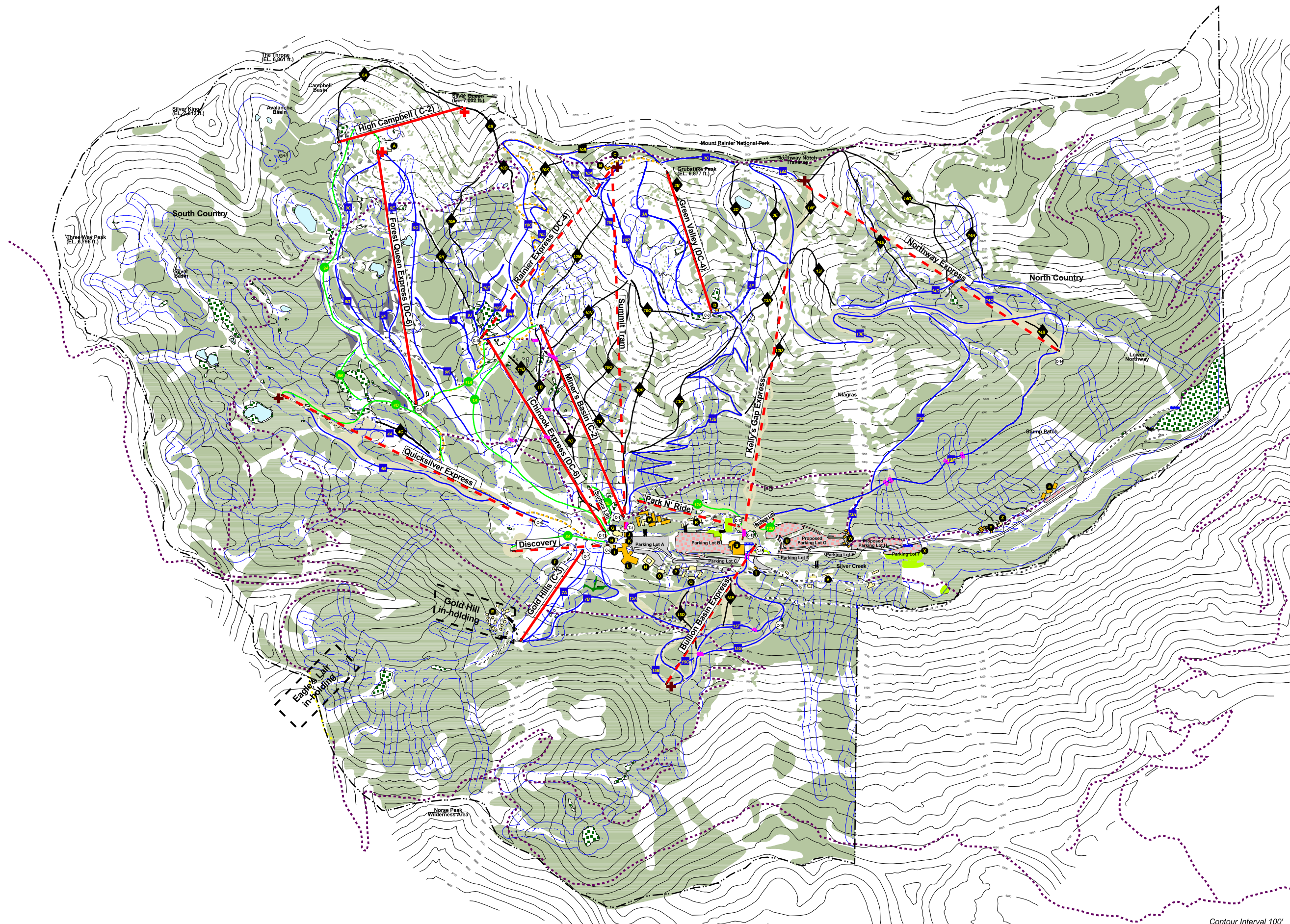
- Existing Lift
- Proposed/Modified Lift
- Existing Trail
- Proposed Reforestation
- Proposed Restoration
- Proposed Trail Clearing
- EA - Approved Trail Projects
- Proposed Gladed Terrain
- Egress Route/Open Terrain
- SUP Boundary
- Private In-holding
- Existing Building
- Proposed Building
- Existing Parking
- Proposed Parking
- Existing Bridge
- Proposed Bridge
- Crystal Mountain Boulevard
- Unpaved Road
- Hiking Trail
- Summit to Base Hiking Route
- Wetland
- Stream/Riparian Reserve
- Shuttle Stop
- Existing Ski Patrol
- Proposed/Replaced Ski Patrol

## Resort Facilities

- Approved High Campbell Basin Restaurant
- Proposed Summit House
- Television Building
- Proposed Green Valley Restaurant
- Gold Hill Community
- Domestic Water Storage
- Main Lodge
- Sports Alm Building
- Proposed Chapel
- Proposed Lower Tram Terminal
- Ticket Office
- Proposed Hotel
- Alpine Inn
- Silver Skis Condominiums
- Quicksilver Lodge
- Village Inn
- Crystal Chalet Condominiums
- Maintenance Complex
- Prop. Bullion Basin Lodge/Parking
- Proposed Fire Station
- RV Conssionaire/Restroom
- Ski Clubs
- Prop. Employee Housing (Duplex Style)
- Prop. Shuttle Waiting/Restroom
- Prop. Wastewater Treatment Plant
- Power Generation Plant (PSE)
- Prop. Employee Housing (Dorm Style)



800 0 800 800 Feet



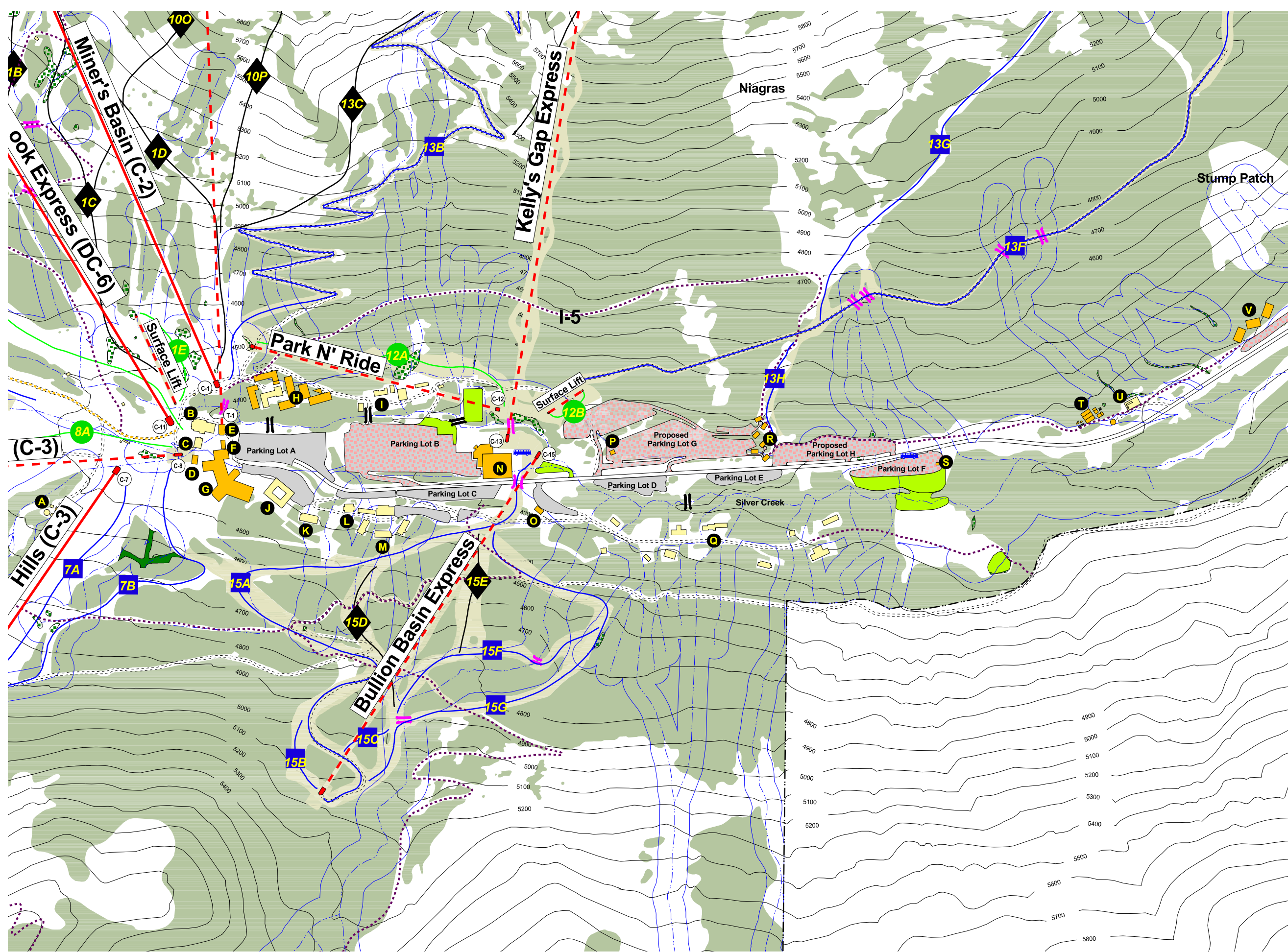
Contour Interval 100'



# Crystal Mountain

Mt. Baker-Snoqualmie National Forest

## Selected Alternative Base Area



- Existing Building
- Proposed Building
- Existing Parking
- Proposed Parking
- Proposed Reforestation
- Proposed Restoration
- Proposed Trail Clearing
- Crystal Mountain Boulevard
- Unpaved Road
- Existing Bridge
- Proposed Bridge
- Hiking Trail
- Summit to Base Hiking Route
- Wetland
- Stream/Riparian Reserve
- Shuttle Stop

### Resort Facilities

- Domestic Water Storage
- Main Lodge
- Sports Alm Building
- Proposed Chapel
- Proposed Lower Tram Terminal
- Ticket Office
- Proposed Hotel
- Alpine Inn
- Maintenance Complex
- Silver Skis Condominiums
- Quicksilver Lodge
- Village Inn
- Crystal Chalet Condominiums
- Proposed Bullion Basin Lodge
- Proposed Fire Station
- RV Concessionaire/Restroom
- Ski Clubs
- Prop. Emp. Housing (Duplex Style)
- Prop. Shuttle Waiting & Restrooms
- Prop. Wastewater Treatment Plant
- Power Generation Plant (PSE)
- Prop. Emp. Housing (Dorm Style)

Contour Interval 100'



## 2.2 Other Elements of the Decision

### 2.2.1 *Non-significant Forest Plan Amendment*

As noted above, I am amending the *1990 MBSNF Land and Resource Management Plan* (Forest Plan), as Amended, to change the Management Area (MA) prescription for approximately 550 acres of NFS lands directly adjacent to the existing SUP boundary from Administratively Withdrawn (MA 3C Developed Recreation, Winter Sports Resorts) and Riparian Reserve to Administratively Withdrawn (MA 1B Dispersed Recreation - Semi-primitive, Non-motorized) and Riparian Reserve (refer to Figure 1.1.2-2, FEIS Volume 3).

### 2.2.2 *Mitigation, Management Requirements and Constraints, and Monitoring*

All of the mitigation measures, management requirements, constraints, and monitoring listed in Table ROD-4, in Section 11.0 of this ROD, are included as part of the Selected Alternative and part of my decision. These requirements, constraints, and mitigations are required by the Forest Service to avoid or minimize potential environmental harm associated with implementing the Selected Alternative on NFS lands. Crystal Mountain, as the permittee, is the party responsible for their implementation. If Crystal Mountain elects to initiate the construction and operation of any action authorized by this ROD, all of the management requirements, constraints, and mitigation measures are required.

Because of the length of Table ROD-4, and to make it easier for the reader and the staff who will be implementing these projects, the table is included in Section 11.0, near the back of this ROD.

### 2.2.3 *Restoration, Management Plans and Monitoring*

I have decided that execution of the following plans will insure that the implementation of the Selected Alternative will be carried out consistent with the analysis in the FEIS, including restoration, management, and monitoring. As presented in the FEIS, these plans do not specifically address the Selected Alternative; however, as appropriate, they will be updated to reflect the implementation of Alternative 6 with Modifications:

- Watershed Restoration Plan (FEIS Appendix C)
- Monitoring Framework Plan (FEIS Appendix D)
- Road Management Plan (FEIS Appendix E)
- Vegetation Management Plan (FEIS Appendix F)
- Silver Creek Stabilization Plan (FEIS Appendix I)
- Stormwater Management Plan (FEIS Appendix M)

### 2.2.3.1 Monitoring

My decision includes the incorporation of all monitoring requirements, described in detail in the Revised Monitoring Framework Plan for Crystal Mountain Master Development Plan (FEIS Appendix D). This document is intended to demonstrate that monitoring of impacts would be based upon, and consistent with, Standards and Guidelines in the Forest Plan, as Amended. The objectives of the Monitoring Framework Plan are to monitor the implementation of mitigations, effectiveness of management practices, and validation of the impact analysis. The plan includes monitoring at the project and watershed scale.

In addition to the above monitoring requirements, the Forest Service will continue to conduct regular monitoring and administration of other aspects of the management and operation of Crystal Mountain, as required under the terms and conditions of the Special Use Permit. My decision to choose the Selected Alternative for implementation is based on the site-specific analysis contained in the FEIS. I have determined that all practical means to avoid or minimize environmental harm have been adopted. Approval of projects is contingent upon successful mitigation and monitoring results.

## 2.3 Implementation of the Decision

In order to insure that project implementation is carried out consistent with the Management Requirements, Constraints and Mitigation Measures, monitoring requirements, management plans and conditions established by other agencies, I have decided to **specify the process that will be used for planning, designing and construction of project components.**

### 2.3.1 *Annual Construction Plan*

Each year, an Annual Construction Plan will be submitted to the Forest Service, identifying which construction and restoration projects from the Selected Alternative will be scheduled for implementation in the subsequent year (see Table ROD-2). The Annual Construction Plan will include as much project detail as available at the time of submittal, including anticipated construction windows and sequencing for each project. The Annual Construction Plan will be used by the Forest Service and involved regulatory agencies during the permitting process, and will also serve as the basis for the detailed construction plans that will be developed during the planning and permitting process. Due to the length of time necessary for agency coordination and permit acquisition, the Annual Construction Plan will be submitted to the Forest Service 12 to 18 months before the construction activities are scheduled to begin.

Table ROD-2, on the following page, shows the project phasing for the Selected Alternative. Note that Year 0 represents the year this Record of Decision was issued; Year 1 is the first year of implementation.

**Table ROD-2  
Crystal Mountain Project Phasing for the Selected Alternative**

Facility	Construction Year <sup>a</sup>	Phase
Campbell Basin Restaurant (USDA, MBSNF 1997) <sup>b</sup>	0	1
Trail improvements Forest Queen pod (USDA, MBSNF 1997) <sup>b</sup>	0	
Restoration projects from previous EAs <sup>b, c</sup>	0	
90 acres night lighting Forest Queen pod (USDA, MBSNF 1997) <sup>b</sup>	1	
Summit drainfield (USDA, MBSNF 1990) <sup>b</sup>	1	
Wastewater treatment infrastructure (piping)	1	
Power upgrade	1	
T-1 ( <i>Summit Tram</i> )	1	
Summit House	1	
Employee housing phase 1	1	
Wastewater treatment facility	2	
C-12 ( <i>Park N' ride</i> ) and associated trails	2	
S-1 ( <i>Ptarmigan Tow</i> )	2	
240,000 gal. water storage tank	2	
Snowmaking infrastructure below 5,100' , Night lighting	2	
Tennis Court Restoration	2	
Remove existing chapel	2	
Base Area Chapel	2	
Hotel construction phase 1	2	
C-14 ( <i>Northway Express</i> ) and associated trails	2	
Lot F Restoration	3	
Lot B Restoration	3	
Silver Creek Stabilization	3	
Hotel construction phase 2	3	
Temporary Trailer - Bullion Basin Base Area	4	2
C-15 ( <i>Bullion Basin</i> ) and associated trails	4	
S-2 ( <i>Pika Tow</i> )	4	
Parking Lot G / RV Spaces	4	
C-13 ( <i>Kelly's Gap Express</i> ) and associated trails	4	
Bullion Basin Lodge – Phase 1	5	
Construct upper base area plaza	5	
Upper base area skier service building	5	
Snowmaking infrastructure above 5,100'	5	
Bullion Basin Parking Structure	6	
Parking Lot H	7	3
Employee housing phase 2	7	
C-8 ( <i>Discovery Express</i> ) and associated trails	7	
C-4 ( <i>Quicksilver Express</i> ) and associated trails	7	
Green Valley Restaurant	8	
Alpine Inn – 130 hotel rooms	8	

<sup>a</sup>Actual project phasing would be contingent upon successful mitigation implementation and monitoring results. Actual project implementation is also contingent upon Crystal Mountain's ability to fund the project. Year 0 represents the year during which the ROD is issued, Year 1 represents the first year of MDP implementation.

<sup>b</sup>Projects that were previously analyzed by the USFS are included in this phasing table to facilitate coordination of previously approved projects with Proposed Action projects to reduce overall ground disturbance.

<sup>c</sup>Following the first year of project implementation, restoration projects will be linked to monitoring results and new construction.

### 2.3.2 *Planning and Permitting*

Once the Annual Construction Plan is approved by the Forest Service, detailed construction plans will be developed for each project. A topographic base map of each project site will be developed at an appropriate scale in order to create construction plans. Sensitive areas (e.g. wetlands, streams, endangered plants) in the vicinity of each project site will be flagged in the field and surveyed, as necessary. In accordance with the Management Requirements, Constraints and Mitigation Measures (refer to Section 11.0), impacts to sensitive areas will be avoided and/or minimized to the greatest extent practicable during the planning and implementation phases. In addition, construction will be scheduled to minimize impacts to soil and watershed resources: construction of facilities involving significant ground disturbance will take place during the dry season (generally summer and fall) to the greatest extent possible.

Once detailed construction documents are developed for each proposed project in the year's Annual Construction Plan, all necessary permits and approvals will be acquired from the appropriate regulatory agencies; see Table ROD-3, on the following page.

A Stormwater Pollution Prevention Plan (SWPPP) contained in the Annual Monitoring Plan will be used to provide documentation for, and to obtain a National Pollution Discharge Elimination System (NPDES) permit for all of the projects in the Annual Construction Plan, as required. The SWPPP will include the development of project-specific Best Management Practices (BMPs). Project-specific Management Requirements, Constraints and Mitigation Measures from Table ROD-4 and permit conditions from all construction permits will be incorporated into construction documents and permit applications when judged necessary by the concerned agencies. Management Requirements, Constraints and Mitigation Measures and other permit conditions that are identified by the regulatory agencies during the permit acquisition process will be incorporated into the Annual Monitoring Plan and the Individual Monitoring Plans (refer to Section 2.3.6 - Implementation of Individual Project Monitoring Plans) for the applicable projects.

Planning and Permitting will be conducted during a 6-12 month period prior to the construction season. Due to the 12 to 18 month timeframe required for planning and permitting, it is expected that the planning for future construction years will coincide with active construction from previous years.

**Table ROD-3  
Summary of Permits, Approvals, and Consultation for the Crystal Mountain MDP**

Agency	Action/Regulation	Description of Permit/Action
<b>Federal:</b>		
U.S. Army Corps of Engineers (USACE)	USACE Permit under Section 404 of the Clean Water Act (USC 1344)	Authorization for discharge of dredged/fill material into wetlands and other waters of the U.S.
Environmental Protection Agency (USEPA)	Clean Air Act, as amended, 42 USC Section 7410-762 (PL 95-604, PL 95-95)  Federal Water Pollution Control Act, as amended by the Clean Water Act (USC 1344)  National Pollution Discharge Elimination System Permit  Safe Drinking Water Act, 452 USC Section 300F-300J-10 (PL 93-523)	Provide review and comments on the federal action.  Provide information and technical assistance in the analysis.  Stormwater Permit for stormwater discharges at construction sites.
U. S. Fish and Wildlife Service (USFWS)	Section 7 Consultation and Biological Opinion USACE Section 404 Permit Consultation	Protection of Threatened and Endangered Species.
NOAA - Fisheries	Section 7 Consultation and Biological Opinion USACE Section 404 Permit Consultation	Consultation under the Fish and Wildlife Coordination Act.
<b>State:</b>		
Washington Department of Ecology (WDOE)	Water Quality Certification (Clean Water Act Section 401)  Permit to Withdraw or Divert Surface or Ground Water  Waste Discharge Permit – Reclaimed Water (in conjunction with Department of Health)  Change of a Water Right	State approval to USACE for discharge to surface waters  Authorize withdrawal of surface or groundwater.  Authorize the application of reuse water in the snowmaking process.  Changing an existing water right, certificate, or claim.
Washington Department of Fish and Wildlife (WDFW)	Hydraulic Project Approval	Authorize development activities within waters of the U.S..
Washington State Office of Archaeology and Historic Preservation	Section 106 of the National Historic Preservation Act	Determination of effects to Cultural/ethnic resources
<b>Local:</b>		
Pierce County Code Compliance	Building Permit  Land Disturbance Permit	Authorize construction of buildings, wastewater treatment facilities.  Authorize land disturbance activities in the CMB right-of-way.
<b>Other:</b>		
Muckleshoot Tribe	Ethnographic Survey Coordination	Coordinate with the Muckleshoot Tribe in the completion of an ethnographic survey consistent with the National Historic Preservation Act.



### 2.3.3 *Annual Monitoring Plan*

The Annual Monitoring Plan will include:

- a summary of the projects in the Annual Construction Plan;
- a list of permit conditions and applicable Management Requirements, Constraints and Mitigation Measures (see Table ROD-4) to be applied in each project;
- a SWPPP for all of the projects in the plan (as required); and
- guidelines for the site scale and watershed scale monitoring to be performed in the subsequent construction year, as specified in the Monitoring Framework Plan (Appendix D of the Final EIS).

The Annual Monitoring Plan will also combine the elements of the Individual Monitoring Plans (refer to Section 2.3.6 - Implementation of Individual Project Monitoring Plans) for all of the projects to be implemented in the upcoming construction year so that monitoring efforts can be organized in an efficient manner.

The Annual Monitoring Plan will be completed 3-6 months prior to construction season; it will be approved by the Forest Service prior to construction activities.

### 2.3.4 *Construction Implementation and Monitoring*

Once the necessary permits and approvals are obtained and the Annual Monitoring Plan has been reviewed and approved by the Forest Service, construction will begin, in accordance with the approved construction documents, conditions outlined in agency permits, the Individual Monitoring Plans, and the Annual Monitoring Plan. Generalized construction techniques for the projects contained in the Selected Alternative are described in Section 2.3.1.3 – Construction, beginning on page 2-5, FEIS. Detailed construction plans that outline site-specific engineering and construction techniques will be developed during the planning and permitting process.

Site scale and watershed scale monitoring specified in the Annual Monitoring Plan will ensure that permit conditions and the Individual Monitoring Plans are being followed properly for all projects during the construction year. Erosion control and water quality monitoring will be performed according to the Annual Monitoring Plan during the active construction phase, and will be discontinued once the construction is complete and the sites have been declared stabilized by the Forest Service. Monitoring efforts for all construction and restoration projects will be tracked in a database to ensure that all monitoring requirements permit conditions, and Management Requirements, Constraints and Mitigation Measures are implemented in an organized and efficient fashion. Finally, watershed-scale monitoring will be performed to determine if the combined effects of the construction projects result in observable, detrimental effects at the watershed scale.

### 2.3.5 *Annual Monitoring Report*

Subsequent to the construction season, the Annual Monitoring Report will include a summary of the results of the previous years' monitoring efforts and recommendations for additional restoration or stabilization for the Annual Construction Plan in following years. Information from the Annual Monitoring Reports could be used by Crystal Mountain and/or the Forest Service to alter or supplement the current list of Management Requirements, Constraints and Mitigation Measures (Table ROD-4). Recommendations from the monitoring report will be incorporated into Annual Construction Plan during the planning and permitting process. If the Annual Monitoring Report indicates that detrimental effects are evident at the site or watershed scale, the Forest Service may elect to withhold approval of subsequent construction phases until mitigation and monitoring indicate that the effects have been reduced to an acceptable level. Similarly, other regulatory agencies may elect to halt onsite activities to insure that permit conditions are satisfactorily met.

### 2.3.6 *Implementation of Individual Project Monitoring Plans*

Individual Monitoring Plans that are prepared for each project will go through a planning stage, an implementation and monitoring stage, and a stabilization stage. As shown in the phasing table (Table ROD-2), the construction of facilities at Crystal Mountain will consist of groups of discrete projects planned for each construction year, over an eight - year timeframe. This staging approach will minimize the area of open ground to that necessary for the installation of phased ski facilities, while allowing for simultaneous restoration of previously developed areas.

#### 2.3.6.1 *Preparation of Individual Monitoring Plans*

Planning for individual projects (including restoration projects) will be initiated 12 to 18 months before the Annual Monitoring Plan is implemented for each construction year. During the planning process for individual projects, the following documents will be consulted to determine whether specific restoration or monitoring projects will be initiated by that individual project:

- Watershed Restoration Plan (FEIS Appendix C)
- Monitoring Framework Plan (FEIS Appendix D)
- Road Management Plan (FEIS Appendix E)
- Vegetation Management Plan (FEIS Appendix F)
- Silver Creek Bioengineering (FEIS Appendix I)
- Stormwater Management Plan (FEIS Appendix M)

In addition, the Management Requirements, Constraints and Mitigation Measures (Table ROD-4) will be consulted to identify project-specific measures that are to be incorporated into the Individual Monitoring Plan. The Individual Monitoring Plan will include all appropriate project-specific elements from the Monitoring Framework Plan and the

Watershed Restoration Plan, an erosion control plan (SWPPP), a spill prevention plan, and any permit conditions required by site-specific permits.

Each Individual Monitoring Plan will identify a Monitoring Plan coordinator (either a Forest Service staff representative or person approved by the Forest Service) for the construction of the project at Crystal Mountain. This individual will oversee the implementation of the Individual Monitoring Plan, conduct or oversee daily site inspections to ensure effectiveness of BMPs, and perform any necessary maintenance on structural BMPs. The Monitoring Plan coordinator will also identify any deficiencies of the Individual Monitoring Plan before and during construction and ensure that they are corrected; ensure that any changes to the construction site plans are addressed in the Individual Monitoring Plan; and ensure that any new BMPs required to address the changes are implemented.

A pre-construction inspection will be performed before any construction or earthwork can be initiated. Attendees will include appropriate Crystal Mountain staff, Forest Service staff, the Monitoring Plan coordinator, and contractors, as appropriate. The purpose of the pre-construction inspection is to ensure that all of the structural BMPs identified in the Individual Monitoring Plan have been installed and are working properly prior to groundbreaking. In addition, any necessary water quality monitoring stations will be identified and water quality measurements will be taken, to establish baseline conditions. Water quality monitoring for an Individual Monitoring Plan will be coordinated with the Annual Monitoring Plan to streamline data collection and management. Once the structural BMPs at a project site are functioning properly, project construction can proceed. The Individual Monitoring Plan will identify contingency BMPs to be implemented if site inspections indicate that some BMP structures or policies are not functioning properly, or are not effectively minimizing erosion leaving the project site. Different scenarios and contingency BMPs will be decided upon prior to construction.

It is anticipated that the development of Individual Monitoring Plans, including mitigation and monitoring, will have significant amounts of overlap during each construction year. As a result, coordination for multiple projects will be consolidated in the Annual Monitoring Plan in order to insure consistent and efficient oversight from the Forest Service, other agencies, Crystal Mountain, and any consultant specialists.

#### 2.3.6.2 Construction Phasing for Individual Projects

Prior to the construction of a project, all of the appropriate BMPs listed in the Individual Monitoring Plan will be installed and extra erosion control materials will be staged on-site. The BMPs will generally be arranged in the order that they should be implemented. Structural BMPs are to be installed before construction starts or as needed while construction is ongoing. Procedural BMPs are to be followed during the construction of the project. Implementation of contingency BMPs will occur, if they are deemed necessary (when site inspections indicate that some BMP structures or policies are not functioning properly, or not effectively minimizing erosion leaving the project site).

### 2.3.6.3 Individual Monitoring Plan Site Inspections

During project implementation, a Site Inspection Report will be filled out during weekly site inspection and after significant rainfall events, as defined in the Annual Monitoring Plan. A site inspection involves visually inspecting all structural BMPs within the project site to make sure that they are installed correctly and functioning properly. After significant rainfall events, water quality samples will be taken at specified locations within 24 hours of such event, to ensure that there are no water quality exceedences and that all BMPs are functioning as intended. The Site Inspection Report will be completed by the Monitoring Plan coordinator or someone approved by the Forest Service.

### 2.3.6.4 Site Stabilization

The project site will be permanently stabilized after the project has been completed. Inspection of the completed project site will be performed by the Forest Service to determine if site is stable, and that the Individual Monitoring Plan has been carried out to completion. If the project site has not been stabilized properly, the Individual Monitoring Plan will then be considered still active, and monitoring will continue until the site has been properly stabilized and approved by the Forest Service. **If monitoring indicates that the site stabilization has not been successfully completed, then the Forest Service may elect to withhold approval of subsequent construction phases until mitigation and monitoring indicate that stabilization has been completed.**

## 3.0 REASONS FOR THE DECISION

I considered a number of factors in making my decision, including: the project purpose and need; issues raised during scoping; Forest Plan management direction; relevant laws, regulations, and policy directives; the environmental impacts of the proposed projects; and comments received from the public. I believe the Selected Alternative achieves the best balance in meeting public expectations for quality alpine skiing and year-round opportunities and dispersed recreation on the MBSNF, and maintaining the competitive viability of Crystal Mountain within their market niche, while minimizing or avoiding potential environmental impacts through environmentally sensitive planning, effective mitigation measures, and monitoring requirements. My detailed reasons for selecting Alternative 6 with modifications are provided in the following sections.

### 3.1 Alternative 6 with Modifications Provides the Best Balance in Meeting the Purpose and Need

The Selected Alternative will meet the purpose and need better than any other alternative considered (refer to Section 1.1.2.3, FEIS, Purpose and Need).<sup>1</sup> Alternative 6 with

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<sup>1</sup> A summary of the purpose for the MDP proposal: 1) provide facilities necessary for an enjoyable year-round recreation experience, which will ensure long-term economic viability of Crystal Mountain by

modifications will help meet Forest Service management direction and policy to provide alpine skiing opportunities on the MBSNF, and will also allow Crystal Mountain to satisfy their current winter visitors' expectations and provide a recreational offering in the summer. I believe that the Selected Alternative, with the incorporation of the modifications described in this ROD Section 2.1, will best address the need to maintain or improve the watershed condition. The following discussions elaborate on my rationale for selecting Alternative 6 with modifications as best meeting the need for the Crystal Mountain MDP. Refer to FEIS, Section 1.1.2.3, page 1-10, for a complete description of the need for action.

*The Selected Alternative meets the need to reduce congestion in the base area:*

The addition of a second base area (Bullion Basin Base Area), with a new parking structure and additional guest service facilities, will reduce base area congestion and improve the experience of the Crystal Mountain guest (refer to FEIS, Section 4.3.2.7, page 4-435). Compared to all other alternatives considered, a higher percent of visitors to Crystal Mountain will have a comfortable walking distance to ski area facilities from parking areas (despite reducing the size of Parking Lot F to restore Riparian Reserves along Silver Creek (See Table ROD-5, Transportation). I believe that my decision to include Bullion Basin parking structure and second base area will substantially reduce base area congestion during arrival and departure times. With two base areas to choose from for a variety of guest services, base area congestion will be reduced.

My decision also includes additional restaurant seats throughout the ski area. The construction of food service seating in the Bullion Basin Base Area, Green Valley Restaurant, and the Summit House will augment the current restaurant seating. These new facilities, along with the new High Campbell Restaurant (approved through an earlier NEPA analysis), will provide several on-mountain options for food service, resulting in reduced crowding in the base area and on the ski trails leading to the base area, (see FEIS Section 4.3.2.7, Alternative 6, page 4-435).

Finally, I believe that the completed development in the *Bullion Basin* pod will provide greater dispersal of skiers in the SUP area and improve the recreation experience for the majority of Crystal Mountain skiers. My decision approves development of C-15 (*Bullion Basin Express*) in the alignment of the previous chairlift. **However, the previously-developed trails will be widened and re-contoured to provide a more suitable ski pod, compared to the previous development in the area.**<sup>2</sup> I believe that this lift and trails will be successful, due to the improvements and also because of the bottom terminal location in the Bullion Basin Base Area. As a component of the out-of-base lift capacity

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maintaining the competitive position of Crystal Mountain with other ski areas in the local and regional market; and maintain; and 2) take advantage of opportunities to restore the condition of the Silver Creek watershed and be consistent with the direction in the Forest Plan, as Amended.

<sup>2</sup> The previous chairlift in the Bullion Basin area, installed in 1974, minimized the level of development associated with the construction of the trails, which resulted in narrow, off-fall line trails with a rough ground surface that did not hold snow well. In 1983, when Crystal Mountain was required to provide lift access to the Gold Hill community, the lift was moved to the current C-7 (Gold Hills) configuration. (See FEIS, Section 3.3.2 for more history.)

at the new Base Area, I am convinced that the *Bullion Basin* pod will successfully provide much needed intermediate level ski terrain at Crystal Mountain. In conjunction with C-12 (*Park N' Ride*), C-13 (*Kelly's Gap Express*), S-2 (*Pika*), and the new base area, I believe that the completed development in this area will serve as a mini ski area within Crystal Mountain, with a base area and all levels of ski terrain immediately accessible from the base area. This, in turn, will provide greater dispersal of skiers in the SUP area and improved recreational experiences for the majority of Crystal Mountain skiers.

*The Selected Alternative meets the need to update current facilities, which are below ski industry standards:*

I selected Alternative 6 with modifications in part because it best meets the need to update the facilities at Crystal Mountain to meet the public demand for quality recreation (see FEIS Section 3.3.2, page 3-156, and page 3-170 for discussions of the skier market and ski area development trends). My decision to implement the Selected Alternative will provide Crystal Mountain with a long-term Master Development Plan, which will guide the area's growth over the next 10 – 15 years and build upon the projects approved since 1997 to help improve the quality of terrain and facilities at Crystal Mountain.

My decision to authorize the development of a new hotel and an expansion of the Alpine Inn will provide more modern overnight lodging, and will allow Crystal Mountain to capture a larger portion of the regional market during the skiing season (FEIS page 4-413). I have determined that the new accommodations, coupled with additional night skiing opportunities, will also allow more people to stay at Crystal Mountain for longer periods of time, or to come to Crystal Mountain for overnight stays that do not coincide with the peak arrival and departure patterns. I feel that this component of my decision meets the direction in the Forest Plan, as Amended, which provides for upgrading and expansion on the basis of public need, including development focused on “enhancing overnight and mid-week resort opportunities” (1990 MBS Forest Plan, page 4-20). Finally, the incorporation of conference facilities into the new hotel will allow Crystal Mountain to provide year-round, non-skiing related recreation.

Finally, my decision to develop a new wastewater treatment facility to replace the aging system at Crystal Mountain, with tertiary treatment of wastewater and sub-surface disposal, addresses this aspect of the need to update current facilities (refer to FEIS Appendix J).

*The Selected Alternative meets the need to balance the capacities of skier service facilities with lift and trail capacities, including: access to the upper mountain, distribution of terrain, guest services and buildings, and parking:*

Based on the analysis in the FEIS, I have determined that the Selected Alternative will greatly improve the balance of up-mountain access with the demand (i.e., congested base area during the arrival period). My decision includes additional out-of-base access to the upper mountain, which will better balance the access to the upper mountain with the two

base areas. The addition of C-12 (*Park N' Ride*) will allow easy access between the existing base area and the Bullion Basin Base Area (FEIS, Section 4.3.2.7, Alternative 6, page 4-435).<sup>3</sup> Two additional lifts, C-13 (*Kelly's Gap Express*) and C-15 (*Bullion Basin Express*), will serve to optimize the dispersal of guests out of the Bullion Basin Base Area.

My decision will authorize the construction of lifts and trails that will provide much needed low intermediate and advanced intermediate terrain (FEIS Section 4.3.2.7, Alternative 6, page 4-435). Specifically, modifications to C-4 (*Quicksilver*) and installation of C-15 (*Bullion Basin Express*) will provide access to low intermediate terrain (FEIS Table 2.3.3-2, page 2-28). In addition, C-13 (*Kelly's Gap Express*), C-14 (*Northway Express*), and C-15 (*Bullion Basin Express*) will access advanced intermediate terrain. I realize that the additional lifts will also access a wide variety of terrain levels from beginner to expert, but adding access to low- and advanced-intermediate terrain will improve the terrain distribution by ability level.

I specifically decided to **exclude development in the South Country and East Peak areas because I am not convinced that lift access to this terrain would improve the terrain distribution, or that the public demand is adequate for additional, lift-served expert terrain** at Crystal Mountain.

As described in the FEIS, the existing guest service facilities accommodate approximately 55 percent of the capacity of the ski area (FEIS, page 1-14). The Selected Alternative will provide sufficient guest services capacity to match the capacity of the mountain (see FEIS Section 4.3.2.7, page 4-435). However, **I am not convinced that a mountain-top retreat center would greatly enhance the recreational offering at Crystal Mountain; therefore, I have decided not to authorize the construction of such a building.**

I have given a great deal of consideration to the parking situation at Crystal Mountain, and have decided to authorize construction of additional parking, to better meet the need. Currently, available parking is roughly two-acres short of accommodating demand on a peak day (FEIS, page 1-14). The current alignment of parking along Crystal Mountain Boulevard means only one-quarter of guests now park within a comfortable walking distance from base area facilities (see Table ROD-5, Transportation). I have crafted the Selected Alternative to build upon the opportunity afforded by the Bullion Basin Base area by providing for the development of a parking structure and Parking Lot G near the new base area. My decision reduces the size of Parking Lot F (located far from base facilities) to allow for riparian restoration. Overall, the Selected Alternative will result in nearly 74 percent of ski area visitors parking within a comfortable walking distance—nearly the highest percent of alternatives considered (see Table ROD-5, Transportation)

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<sup>3</sup> Currently, those wishing to access the upper mountain must ride C-11 (*Chinook Express*).

*The Decision meets the need to improve the early season snow cover on novice to advanced terrain:*

My decision authorizes Crystal Mountain to install snowmaking infrastructure to provide snowmaking on 32 trails, totaling approximately 254 acres (see Table ROD-1). My decision does not approve a snowmaking storage lagoon, because Crystal Mountain has not obtained the additional water rights to necessitate such a storage lagoon. As described in the EIS (page 2-40), with no additional water right, Crystal Mountain would operate under their existing water rights, and snowmaking would take place in selected locations, such as bare spots or areas with low snow coverage, within the approved 254-acre snowmaking area. By authorizing the expanded snowmaking area, Crystal Mountain will be able to increase snow cover on the lower elevation areas earlier in the season.

*The Selected Alternative will meet the need to increase ski area operating efficiency to a desired optimum level:*

My decision authorizes facilities that are designed to improve access to the Crystal Mountain summit, both during the skiing and non-skiing seasons. Currently, those wishing to access the summit are required to ride multiple chairlifts (C-11 *Chinook Express* and then C-10 *Rainier Express* to the summit, **or** ride C-11 to C-9 (*Forest Queen Express*) and then to C-6 (*High Campbell*). The newly-authorized T-1 (*Summit Tram*) will allow for lift access to the summit directly from the base area, on a year round basis. I believe that summer operations will improve the economic stability of the Crystal Mountain operation by providing income at a time when the area would otherwise be closed. By helping to insure the economic success of Crystal Mountain, the Forest Service will help to insure that a wide range of recreational opportunities continues to be provided in the Crystal Mountain SUP area.

I have given a great deal of consideration to increasing employee housing in the SUP area, including analyzing the availability of employee housing offsite, the distance and drive times to cities and towns that could provide employees, and the current employee housing at Crystal Mountain (total of 85 pillows—see Table ROD-1). By authorizing increased on-site employee housing in this decision (up to a total of 190 pillows), Crystal Mountain will be able to maintain a suitable number of employees onsite to increase the operating efficiency of the area.

I have also decided to authorize additional ski patrol duty stations at the new base area and lifts, as well as additional maintenance facilities, supporting infrastructure and roads—though the Selected Alternative includes the fewest miles of new roads within the SUP area of any alternative analyzed (refer to Table ROD-5, Geology and Soils).

Finally, by eliminating the snowmaking storage lagoon and use of reclaimed water for snowmaking from my decision, less wastewater/snowmaking infrastructure will be required to implement the Selected Alternative, compared to Alternatives 2 through 6 (FEIS).



*The Selected Alternative meets the need for a convenient and quality recreation experience for all site visitors on a year-round basis:*

The decision to approve the T-1 (*Summit Tram*) is based on a number of factors. As noted above, there is currently no direct route to the summit. In the winter, handicapped skiers are required to load and unload on two chairlifts in order to access the summit. Foot passengers are not allowed access to the summit during the ski season. During the non-skiing season, guests must ride two chairlifts to access the summit.

While the tram will serve only a minor function during the winter, Crystal Mountain will be able to operate the tram during the summer and shoulder seasons. With growing visitation at Mount Rainier National Park (MRNP) and no additional development of parking in MRNP, I am convinced that the tram provides an opportunity for Crystal to serve a portion of the public demand for viewing Mount Rainier and the surrounding mountains. Meeting this public demand will also stabilize the cashflow at Crystal Mountain, by providing income during the non-skiing season. As described in Measures TR17 and TR18 (refer to Table ROD-4), Crystal could serve as an alternative destination for MRNP viewing, as well as a partner in the development of a shuttle system for MRNP in the summer and for the ski area in the winter (see cumulative effects project number 19 in FEIS Table 4.3.2-FEIS3 on page 4-442). This partnership opportunity will allow Crystal to provide additional recreation opportunities during the summer.

My decision authorizes the development of 125 new RV spaces in Parking Lot G. The existing RV spaces in Parking Lot B will be abandoned. In making this decision, I felt that it was important to insure that the RV spaces are sited to allow easy access to the ski area facilities, as well as guest services, while providing separation from the base areas. The location in Parking Lot G addresses these concerns. The additional RV spaces will provide space for growth in demand associated with night skiing during the winter, as well as RV camping opportunities in the summer.

*My decision meets the need to maintain or improve the watershed condition by implementing watershed restoration:*

The Selected Alternative includes the management and monitoring plans that are intended to maintain or improve the health of the Silver Creek sub-watershed, and to insure that the authorized development is consistent with applicable standards and guidelines in the Forest Plan, as Amended. These plans include the following:

- Watershed Restoration Plan (FEIS Appendix C)
- Monitoring Framework Plan (FEIS Appendix D)
- Road Management Plan (FEIS Appendix E)
- Vegetation Management Plan (FEIS Appendix F)
- Silver Creek Stabilization (FEIS Appendix I)
- Stormwater Management Plan (FEIS Appendix M)

My decision includes selection of a Stormwater Management Plan for implementation: I have selected construction of the enhanced stormwater ponds, in the locations depicted

on Drawing 200 of the Stormwater Management Plan (FEIS Appendix M), and including a large enhanced pond to the northeast of the Bullion Basin Base Area and parking structure. In conjunction with the restoration of portions of Parking Lot B and the Silver Creek Stabilization (FEIS Appendix I), this enhanced pond represents an opportunity for Crystal Mountain and the Forest Service to demonstrate sound environmental stewardship on public lands.

*The Selected Alternative meets the need to amend the Mount Baker-Snoqualmie National Forest Land and Resource Management Plan.*

By amending the Forest Plan, as Amended, to change the management prescription for approximately 550 acres of NFS lands directly adjacent to the existing SUP boundary from Administratively Withdrawn (MA 3C Developed Recreation, Winter Sports Resorts) and Riparian Reserve to Administratively Withdrawn (MA 1B Dispersed Recreation - Semi-primitive, Non-motorized) and Riparian Reserve (refer to Figure 1.1.2-2, FEIS Volume 3), the management prescription for the parcel will better match with the actual dispersed recreation use of the parcel.

Based on the analysis in the Final EIS, I have determined that Crystal Mountain's current SUP boundary provides sufficient acreage to meet the objectives of Crystal Mountain and the Forest Service in terms of providing recreation to the public on NFS lands. The reallocation of approximately 550 acres from Administratively Withdrawn (MA 3C – Developed Recreation, Winter Sports Resorts) and Riparian Reserve to Administratively Withdrawn (MA 1B – Dispersed Recreation - Semi Primitive, Non Motorized) and Riparian Reserve will be more consistent with the current use of the parcel, and more consistent with the allocation of lands adjacent to this part of the ski area.

Based on my review of the Forest Plan, as Amended, and the analysis disclosed in the FEIS, I have determined that this is a non-significant Forest Plan amendment on the basis of criteria outlined in FSM 1922.51 – *Changes to the Forest Plan That Are Not Significant*. Refer to ROD Section 7.0 - Findings Required by Other Laws and Regulations.

### **3.2 Other Factors Considered – Reasons for the Decision**

Many people suggested that the demand for skiing is insufficient to justify any ski area expansion, in light of a flat skier market. However, the elements of the Selected Alternative all relate directly to meeting skier demand, in terms of visitor expectations and market preferences. Crystal Mountain initiated this project to resolve current shortcomings at the ski area prevent Crystal Mountain from offering a quality recreation experience to their customers. Overcrowded trails, long lift line waits, poor skier circulation, inadequate snowmaking area, and shortages of parking and lodge space have resulted in visitor dissatisfaction with the overall recreation experience (refer to FEIS Section 3.3.2). If the visitors at Crystal Mountain do not have their expectations and preferences met, they may look elsewhere for their winter recreation experience. This could threaten Crystal Mountain's viability and the stability of their business operations

that may prevent them from offering a quality recreation experience on NFS lands into the future.

Existing federal law and Forest Service policy support the use of NFS lands for privately operated ski resorts, through the SUP process, where demand exists and Forest Plan direction allows. My careful review of the FEIS and supporting documents shows that there is a strong demand for skiing at Crystal Mountain, as exhibited by guest surveys, skier preferences, and ski industry standards applied to other ski areas in the regional market in which Crystal Mountain strives to compete. It is in the best interest of the Forest Service for Crystal Mountain to meet current visitor expectations, so that the ski area can remain competitively viable. This, in turn, will help ensure that Crystal Mountain can continue to provide a quality recreation experience on the MBSNF into the future. I have decided that the Selected Alternative meets these objectives, while addressing many recreation issues and minimizing impacts on the biological environment.

The National Ski Areas Association (NSAA) and member ski areas have implemented a strategy for growing skier visitation across the United States<sup>4</sup>. In addition, visitation at a national and regional level has performed well, with record national visitation occurring in 2000-01 (57.3 Million visits) and again in 2002-03 (57.6 Million visits - FEIS Figure 3.3.2-1, page 3-171). The recent visitation trend and NSAA efforts to grow the sport of skiing, coupled with the deficiencies at Crystal Mountain have convinced me that expansion at Crystal Mountain, within the currently allocated SUP area, makes sense.

Based on my review of all alternatives considered in the FEIS, I have determined that the Selected Alternative best meets the Forest Service management objective and policy direction to provide quality alpine skiing opportunities on the MBSNF. Most of the existing deficiencies of the ski area design elements at Crystal Mountain will be best resolved by the Selected Alternative, compared to Alternatives 2 through 6, while still addressing dispersed recreation and watershed restoration in the SUP area. Implementing the Selected Alternative will enable Crystal Mountain to satisfy their current visitor expectations and also position the resort to evolve with a changing skier market. The resulting recreation opportunities provided on NFS lands will maintain Crystal Mountain's ability to compete with other resorts in their market niche and help ensure the current and future stability of their business operations. This stability will enable Crystal Mountain to continue to provide the quality recreation experience the public has grown to expect when they visit the MBSNF.

### **3.3 Applicable Laws, Regulations, and Policies**

I have considered all other relevant laws and regulations applicable to the Crystal Mountain MDP. These include, but are not limited to: the National Environmental Policy Act, the American Indian Religious Freedom Act of 1978; the Multiple Use-Sustained Yield Act of 1960; the Forest and Rangeland Renewable Resources Planning Act of 1974; the Clean Air Act as amended; the Clean Water Act; Protection of Wetlands

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<sup>4</sup> [http://www.nsaa.org/nsaa2002/\\_growth\\_model.asp](http://www.nsaa.org/nsaa2002/_growth_model.asp)

Executive Order 11990; Invasive Species Executive Order 13112; Environmental Justice Executive Order 12898; Protection of Migratory Birds Executive Order 13186; Protection of Floodplains Executive Order 11988; Indian Sacred Sites Executive Order 13007; the National Historic Preservation Act of 1966 as amended; and the Archeological Resources Protection Act of 1979.

In addition, I have considered numerous documents incorporated by reference in the FEIS (see FEIS Section 1.2, page 1-19). I have also considered the environmental effects and consequences disclosed in the FEIS and all comments received during the public involvement process. I have concluded that my decision to approve the Selected Alternative, with the necessary Management Requirements, Constraints, Mitigation Measures and monitoring requirements, meets all applicable laws, regulations, and land policies, and is in the public interest. See Findings Required by Other Laws and Regulations, ROD Section 7, below.

### **3.4 How Environmental Issues and Other Resources Were Considered**

In making my decision, I carefully considered the issues brought forward through the public scoping and DEIS comment process for this project (see FEIS Section 1.5, page 1-35). The following section explains my reasons for selecting Alternative 6 with modifications, in terms of the significant issues addressed in the FEIS. (Also, see Table ROD-5, below.)

*Issue: Scenery Management - Proposed development may affect the scenic quality of the area.*

In my review of Architectural Renderings 1 through 14 (see FEIS Figures, Volume 3), I have determined that the proposed facilities would be consistent with the Cascadian Architectural theme.

My review of Visual Simulations 1C, 2D, 3, 4B, 5, 6, and 7 (see FEIS Figures, Volume 3) has led me to believe that the prescribed Visual Quality Objectives (VQOs) will be met (refer to Table ROD 5).

The Selected Alternative has been designed to reduce visual impacts to those seeking a quality wilderness experience in Mt. Rainier National Park (MRNP), and in the Norse Peak Wilderness. The SUP boundary will be closed to ticketed skiers in order to protect wilderness areas and deter skiers from entering MRNP. All construction associated with the Selected Alternative will occur within the SUP boundary and such activity is consistent with the MA-3C designation of Developed Recreation, Winter Sports Resorts. The Crystal Mountain base area, parking lots, and Crystal Mountain Boulevard will continue to meet the Visual Quality Objective of Modified and the remaining areas within the SUP boundary will continue to meet the Visual Quality Objective of Partial Retention (refer to Table ROD 5).

The proposed Summit House Restaurant will be constructed on the site of the existing Summit House, and will be situated and designed to be visually sensitive as viewed from

MRNP and other key vantage points within the SUP area. All trees to the west of the existing facility will be retained. The building color will blend with adjacent trees and groundcover, and the roofline of the proposed restaurant will be no higher than the existing roofline. The new building will adhere to the Cascadian architectural theme. The only noticeable changes, as viewed from Sunrise Point (MRNP) and vantage points along the eastern SUP boundary (i.e., PCT), would include a wider profile and a decrease in the slope of the roof pitch, extending from either side of the roofline. The new Summit House Restaurant would remain visually subordinate to the surrounding landscape, as viewed from MRNP and vantage points along the eastern SUP boundary.

The Summit Tram will be constructed at the current location of the top terminal of C-10 (*Rainier Express*), which will be moved to provide for the tram. The tram top terminal will extend no higher than the current roofline elevation of the Summit House, making the tram less visible from MRNP (see Figure 2.3.3-6, FEIS, Volume 3). The upper terminal will adhere to the Cascadian architectural theme. Development of the Summit Tram will remain visually subordinate to the surrounding landscape, as viewed from MRNP and vantage points along the eastern SUP boundary.

As the Selected Alternative does not include construction of the Summit Retreat Center, there would be no additional visual effects to MRNP (see FEIS Section 4.3.3.7 – Impacts – Alternative 6, page 4-464).

*Issue: Wilderness - Proposed construction of the East Peak and Silver King chairlifts, along with construction of the tram, may increase use in NPW and MRNP.*

My decision addresses the concerns related to this issue, to a great degree. The Selected Alternative eliminates any development in the East Peak area, which is located close to Norse Peak Wilderness. The *Silver King* chairlift is also eliminated from my decision, which will result in no change from the existing condition in this area, adjacent to MRNP. In addition, I have selected the *Northway Express* alignment (rather than the *Morning Glory* route, included in some alternatives) for the chairlift development in the North Country because this alignment will place the top terminal of the lift on Northway Peak, above Snorting Elk bowl. This area currently provides lift-served skiing via C-3 (*Green Valley*). Even with an administratively closed boundary, I believe that placing skiers in this area from a new lift would pose a lesser impact to the wilderness values in MRNP than the *Morning Glory Express* top terminal alignment. As a result, the boundary along MRNP from Northway Bowl to the northern SUP boundary will experience use similar to the current conditions.

With the current available data in the FEIS, I cannot clearly decide on the effect of C-16 (*East Peak*) on wilderness values or dispersed recreation in the East Peak area. Nor am I convinced that the Bullion Base Area relies on development of the East Peak area for advanced terrain, as C-13 (*Kelly's Gap Express*) provides advanced terrain out of the new base area. My decision eliminates the C-16 (*East Peak*) chairlift, to address concerns over the potential for skiers to enter into Norse Peak Wilderness (which would otherwise be partially mitigated by the boundary closure). This decision also addresses impacts to the

backcountry skiing experience in the East Peak area, adjacent to the Norse Peak Wilderness (see Dispersed Recreation, below).

Under the Selected Alternative, the SUP boundary will be closed to ticketed skiers and enforced by Crystal Mountain, which will minimize the likelihood of ticketed skiers from entering into the MRNP or Norse Peak Wilderness. In addition, Crystal Mountain will fund a winter snow ranger position to work with Crystal Mountain in enforcing the closed boundary policy.

*Issue: Dispersed Recreation – Development of chairlifts in the East Peak, South Country, and North Country areas may negatively affect the existing dispersed recreation use in those areas.*

The FEIS presents the limited data that is available concerning the backcountry skier use patterns in the East Peak area (FEIS pages 3-189 through 3-194). With this limited data, I am unable to determine the effects of C-16 (*East Peak*) on these users. Furthermore, the FEIS does not clearly demonstrate the need for development of additional expert-only terrain in the East Peak area. Without demonstrated, periodic, near-capacity use of C-6 (*High Campbell*), I am not convinced that the *East Peak* lift would receive sufficient use to justify the costs to Crystal Mountain, or the potential impact to backcountry skiers in the area. It is possible that C-15 (*Bullion Basin Express*) will facilitate access to the East Peak area, but I am convinced that the majority of use in the *Bullion Basin* pod will be from intermediate to advanced-intermediate level skiers, and that any additional use in the East Peak area will be insignificant. Therefore, my decision to eliminate the C-16 (*East Peak*) chairlift addresses the issue of dispersed recreation in the East Peak, and will retain the area as hike-to backcountry terrain (FEIS Table 4.3.2-FEIS 1, page 4-393).

My decision not to allow development in the South backcountry area will insure that this area of Crystal Mountain will continue to provide quality lift-served backcountry skiing to those skiers who seek this experience (FEIS Table 4.3.2-FEIS1, page 4-393). With no clear evidence that C-6 (*High Campbell*), which accesses expert-only terrain, exhibits capacity use, I am not convinced of the need to develop a chairlift in the South Country.

My decision to authorize the *Northway Express* alignment will preserve the lift-served backcountry skiing in the Morning Glory Peak and Morning Glory Bowl areas. Also, Crystal Mountain skiers that are skiing in the North Country will be afforded the opportunity to ride the lift and easily access the Green Valley Restaurant. With no development in the Morning Glory area, the Selected Alternative will retain a portion of the backcountry skiing opportunities in this area. Therefore, my decision to authorize the *Northway Express* alignment addresses the issue of lift-served backcountry skiing in the North Country, by allowing for both developed and backcountry use in the North Country (see Final EIS Table 4.3.2-FEIS1, page 4-393).

My decision not to authorize development in the South Country will maintain the current avalanche control practices in the area, which allow for lift-served backcountry skiing

when the area has been patrolled. Similarly, my decision not to authorize development in the East Peak area will maintain the current uncontrolled status of the area.

*Issue: Stream Channels and Floodplains – The potential exists for proposed projects to impact stream channel and floodplain characteristics.*

The Selected Alternative addresses impacts to streams and floodplains by providing the *Northway Express* alignment for the chairlift and trails in the North Country. Under this alignment, the lift and trails would require less clearing and grading in Riparian Reserves, when compared to other alternatives with development in the North Country (see FEIS, Section 4.2.3.8, Alternative 6, page 4-89). On this basis, the Selected Alternative minimizes impacts to riparian vegetation and recruitment of LWD in the North Country.

As described in this ROD, Section 2.1, the Selected Alternative also addresses impacts to stream channels and floodplain by incorporating components of Alternative 5: Parking lots I, J, and K (along Silver Creek) will not be developed; the existing tennis court (Proposed Parking Lot K) will be restored to a riparian condition. By not authorizing the widening of *Boondoggle*, I believe that a significant impact to Riparian Reserves and Henskin Creek will be avoided. The restoration of Parking Lots B and F will reduce the area of Riparian Reserves in a developed condition along Silver Creek, further protecting Silver Creek. Implementing this decision will result in the fewest acres (74.7 acres) of Riparian Reserve in a developed condition, compared to all action alternatives (see Table ROD-5, Riparian Reserves).

The elimination of additional snowmaking withdrawals from the Selected Alternative will insure that instream flows in Silver Creek are not decreased below acceptable levels. The riparian restoration, described above, along with implementation of the Watershed Restoration Plan (Final EIS Appendix C), Monitoring Framework Plan (Final EIS Appendix D), Road Management Plan (Final EIS Appendix E), Vegetation Management Plan (Final EIS Appendix F), Silver Creek Stabilization (Final EIS Appendix I), and Stormwater Management Plan (Final EIS Appendix M) will insure that watershed conditions do not significantly augment streamflow in Silver Creek. These plans will also provide for sufficient watershed health to protect stream, channels and floodplains

*Issue: Soil Quality – The proposed project has the potential to impact long-term soil productivity (soil quality) through physical disturbances and changes in organic matter levels.*

By eliminating the development of a snowmaking storage lagoon in the Selected Alternative, the total impact to soil quality from roads and other ski area development will be 122.5 acres, which is lower than Alternatives 2 - 6 (Table ROD-5).

As described in the FEIS, Section 4.2.2.8 – Impacts – Alternative 6 (page 4-36), the total area in detrimental soil conditions will be well under the 20 percent threshold (at approximately 3 percent). With a road network of 15.83 miles and a road density of 2.26 miles per square mile, the Selected Alternative will result in fewer road miles and a lower

road density than any of the action alternatives (see Table ROD-5), due to my decision not to authorize development in the East Peak area. My decision will result in no change from the current condition in the number of stream crossings by open and inactive roads (Table ROD-5, Geology and Soils).

*Issue: Water Quantity and Quality - The proposed project has the potential to alter stream/groundwater discharge along with the potential to alter water quality.*

As described in this ROD, the Selected Alternative addresses impacts to water resources and water quality by incorporating components of Alternative 5. Specifically, the Selected Alternative does not authorize the development of Parking Lots I, J and K, which were proposed to be developed along Silver Creek, and the existing tennis court (Proposed Parking Lot K) will be restored to a riparian condition. By not authorizing the widening of *Boondoggle* I believe that a significant sediment impact to Henskin Creek will be avoided. The restoration of Parking Lots B and F will reduce Riparian Reserves in a developed condition along Silver Creek, further protecting Silver Creek from runoff and sediment delivery.

The riparian restoration, described above, along with implementation of the Watershed Restoration Plan (Final EIS Appendix C), Monitoring Framework Plan (Final EIS Appendix D), Road Management Plan (Final EIS Appendix E), Vegetation Management Plan (Final EIS Appendix F), Silver Creek Stabilization (Final EIS Appendix I), and Stormwater Management Plan (Final EIS Appendix M) will insure that watershed conditions do not contribute to degradation of water quality in Silver Creek.

My decision to select the enhanced treatment train for stormwater management (see Final EIS Appendix M) will provide the most effective option from the perspective of water quality protection, economic concerns, and loss of parking space. The stormwater management facilities will reduce the likelihood of sediment delivery, as well as transport of petroleum related pollutants to streams.

By not authorizing the use of reclaimed water for snowmaking in favor of sub-surface disposal, my decision will help to insure that water quality in Silver Creek (i.e., nutrients, BOD, fecal coliform) is not affected by wastewater effluent.

*Issue: Fisheries - The proposed project has the potential to impact fish species and their habitat.*

My decision to incorporate the riparian components of Alternative 5 into the Selected Alternative will reduce impacts to soils and water resources, as described above (see also FEIS Section 4.2.6.7 - Impacts Alternative 5, page 4-280), and thus, to fish in the Crystal Mountain SUP area. I considered the existing and potential distribution of bull trout and Chinook Salmon, and the May Affect, Not Likely to Adversely Affect determinations on these species in the Biological Assessments, and the concurrence with these determinations in a Biological Opinion from the USFWS and a letter of concurrence from



NOAA Fisheries (refer to Section 7.3 – Endangered Species Act). By authorizing the Silver Creek Stabilization Plan (Final EIS Appendix I), fish habitat conditions in Silver Creek will be improved over existing conditions (see Final EIS Table 4.2.6-2, page 4-273).

*Issue: Riparian Reserves - The proposed project has the potential to affect the amount and function of Riparian Reserves within the ski area.*

In considering the impacts to Riparian Reserves, I evaluated the effects on stream channel and floodplains and water quantity and quality (see above).

By including the riparian components of Alternative 5 into my decision, the impacts to riparian reserves will be less under the Selected Alternative than under Alternatives 2 - 6 (Table ROD-5). The Selected Alternative is consistent with the Standards and Guidelines for Riparian Reserves in the Northwest Forest Plan (see Table ROD-5 and Final EIS Section 4.2.7.1, page 4-295).

*Issue: Heritage Resources, Treaty Rights and Privileges - The chairlift development, ski trail clearing, and increased summer and winter use that would potentially occur under the Proposed Action may affect historical and traditional cultural places of importance to the Muckleshoot Tribe. Also, the vegetation removal in the Proposed Action may affect the exercise of hunting, fishing, and gathering rights.*

The SHPO has provided concurrence with the eligibility findings in the FEIS with the exception of the Cascade Crest Trail (see FEIS Table 3.3.1-1, page 3-149 and Table 3.3.1-2, page 3-153).

Modification of Alternative 6, which resulted in the Selected Alternative, will decrease the potential for disturbance to several heritage sites. Specifically, my decision not to construct the *East Peak* chairlift results in no visual effects to the Cascade Crest Trail, a potentially eligible heritage resource. My decision to implement the removal of portions of Parking lots B and F reduces the chances of effects to Traditional Cultural Heritage Resource sites CRY-04 and 05 (refer to Table 3.3.1-2, FEIS page 3-153) that could otherwise result from sedimentation and flow changes to Silver Creek.

The analysis in the Final EIS indicates that the Action Alternatives may have a disproportionate effect on the Muckleshoot Indian Tribe (MIT) with regard to hunting, fishing, gathering, spiritual pursuits and culturally important areas (see FEIS Section 4.3.4.1 - Environmental Justice, page 4-470). Based on formal government to government meetings with the MIT, I have carefully considered these concerns. In this decision, I am implementing HR1 – HR7 (refer to Table ROD-4 in Section 11.0 of this document) in order to minimize these effects.

The Selected Alternative will not abrogate or affect the exercise of Treaty-reserved Indian rights, and therefore will have no direct effect on these rights. Effects to resources and harvest opportunities associated with the Selected Alternative are fully analyzed in

the Final EIS (refer to Final EIS Sections 4.2.3 – Water and Watershed Resources, 4.2.4 – Vegetation, 4.2.5 – Wildlife, 4.2.6 – Fisheries, 4.3.1 – Heritage Resources and Reserved Indian Rights, 4.3.4 – Social and Economic Factors, and 4.3.5 – Transportation).

*Issue: Transportation -Development of the proposed master plan would increase the amount of traffic on Highway 410 and Crystal Mountain Boulevard.*

My decision not to authorize development in the East Peak area results in a comfortable carrying capacity of 9,740 under the Selected Alternative, which is lower than Alternatives 2 - 6 (Table ROD-5). As a result, the Selected Alternative will result in lower peak hour traffic volumes than Alternatives 2 - 6 (Table ROD-5). Weather conditions and the capacity of Crystal Mountain Boulevard serve to meter traffic leaving Crystal Mountain (see Final EIS page 3-240-241). Therefore, Crystal Mountain volumes under the Selected Alternative are not projected to impact SR 410 (the capacity of the highway is about 2,600 vehicles per hour - Final EIS page 4-516).

With a capacity that is lower than Alternatives 2 - 6, less parking is required to accommodate the lower capacity, as compared to Alternatives 2 - 6 (Table ROD-5). The Selected Alternative will provide 73.7 percent of parking within a comfortable walking distance of base area facilities, which is higher than Alternatives 2 - 4 and Alternative 6 (Table ROD-5).

My decision to approve the Selected Alternative will spread the use of Crystal Mountain over time, in order to reduce the current traffic during the peak hours of 8 AM and 3 PM (refer to FEIS Table 4.3.5-3, page 4-508. For instance, the Selected Alternative increases the total capacity for night skiing by 3,400 skiers and provides overnight lodging for 690 additional guests, which will serve to reduce peak arrival and departure volumes, as Crystal Mountain guests will have more flexibility in their skiing schedule.

The Selected Alternative provides Management Requirements, Constraints and Mitigation Measures listed in Table ROD-4 (refer to Section 11.0 of this document). My approval of these measures will help to increase safety for travelers and alleviate traffic congestion. Specifically, Measure TR1 will target night ticket sales earlier in the afternoon and overlap day ticket hours later in the afternoon to promote off-peak arrivals and departures. Measures TR19-21 require that Crystal Mountain mitigate its contribution to the poor operation at several key intersections through a pro rata contribution toward improvements at these intersections, if such improvements are proposed.

*Issue: Adjacent Communities - Implementation of the Proposed Action may affect areas/communities outside National Forest System Lands.*

The Selected Alternative will produce an increased measure of social and economic impacts, through increased employment (Final EIS Table 4.3.4-3, page 4-478 and Table 4.3.4-4, page 4-480), increased visitation and increased visitor spending throughout the impact area (Final EIS Table 4.3.4-5, page 4-482). Specifically, the Selected Alternative

will provide over 1,000 Full-time Equivalent (FTE) construction related jobs, and over 850 long-term, FTE jobs in the area. In addition, The Selected Alternative is projected to almost double the visitor spending in the area.

In addition, the traffic impacts on the adjacent communities will be reduced, as compared to Alternatives 2 - 6 (described above and in Table ROD-5).

*Issue: Air Quality – Development of the proposed MDP may affect Air Quality.*

As described in Final EIS Table 4.2.8-4 (page 4-350), all of the Alternatives 2 - 6 meet the National Ambient Air Quality Standards for carbon monoxide (CO), particulate matter less than 2.5 microns in diameter (PM2.5) and ), particulate matter less than 10 microns in diameter (PM10). My decision to approve the Selected Alternative, with a lower CCC than Alternatives 2 - 6, the Selected Alternative will result in lower air quality impacts.

*Issue: Wildlife Habitat and Disturbance -- The abundance, distribution, structure, and function of habitat for the identified wildlife species may be altered as a result of the proposed ski area projects. Also, the proposed, increased year-round recreation use may affect wildlife use of the area.*

The USFWS provided a letter of concurrence and Biological Opinion for listed species, including concurrence with the following findings by the Forest Service and based on the Selected Alternative:

- Northern Spotted Owl – No effect
- Marbled Murrelet – No Effect
- Bald Eagle – No Effect
- Grizzly Bear – May Affect, Not Likely to Adversely Affect
- Gray Wolf - May Affect, Not Likely to Adversely Affect
- Canada Lynx – May Affect, Not Likely to Adversely Affect

The actions I have approved will result in relatively minor effects on the wildlife communities within the permitted area and adjacent areas. Under the Selected Alternative, the currently undeveloped East Peak and Silver King areas will remain undeveloped, allowing for dispersed recreation in these areas. Expansion of new lifts and terrain will take place largely in areas that have been previously disturbed, or in areas that are immediately adjacent to disturbed sites.

As shown in Table ROD-5, the Selected Alternative will eliminate less riparian vegetation than Alternatives 2 - 6 (see also FEIS Table 4.2.5-1, page 4-150), and generally eliminate less wildlife habitat than Alternatives 2 - 4. The Selected Alternative will result in the least impact to elk habitat when compared to Alternatives 2 - 6 (Table ROD-5, see also FEIS Table 4.2.5-10, page 4-175).

With the Selected Alternative, there is potential for disturbance to wildlife habitat. However, the Management Requirements, Constraints and Mitigation Measures I am requiring will largely eliminate most of the adverse effects. Specifically, W1 will restrict the removal of snags and down woody material; W4 provides a window of construction to minimize impacts to olive-sided flycatchers, and W6 avoids potential impacts to nesting spotted owls and marbled murrelets (refer to Table ROD-4 in Section 11.0 of this document).

The increased year-round use at Crystal Mountain has the potential to affect numerous wildlife species. The Management Requirements, Constraints and Mitigation Measures included in my decision are designed to reduce impacts to wildlife resulting from summer visitation at Crystal Mountain. For example, W5 requires the development of an educational program to encourage observation of wildlife and to discourage harassment and feeding of wildlife; W7-12 direct Crystal Mountain to reduce the potential for harassment of elk, particularly during calf season; and W14 requires the implementation of a closed ski area boundary to protect mountain goats (refer to Table ROD-4 in Section 11.0 of this document).

My decision to approve 29.9 acres of additional night skiing (including Trail 4B – *Boondoggle*, which would not be widened under the Selected Alternative) would not significantly affect nocturnal species, such as Canada Lynx, because the night lighting would be added to existing terrain that is already fragmented (Final EIS, page 4-168). I have included a management requirement that requires the installation of directional night lighting, specifically designed to reduce ambient reflection or night glare, which will reduce potential impacts to nocturnal animals (Table ROD-4, W2).

Additional traffic on SR 410 will result from implementation of the Selected Alternative. The resulting annual mortality to elk is among the lowest, when compared to Alternatives 2 - 6, based on the comparative elk mortality model, which determined that there would be an increase in annual mortality of 18.3% due to additional traffic on SR 410, and based on a current population size of 600 animals. This increase translates to an average of 8.9 traffic related elk deaths per year<sup>5</sup>.

In addition to traffic-related impacts, elk and elk habitat will be negatively impacted by increased use of the area and the development of facilities. Also, there would be an impact resulting from the minor changes in forage and cover (see Table ROD-5). Overall, these impacts are not expected to significantly impact the elk population or adequacy of elk habitat in the White River drainage.

### **3.5 Changed Effects Based Upon Alternative 6 with Modifications**

The estimated environmental effects of implementing the Selected Alternative will be similar to those effects described for Alternative 6, FEIS, with certain changes, resulting from my modifications. Table ROD-5 (see ROD Section 12, below), presents a

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<sup>5</sup> Based in part upon unpublished work © 2002 Muckleshoot Indian Tribe. This research is one part of a collective work in progress with conclusions subject to revision as data are accumulated and refined.

comparison of environmental effects for all alternatives, including the Selected Alternative. The following describes the changes to effects resulting from my decision.

### *3.5.1 Snowmaking Storage Lagoon*

My decision not to include snowmaking storage in an up-mountain lagoon at the base of Avalanche Basin is based on the denial of additional water rights by the Washington Department of Ecology. With no additional water rights, Crystal Mountain will have no need to store water for snowmaking. As described in the FEIS (Section 4.3.6.2, Impacts Common to All Action Alternatives, page 4-536), the Crystal Mountain MDP could be implemented without additional water rights.

My decision authorizes the expansion of the snowmaking system at Crystal Mountain to include 253.9 acres of terrain. However, with no withdrawal or storage of snowmaking water, Crystal Mountain will apply less man-made snow over the approved terrain. Under the Selected Alternative, snowmaking will serve as a means of "patching" areas of low snow coverage.

Because no lagoon will be developed, the Selected Alternative requires less road mileage (elimination of an access road) and less development in Riparian Reserves.

### *3.5.2 Restoration Projects*

My decision includes reducing the size of existing Parking Lots B and F to allow for restoration along Silver Creek, and thus reducing development in Riparian Reserves directly adjacent to Silver Creek. The effects to Riparian Reserves, as well as stream channels in these areas, would be as described for Alternative 5.

### *3.5.3 Parking Lot Construction*

My decision changes the timing of some parking lot construction, compared to Alternative 6 (see FEIS, Table 2.6-1, 2-97), so that no new parking will be developed until the initiation of parking lot restoration along Lots B and F, as well as the Silver Creek stabilization (see FEIS, Appendix I). I believe that restoration along Silver Creek and its Riparian Reserves must be completed prior to the development of additional parking, in order to insure that watershed conditions are maintained or improved.

Crystal Mountain will be authorized to build Parking Lot G and the RV space in preparation for the loss of parking (including loss of some existing RV spaces) associated with the restoration of Silver Creek. In addition, the Bullion Basin Base area construction will reduce the size of Parking Lot B. Parking Lot G will provide a seamless transition for RV campers, and will maintain sufficient parking within a comfortable walking distance of the base area. Finally, my decision that Parking Lot H will be built after construction of Bullion Basin Parking Structure, and based on a demonstrated need, will insure that additional parking is not constructed unless the need is demonstrated, thereby protecting 2.7 acres of Riparian Reserves.

### 3.5.4 *Eliminate East Peak Development*

My decision not to allow the development of a lift and trails in the East Peak area will result in lower road mileage in the SUP area (elimination of East Peak access road), as well as the maintenance of a key hike-to backcountry skiing area. I estimate that for this aspect of the Selected Alternative, the environmental effects will be similar those of Alternative 3.

### 3.5.5 *Trail 4B - Boondoggle*

The Selected Alternative does not include the widening of *Boondoggle* because of my concerns over impacts to Riparian Reserves along Henskin Creek. The resulting impact of the Selected Alternative on this ski trail will be similar to that disclosed for Alternative 5.

## 4.0 PUBLIC INVOLVEMENT

In accordance with the NEPA and Forest Service policy, public and other agency involvement was initiated early in the environmental analysis process and continued through the completion of the FEIS.

An informational meeting was held at Crystal Mountain on October 17, 1998. This meeting had three purposes: (1) provide information about the Crystal Mountain MDP to the public, (2) brief the public on the process used to decide which projects in the MDP would be developed, and (3) allow the public to ask questions to the USFS and Crystal Mountain Staff regarding the MDP and the environmental analysis process. On November 13, 1998, the USFS sent a question and answer informational packet to those attendees who provided names and addresses. The packet contained a total of 72 questions, as posed by the public during the meeting, along with responses from the USFS and/or Crystal Mountain.

The scoping process began in November 1998, with the publication of a Notice of Intent in the Federal Register (FR) on November 13, 1998. That same month, a letter describing the Proposed MDP and asking for comments, concerns, and any additional issues was mailed to over 700 individuals, Tribes, and government agencies. The mailing list included special use permittees in the White River watershed, commentors on the *Green Valley Chair Environmental Assessment* (USFS, 1998a), people requesting to be included in the scoping process, various federal and state agencies, local Tribes, Pierce County, individuals interested in forest management of the Snoqualmie District, and local communities. By the close of this first scoping comment period—January 15, 1999—over 300 written responses had been received (in addition to comments received prior to the scoping process).

Additional public involvement activities included:

- Public involvement meetings on December 8, 1998 in Seattle, Washington and on December 9, 1998 in Enumclaw, Washington;
- Formal USFS correspondence with respective tribal leaders;
- Site tours by the IDT and other interested agencies;
- A project update flyer was mailed to scoping respondents, federal, state, and local agencies, and area Tribes in April of 1999; and
- Public Open House on May 12, 1999 in Renton, Washington.

#### **4.1 Agency Response to Comments Received**

The 300 written comments included many concerns and preliminary issues. All issues were divided into two categories: significant issues that drove the formulation of alternatives to the Proposed Action (including alternatives eliminated from detailed analysis); and issues that could be addressed in the general context of the analysis (i.e., effects disclosure, mitigation, and monitoring). Issues from this second category helped determine the scope and intensity of the analysis for each resource (e.g., soil, water, and recreation - FEIS Section 1.5). All issues received were used to guide the completion of a draft environmental impact statement.

#### **4.2 Draft Environmental Impact Statement**

The *Crystal Mountain Ski Resort Draft Environmental Impact Statement* (DEIS) was distributed on August 17, 2001. Over 700 individuals, organizations, Tribes, and other agencies received either the Summary or the full set of documents. The Notice of Availability of the DEIS (EIS NO. 010303) was published in the *Federal Register* on August 17, 2001 (Volume 66, Number 160), which initiated a 72-day public comment period. By October 31, 2001, the end of the comment period, over 1,200 individual written responses had been received.

The comments received were very useful. My staff and I reviewed and analyzed all public comments received to determine whether we needed to: 1) modify the existing alternatives; 2) develop new alternatives; 3) supplement, improve or modify the analysis; or 4) make factual corrections. Based on the input received, a number of changes have been incorporated into both the analysis and the Selected Alternative. Refer to Volumes 6 and 7 of the FEIS, for the full text of substantive public comments, and the Forest Service responses to those comments.

#### **4.3 Consultation with Tribes**

On September 23, 1998, the Forest Service extended an invitation for the Muckleshoot Indian Tribe, Puyallup Tribe, Yakama Indian Nation (YIN), and the Nisqually Indian Community to visit the Crystal Mountain Ski Area and review and discuss the proposed MDP. Additionally, the USFS notified these tribes about the Crystal MDP project on November 20, 1998 in a formal letter from the Forest Supervisor and asked each for input on issues of concern, including heritage resources. On April 26, 1999, the Forest Service sent certified letters to the MIT, Puyallup Tribe, and the YIN to notify them that an ARPA permit was going to be issued to Northwest Archaeological Associates (NWAA) and invited them to a meeting to discuss any tribal concerns regarding the Archaeological

Resources Protection Act (ARPA) permit for the Crystal Mountain MDP. The MIT, Puyallup Tribe, and the YIN were provided with copies of the Crystal Mountain DEIS for comment on July 20, 2001

The YIN and Puyallup Tribe did not comment on the scoping letter sent by the USFS on November 20, 1998. The USFS contacted the YIN on March 12, 1999 with a follow up phone call to solicit any concerns that the tribe had regarding the Crystal Mountain MDP. The USFS contacted the Puyallup Tribe on February 24, 1999 with follow up phone calls to solicit any concerns that the tribe had regarding the Crystal Mountain MDP.

Most Tribal consultation during the NEPA process was conducted with the MIT, who informed the USFS of their interest in the project and requested to be a consulting party in the NHPA process on December 15, 1998. The Forest Service conducted over ten meetings with MIT representatives, as described in FEIS Section 1.6.1, page 1-48.

A meeting was held on April 23, 2003, at which the MIT discussed mitigation measures proposed by the USFS as well as additional measures they wanted considered. The Tribe requested that an agreement document (Programmatic Agreement) be prepared to fulfill the USFS responsibilities under Section 106 of the NHPA. On May 9, 2003, a draft agreement was sent to the MIT, SHPO, ACHP, Crystal Mountain, the Puyallup Tribe and the YIN for review.

The MIT responded to the Forest Service with comments to the draft on June 17, 2003, and to the SHPO with further comments on July 31, 2003. Comments were incorporated into the final agreement executed between the Forest Service and SHPO on September 9, 2003.

As recently as March 2004, the MIT reviewed a draft copy of a portion of the FEIS and suggested additional mitigation measures. The Forest Service incorporated these additions in Tables 2.4-2 and 2.4-3 of the FEIS.

#### **4.4 Cooperating Agencies**

The Forest Service has jurisdiction for actions proposed on NFS lands. As the lead agency for the Final EIS, the Forest Service invited the U.S. Fish and Wildlife Service (USFWS), and the National Park Service (NPS) to formally cooperate with the Forest Service on the Crystal Mountain MDP analysis. Specifically, the USFWS was invited to participate in order to insure that the agency was sufficiently informed of the project before entering into ESA consultation. The NPS was invited due to the adjoining borders of Crystal Mountain and MRNP.

The development of issues and alternatives during the EIS process included direction from these agencies.

## **5.0 ALL ALTERNATIVES CONSIDERED**

The National Environmental Policy Act (NEPA) requires that the Forest Service develop,



describe, and study reasonable alternatives to proposed actions for use of National Forest System lands. I considered a range of differing and feasible alternatives, including the option of no action, or not allowing Crystal Mountain to implement any of its proposals on NFS lands other than those previously approved (FEIS, Section 2.3.2, page 2-8). Refer to FEIS, Chapter 2 for more details, including Table 2.7-1 (page 100). Also, see Table ROD-1, above, for a comparison of the existing condition with the DEIS Preferred Alternative, and my Selected Alternative.

## **5.1 Alternatives Considered and Eliminated from Further Study**

In response to the public issues and tribal concerns, a number of alternative Master Development Plan components were discussed and analyzed. They include: modifications to chairlift and trail clearing limits, eliminating certain trails, and relocating or eliminating buildings, parking lots, and utilities. Refer to FEIS Appendix A for a complete discussion.

These alternative MDP components were either eliminated from detailed study in an alternative because they did not reduce environmental impacts of the proposal (FEIS, Section 2.2), or they were incorporated into the Proposed Action.

## **5.2 Alternatives Considered in Detail**

### *5.2.1 Alternative 1: No Action*

**Description:** The No Action Alternative, required by implementing regulations for NEPA (40 CFR Parts 1500-1508) and Forest Service policy (FSH 1909.15, 14.1), provides a benchmark from which to compare and measure environmental effects from the other (action) alternatives. If no action were implemented, Crystal Mountain would continue to operate nine chairlifts on approximately 457 acres of formal terrain (FEIS Section 2.3.2, page 2-8, and Table 2.3.2-2, page 2-9). Those new projects approved by previous analyses and decisions would be built. Crystal Mountain's CCC would remain at 7,460 skiers, including a backcountry CCC of 340 skiers. Alternative 1 would have the least development, and the fewest impacts to biological and physical resources, as a result. However, no new watershed restoration projects or management plans would be implemented either.

**Reasons I did not select the No Action Alternative as my decision:** The No Action Alternative would allow the resort to improve some deficiencies and to accommodate a portion of anticipated regional population growth within its current operating parameters. However, I did not select the No Action Alternative because the current deficiencies, described in the Purpose and Need (FEIS page 1-3) would continue. Developments in Alternative 1 would not allow Crystal Mountain to attract additional skiers and other recreationists.

The resort would continue not to meet industry standards for terrain distribution, lift line wait times, building square footage per resort guest, and restaurant seating per guest. The trail system would continue to suffer from bottlenecks, congestion, and poor skier circulation at many trail intersections. Because the quality of the recreation opportunities

available at Crystal Mountain under Alternative 1 would not meet the expectations of visitors in numerous critical areas, the ski area would be poorly positioned to maintain competitive viability in their market niche. Overall alpine recreation demand at Crystal Mountain would continue to be concentrated on weekends and holidays. If no action were implemented, it is expected that Crystal Mountain's market would slowly erode as skiers are drawn to other resorts, with the long-term consequence that the resort's position in the market would decline.

I am also concerned that this alternative has the potential to negatively affect the long-term socioeconomic impact within the Greenwater and Enumclaw areas. The local economy depends, to a degree, on the resort for economic stability during the winter months; tourist-oriented businesses in these communities could be especially impacted if winter visitation decreased substantially as a result of the loss of market share at Crystal Mountain.

With no significant summer operations, Crystal Mountain's cashflow would continue to be concentrated around the winter season, resulting in potentially unstable economic conditions for the ski area.

Finally, I did not select Alternative 1 because the restoration and watershed management components of Alternative 2 (see ROD Section 2.2.3) would not be implemented, resulting in the continued management concerns in the SUP area.

### 5.2.2 *Alternative 2: Proposed Action*

**Description:** Under Alternative 2 (Proposed Action), Crystal Mountain's CCC would increase from 7,460 to 11,020, for an increase of approximately 48 percent, or 3,560 skiers. (see Final EIS Section 2.3.3 - Alternative 2 [Crystal Mountain MDP Proposal], page 2-20 and Table 2.7-1, page 2-100). This CCC includes a backcountry CCC of 30 skiers, comprised of lift-served backcountry terrain throughout the undeveloped SUP area. The increased capacity would be achieved through the replacement of existing lifts, installation of new lifts, development of new ski terrain, and construction of additional support facilities. Alternative 2 includes the installation of a year-round tram, which would allow skier and foot-passenger access throughout the entire year. All new developments would be limited to the existing SUP area of 4,488 acres.

Under Alternative 2, the construction of C-5 (*Silver King*) would include the development of two formal trails and a 25-foot wide egress trail in the southern portion of the SUP area. The lift construction of C-5 would include clearing for the lift terminal, and the support towers on the north and south sides of Elizabeth Lake. Alternative 2 includes the development of C-14 (*Morning Glory Express*) and eight trails in the northern portion of the SUP area, as well as C-15 (*East Peak*) in the eastern portion of the SUP area.

Alternative 2 includes the development of a new base area in the northern portion of Parking Lot B, along with the construction of 17.5 acres of new parking lots. A new wastewater treatment facility would be developed, providing tertiary treatment. Treated

wastewater would be retained in a lagoon for use in snowmaking under Alternative 2. Employee housing would be provided for 285 pillows under Alternative 2.

**Reasons I did not select Alternative 2 as my decision:** I did not select Alternative 2 because I do not believe that the full build-out of the SUP area best serves the public or the Silver Creek watershed.

I did not select development of the Silver King area, because such a lift would provide access to expert-only terrain and the FEIS Shows that Crystal currently has sufficient developed expert terrain (FEIS Figure 3.3.2-5, page 3-189). I am also concerned with the likelihood of litter (soda cans, chip bags, and other rubbish) that would collect in the Riparian Reserves in and around Elizabeth Lake from skiers riding the lift (FEIS page 4-79). The C-5 lift could have effects on MRNP by providing transportation for a large number of skiers to the SUP/MRNP boundary where they could easily move into the park (FEIS page 4-404). I am not convinced that there is sufficient demand for expert-only skiing in the South Country to allow for the environmental impacts that would result.

I did not select development in the East Peak area because with the limited data that is available concerning the number of hike-to backcountry users, I am unable to determine the effects of C-16 (*East Peak*) on these users. Furthermore, the FEIS does not clearly demonstrate the need for development of additional expert-only terrain in the East Peak area (FEIS Figure 3.3.2-5, page 3-186). Without demonstrated, periodic, near-capacity use of C-6 (*High Campbell*), I am not convinced that the *East Peak* lift would receive sufficient use to justify the costs to Crystal Mountain, the potential impact to backcountry skiers in the area (FEIS, page 4-410), or the effects to the Cascade Crest Trail, a potentially eligible heritage resource (FEIS Table 3.3.1-1, page 3-149).

I did not select the *Morning Glory Express* alignment in the North Country because the *Northway Express* alignment will allow for the retention of more backcountry skiing in the North Country, and the *Northway Express* alignment provides for better circulation by allowing skiers direct access to the Green Valley area, including the Green Valley Restaurant. In addition, the *Northway Express* alignment reduces impacts to Riparian Reserves when compared to the *Morning Glory Express* alignment.

I am not convinced that Parking lots I, J, and K are necessary, given their location along Silver Creek, and the resulting potential effects to the stream and Riparian Reserves (FEIS Table 4.2.7-3, page 4-313). I do not believe that the construction of such parking lots would help maintain or improve current watershed conditions in the Upper White River watershed.

While I would applaud the water conservation approach to the water reclamation and re-use component of Alternative 2, I believe that selection of reclaimed water use in snowmaking would not meet the TMDLs set by WDOE. Wastewater effluent under Alternative 2 would be treated to Class A reclaimed water standards with 100% reuse in snowmaking. However, the use of reclaimed water for snowmaking could result in increased levels of BOD-5 and/or ammonia-nitrogen in the TMDL reach of the White

River, approximately 38.7 miles downstream of Crystal Mountain (FEIS, page 4-78). Because Crystal Mountain was originally considered as part of the background load for these constituents, their concentrations cannot be increased under the TMDL (FEIS, page 3-47).

### 5.2.3 *Alternative 3*

**Description:** Alternative 3 addresses public concerns over impacts to the NPW, the PCT, and dispersed recreation (i.e., hike-to backcountry skiing, backcountry horseback riding) within the Crystal Mountain SUP area. Alternative 3 modifies Crystal Mountain's Proposed Action by eliminating lift C-16 (*East Peak*) and the associated trails in Pod 16, in response to issues raised during the scoping process (FEIS Section 2.3.4 and Table 2.7-1). Parking Lot K would not be developed, allowing for the existing tennis court to be restored. Employee housing would be as described for Alternative 2.

Under Alternative 3, Crystal Mountain's CCC would increase from 7,460 to 10,590 skiers, for an increase of approximately 42%, or 3,130 skiers. This CCC includes a backcountry CCC of 40 skiers, comprised of a hike-to backcountry CCC of 10 for East Peak area, and a lift-served backcountry CCC of 30 for the remainder of the undeveloped SUP area.

**Reasons I did not select Alternative 3 as my decision:** My rationale for not selecting Alternative 3 is essentially the same as described for Alternative 2, except for the East Peak discussion. As *East Peak* would not be developed in Alternative 3, the concern over the effects to hike-to backcountry skiers and the Cascade Crest Trail is eliminated.

### 5.2.4 *Alternative 4*

**Description:** Alternative 4 addresses concerns over impacts to Wilderness, the PCT, effects on backcountry skiers, visual concerns associated with MRNP, and riparian concerns relating to the location of the reclaimed water storage facility. Alternative 4 modifies the Proposed Action by eliminating *East Peak*, *Silver King*, *Summit Tram*, the Summit Retreat Center, and the trails in Pods 5 and 16 (FEIS Section 2.3.5 and Table 2.7-1). In addition, Alternative 4 includes a reclaimed water storage lagoon in an existing disturbed area, compared to the location proposed under Alternative 2. Parking Lots I, J and K would not be developed, and the tennis court would be restored, as described for Alternative 3. Employee housing would be as described for Alternative 2.

Under Alternative 4, Crystal Mountain's CCC would increase from 7,460 to 9,980 skiers, an increase of approximately 34 percent, or 2,520 skiers. This CCC includes a backcountry CCC of 140 skiers, comprised of a lift-served backcountry CCC of 130 skiers for the South Country and the remainder of the undeveloped SUP area, and a hike-to backcountry CCC of 10 skiers for the East Peak area.

**Reasons I did not select Alternative 4 as my decision:** I did not select Alternative 4 because it does not include significant summer use when compared to Alternatives 2, 3, 5 and 6. I feel strongly that opportunities should be taken to utilize the Crystal Mountain

facilities during periods when they would otherwise receive little use, to meet the purpose and need. For example, the potential for Crystal Mountain to provide parking and/or staging areas for MRNP during the summer (FEIS, page 4-532) would benefit the park. This partnership would also insure that many acres of available parking lots on National Forest System lands are used to the extent possible. Based on the analysis in the FEIS, I believe that the operation of the Summit Tram will be a key component of such a partnership, reducing pressure on MRNP (FEIS page 4-405) and an economic stimulus to Crystal Mountain during the summer (FEIS Table 4.3.4-7, page 4-501). On this basis, I have concluded that Alternative 4 would not meet the Purpose and Need (FEIS, page 1-3), specifically for year-round operations.

### 5.2.5 *Alternative 5*

Description: Alternative 5 modifies the Proposed **Action** by reducing the amount of disturbance within Riparian Reserves (FEIS Section 2.3.6 and Table 2.7-1). There would be no development in the North Country or South Country. There would be no development in Parking Lots I, J and K; Parking Lot F would be reduced by one acre to restore Riparian Reserves along Silver Creek. A parking structure would be developed in the Bullion Basin Base Area to reduce development of parking lots in Riparian Reserves. Trail 4B – *Boondoggle* would not be upgraded to avoid impacts to Riparian Reserves. Alternative 5 would eliminate the reclaimed water/snowmaking storage lagoon by providing for subsurface disposal of wastewater and up-mountain storage of snowmaking water. All users in the sewer district would be required to connect to the new wastewater treatment facility (except for up-mountain facilities). Employee housing would be provided for 143 pillows.

Under Alternative 5, Crystal Mountain's CCC would increase from 7,460 to 9,780 skiers for an increase of approximately 31 percent, or 2,320 skiers. This CCC includes a backcountry CCC of 330 skiers, comprised of a lift-served backcountry CCC of 300 skiers for North Country and South Country, and 30 skiers for the remainder of the undeveloped SUP area.

**Reasons I did not select Alternative 5 as my decision:** I did not select Alternative 5 because it would not allow development in the North Country, and it would allow development in the East Peak area. Skiers would not be afforded lift-served access to the expert off-piste terrain in the Morning Glory area, which currently receives enthusiastic lift-served backcountry use due to the easy glide from the existing lift system (FEIS, page 3-192). Alternative 5 would also eliminate the upgrade of *Boondoggle*. This, in combination with no development in the North Country would provide less new intermediate and advanced intermediate terrain, as compared to Alternatives 2, 3, 4 or 6. This lack of intermediate terrain would not adequately meet the purpose and need.

### 5.2.6 *Alternative 6: DEIS Preferred Alternative*

**Description:** Alternative 6 addresses concerns over impacts to Riparian Reserves, encroachment into and visual impacts to MRNP, and loss of some of the lift-served

backcountry terrain in the SUP area. Compared to Alternative 2, the Proposed Action, Alternative 6 would reduce the size of the expansion (FEIS Section 2.3.7 and Table 2.7-1). Eliminated from this alternative are: *Snorting Elk* and *Silver King*. To reduce the development of parking lots in Riparian Reserves, Alternative 6 would include the development of a parking structure in the Bullion Basin Base Area, thus eliminating Parking Lots I, J and K from development. Alternative 6 would eliminate the reclaimed water/snowmaking storage lagoon by providing for subsurface disposal of wastewater and up-mountain storage of snowmaking water as in Alternative 5. Alternative 6 would also eliminate the Summit Retreat Center (included in Alternatives 2 through 5) and provide a separate chapel in the base area. Alternative 6 would provide 190 employee beds.

Under Alternative 6, Crystal Mountain's CCC would increase from 7,460 to 10,170, for an increase of approximately 36 percent, or 2,710 skiers. The CCC includes a backcountry CCC of 130 skiers, comprised of a lift-served backcountry CCC of 100 skiers for South Country and 30 skiers for the remainder of the undeveloped SUP area.

**Reasons I did not select Alternative 6 as my decision:** I did not select Alternative 6 because it includes development in the East Peak area and does not provide sufficient avoidance of riparian areas, when compared to Alternative 5.

## **6.0 ENVIRONMENTALLY PREFERABLE ALTERNATIVE**

In accordance with CEQ regulations, I am required to identify the alternative or alternatives that could be considered environmentally preferable (40 CFR Part 1505.2(b)). The environmentally preferable alternative is not necessarily the alternative that will be implemented, but is ordinarily the alternative that causes the least damage to the physical and biological environment, and best protects, preserves, and enhances historical, cultural, and natural resources.

Based on review of the alternatives and the analysis of estimated effects, I have identified Alternative 5 to be the environmentally preferable alternative. Alternative 5 would result in slightly lower impacts to some resources, including: geology and soils, water and watershed resources, fisheries, vegetation, wildlife, air quality and visual resources (Table ROD-5). This is particularly true in the North Country, since this area would not be developed under Alternative 5. If Alternative 5 were implemented, it would also result the greatest amount of restoration along Silver Creek, as Parking Lot F would be reduced in size by one acre, and that land restored.

The developments proposed under Alternative 5 would avoid and minimize new impacts to Riparian Reserves (converting existing RR to a modified condition). However, the Selected Alternative will result in fewer Riparian Reserve acres in a developed condition. (Table ROD-5).

There is no substantial environmental benefit from the selection of Alternative 5 over the Selected Alternative that compels me to accept the reduced quality of the recreation experience that will be afforded by providing lift-served skiing in the North Country.

## **7.0 FINDINGS REQUIRED BY OTHER LAWS AND REGULATIONS**

### **7.1 National Forest Management Act**

The activities that are described in this decision will occur on NFS lands, within the Crystal Mountain Special Use Permit area. All such activities are in compliance with the relevant requirements set forth in the National Forest Management Act (NFMA)—an amendment to the Rangeland Renewable Resources Planning Act—and the implementing regulations at 36 CFR 219.27 (a) – (g). The acres within the Crystal Mountain SUP area are not classified as suitable for timber production

#### *7.1.1 Consistency with the Forest Plan, as Amended*

My decision to implement the Selected Alternative is consistent with the long-term goals and objectives of the *Mt. Baker-Snoqualmie National Forest Land and Resource Management Plan*, as Amended (Forest Plan). Specifically, the planned development within the existing SUP Area is appropriate and consistent with the concepts of multiple-use management and recreational objectives of the MBSNF. All of the individual projects that make up my Selected Alternative were designed in conformance with Forest Plan standards, and incorporate appropriate Forest Plan guidelines for Administratively Withdrawn, MA 3C and Riparian Reserve. The Selected Alternative is fully consistent with the purpose of MA 3C, which is to: “...manage[d] to provide, through sector concession operations, a diversity of winter and summer recreation activities that emphasize the Forest Setting.” (1990 MBS Forest Plan, page 4-182).

I also believe my decision to authorize a Forest Plan amendment to change the MA designation of 550 acres of NFS lands from Administratively Withdrawn, MA 3C and Riparian Reserve to Administratively Withdrawn, MA 1B - Dispersed Recreation, Semi-primitive, Non-motorized and Riparian Reserve is consistent with the intent of the Forest Plan. Lands allocated to MA 1B are predominantly natural or naturally appearing, generally free from evidence of human activities. Recreational experiences in this allocation carry a moderate degree of risk and challenge. Scheduled timber harvest and road construction are generally not permitted. See Section 7.1.2, below.

I have also determined that the Selected Alternative is consistent with the Standards and Guidelines for Riparian Reserves, as described in the Northwest Forest Plan ROD (FEIS Table 4.2.7-FEIS1, page 4-296 and Table ROD-5).

In the DEIS, Section 3.2.9 and 4.2.9 described the Aquatic Conservation Strategy (ACS) and evaluated the alternatives to provide a basis for a finding of consistency with the nine Aquatic Conservation Strategy Objectives. On March 22, 2004, the Northwest Forest

Plan was amended to change the documentation requirements with regard to the ACS. The Final EIS has been updated to include this information (Table 4.2.7-FEIS1, page 4-296).

The Selected Alternative is consistent with the direction in the Northwest Forest Plan (1994 amendment to the 1990 Plan) and the Standards and Guidelines established in the two 2004 amendments. The analysis in the FEIS includes a description of the existing conditions, including major components of the Upper White River Watershed (FEIS, Geology and Soils - page 3-5, Water and Watershed Resources - page 3-20, Vegetation - page 3-48, Wildlife - page 3-62, Fisheries - page 3-104, and Riparian Reserves - page 3-120). The FEIS also includes a description of the environmental effects, including short-term effects, of implementing Alternative 6 on the existing condition (FEIS, Geology and Soils - page 4-8, Water and Watershed Resources - page 4-52, Vegetation - page 4-106, Wildlife - page 4-147, Fisheries - page 4-264, and Riparian Reserves - page 4-293). In my decision, pages 3 - 10 of this ROD, I have highlighted the changed effects to the existing condition, based on Alternative 6 with modifications. The FEIS also references, and incorporates information from, relevant watershed analyses, including the *Upper White and Greenwater Watershed Analysis* (USDA, 2000) (FEIS - page 1-31); the *Initial Upper White River Watershed Analysis and Late-Successional Reserve 125 Assessment* (USDA, 1995 - Final EIS, page 1-31); and *The Silver Creek Watershed Condition Assessment* (Jones & Stokes Associates, 1997 - FEIS, page 1-31). These analyses indicate that short-term effects will result from the implementation of the project, particularly during construction periods, when disturbance to the physical and biological environments will be required for development of new facilities. Based on the analysis in these sections, I have determined that the Selected Alternative is designed to contribute to maintaining or restoring the Upper White River (fifth-field) watershed, over the long term.

The analysis in the FEIS fully complied with the Survey and Manage direction that existed prior to March 22, 2004. My decision complies with the direction provided in the March 2004 Plan Amendment to remove the survey and manage mitigation measure standards and guidelines; no additional survey work is required (USDA, USDI 2004b).

#### *7.1.2 Non-significant Forest Plan Amendment # 23*

Based on the analysis in this FEIS, I have determined that Crystal Mountain's current SUP boundary provides sufficient acreage to meet the objectives of Crystal Mountain and the Forest Service in terms of providing recreation to the public on NFS lands. Therefore, I have determined that the reallocation of approximately 550 acres from Administratively Withdrawn (MA 3C – Developed Recreation, Winter Sports Resorts) and Riparian Reserve to Administratively Withdrawn (MA 1B – Dispersed Recreation - Semi Primitive, Non Motorized) and Riparian Reserve will be more consistent with the current use of the parcel, and more consistent with the allocation of lands adjacent to this part of the ski area. The change in allocation to MA 1B will insure this 550-acre parcel is retained as a dispersed recreation area.



Based on my review of the Forest Plan, as Amended, and the analysis disclosed in the FEIS, I have determined that this is a non-significant (under NFMA) Forest Plan amendment on the basis of criteria outlined in FSM 1922.51 – *Changes to the Forest Plan That Are Not Significant*:

- 1.) The re-allocation of the parcel will not significantly alter the multiple use goals and objectives for the long-term land and resource management. I believe that reallocation will result in a Forest management prescription that is consistent with the actual use of the parcel.
- 2.) The reallocation is the result of a modification to the Crystal Mountain SUP boundary on April 3, 1992, when the SUP was re-issued. The 550-acre parcel was eliminated from the SUP area because Crystal Mountain had no short- or long-term plans for the area.
- 3.) No changes in the standards and guidelines for Administratively Withdrawn, MA 1B are proposed.

## **7.2 National Environmental Policy Act**

The National Environmental Policy Act (NEPA) and its implementing regulations establishes the basis, process, and content requirements for the preparation of detailed statements for proposed actions. The entire process for this Final EIS followed the regulations and direction outline in 40 CFR Parts 1500 to 1508 (CEQ Regulations), Forest Service Manual 1950 and Forest Service Handbook 1909.15. A full range of alternatives was examined in detail, including a no action alternative, to allow the reader to clearly compare the alternatives. There were extensive opportunities for public involvement during the this analysis; and Government-to-Government tribal consultation throughout the process. I used the comments received both during scoping and in response to the DEIS to modify my draft preferred alternative, and develop my decision. Therefore, I find this decision fully complies with NEPA.

## **7.3 Endangered Species Act**

Consultation on the Selected Alternative was conducted with the USFWS and NOAA-Fisheries, in accordance with Section 7 of the ESA.

On July 30, 2003, Biological Assessments were submitted to the agencies for review. On October 8, 2003, NOAA Fisheries provided a Letter of Concurrence for the Forest Service determination that the Selected Alternative may affect, but is not likely to affect Chinook salmon. On October 28, 2003, the USFWS provided a Letter of Concurrence for the Forest Service determinations that the Selected Alternative may affect, but is not likely to adversely affect bull trout, grizzly bear, gray wolf, or Canada lynx. The Forest Service also determined that the Selected Alternative would have no effect on the northern spotted owl, marbled murrelet, or bald eagle. There is no requirement for the

USFWS concurrence on actions that result in no effect to listed species or their critical habitat. Refer to project files for letters of concurrence.

#### **7.4 Washington State Water Law**

Given that the Washington Department of Ecology has denied Crystal Mountain's application for additional, non-consumptive water rights (March 28, 2003 letter from DOE to Crystal Mountain, Inc.), Crystal Mountain will continue snowmaking under their current water rights. The consequence is that flow effects on Silver Creek will be dramatically reduced, compared to those effects disclosed in the FEIS for Alternatives 2 through 6. As a result of Crystal Mountain not being authorized to withdraw additional surface water, I have eliminated the snowmaking water storage lagoon from my decision.

#### **7.5 Executive Order 11990 (Wetlands) and Clean Water Act**

Executive Order 11990 directs federal agencies to avoid, to the extent possible, both long- and short-term adverse impacts associated with the destruction or modification of wetlands. The Clean Water Act provides a regulatory framework for evaluating and authorizing activities that affect Waters of the United States (waters). The Crystal Mountain MDP (i.e., the Selected Alternative) includes action in waters, including wetlands, for the construction of MDP facilities. As specified in Table ROD-3, Crystal Mountain will be required to coordinate with the USACE, USEPA, USFWS, NOAA-Fisheries, WDOE, and WDFW in order to obtain permits under Sections 401 and 404 of the Clean Water Act, as well as NPDES and HPA requirements. Impacts to waters will be mitigated, as specified under Section 404 b (1) of the Clean Water Act (i.e., avoidance, minimization, compensation).

#### **7.6 Executive Order 12898 (Environmental Justice)**

The potential for the Crystal Mountain MDP (i.e., the Selected Alternative) to disproportionately affect minority populations is addressed in Section 4.3.4.1 – Environmental Justice (FEIS page 4-470). The analysis indicates that the Selected Alternative may have a disproportionate effect on the cultural practices and subsistence lifestyles of the MIT. As discussed in ROD Section 4.3 – Consultation with Tribes, the Forest Service has undergone extensive government-to-government consultation, including Section 106 of the NHPA consultation for treatment of historic properties with the MIT. My decision addresses tribal issues, which include issues related to streamflow, elk calving and highway mortality, along with other issues associated with the Crystal Mountain MDP.

#### **7.7 Section 106 of the National Historic Preservation Act**

Issues connected with the requirements of NHPA were considered early in the NEPA process for the Crystal Mountain MDP. The Crystal Mountain MDP (i.e., the Selected Alternative) complies with Section 106 of this Act and its implementing regulations (36CFR 800) by taking into account the effects of the action on historic properties and by consulting with the SHPO and consulting parties.

I determined that the Selected Alternative would have no effect on historic properties listed or eligible for listing on the National Register of Historic Places. A meeting was held on April 23, 2003, at which the MIT requested that an agreement document (Programmatic Agreement) be prepared to fulfill the USFS responsibilities under Section 106 of the NHPA. On May 9, 2003, a draft agreement was sent to the MIT, SHPO, ACHP, Crystal Mountain, the Puyallup Tribe and the YIN for review.

The MIT responded to the Forest Service with comments to the draft Programmatic Agreement on June 17, 2003, and to the SHPO with further comments on July 31, 2003. Comments were incorporated into the final agreement executed between the Forest Service and SHPO on September 9, 2003.

## **7.8 Other Relevant Laws and Regulations, and Environmental Documents Considered in Making My Decision**

I have considered all other relevant laws and regulations pertinent to this project. This includes, but is not limited to the American Indian Religious Freedom Act of 1978, Multiple Use-Sustained Yield Act of 1960, the Forest and Rangeland Renewable Resources Planning Act of 1974, the Clean Air Act as amended, , Invasive Species Executive Order 13112, Protection of Migratory Birds Executive Order 13186, Protection of Floodplains Executive Order 11988, Indian Sacred Sites Executive Order 13007, and the Archeological Resources Protection Act of 1979. In addition, I have considered numerous documents incorporated by reference in the FEIS. I have also considered the comments received during the public involvement process. I have reviewed and considered the environmental consequences disclosed in the FEIS. It is my conclusion that my decision to approve the Selected Alternative, with the necessary Management Requirements, Constraints and Mitigation Measures and monitoring requirements, meets all applicable laws, regulations, and land policies, and is in the public interest.

I am satisfied that the environmental analysis documented in the FEIS is adequate to base this and other agency decisions associated with the Selected Alternative. All potential adverse impacts to all resources disclosed in the FEIS from the construction and operation of facilities on NFS lands under the Selected Alternative will be avoided or minimized with the implementation of required management requirements, constraints, and mitigation measures identified in Table ROD-4 (see Section 11.0, below).

## **8.0 PROJECT IMPLEMENTATION**

Implementation of this decision will occur no sooner than 45 days, plus five (5) business days, after publication of notice of this ROD in the *Seattle Post-Intelligencer*, Seattle, Washington, the official newspaper of record, if no appeal is received. If an appeal is received, the project may not be implemented for 15 days after the appeal decision. Implementation will be carried out as described in Section 2.3 – Implementation of the Decision.

## **9.0 ADMINISTRATIVE REVIEW OR APPEAL OPPORTUNITIES**

This decision is subject to appeal by individuals or organizations who submitted substantive comments during the comment period pursuant to Forest Service regulations at 36 CFR 215.7. Appeal of this decision must be fully consistent with 36 CFR 215.14 (Content of an Appeal). The notice of appeal must be filed hard copy with the Appeal Deciding Officer, faxed, hand delivered, or sent electronically. Appeals must be postmarked or delivered to the Appeal Deciding Officer within 45 days of the date the legal notice for this decision appears in the *Seattle Post-Intelligencer*. The publication date of the legal notice in the *Seattle Post-Intelligencer* is the exclusive means for calculating the time to file an appeal; those wishing to appeal should not rely on dates or timeframes provided by any other source.

Mail appeals to:

Appeal Deciding Officer  
ATTN: 1570 Appeals  
333 S.W. First Avenue, PO Box 3623  
Portland, OR 97208-3623

The FAX number is (503) 808-2255.

Appeals may be hand delivered to the above address between 7:45 AM and 4:30 PM, Monday through Friday except legal holidays.

Appeals can also be filed electronically at:

[appeals-pacificnorthwest-regional-office@fs.fed.us](mailto:appeals-pacificnorthwest-regional-office@fs.fed.us)

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 e-mail addresses other than the one listed above, or in formats other than those listed, or containing viruses, will be rejected. It is the responsibility of the appellant to confirm receipt of appeals submitted by electronic mail.

Crystal Mountain, Inc., the affected applicant, may appeal this decision pursuant to 36 CFR 251, Subpart C. Any written notice of appeal of this decision must include sufficient narrative evidence and argument to show why this decision should be changed or reversed and be fully consistent with 36 CFR 251.90, Content of Notice of Appeal. Any written Notice of Appeal under 36 CFR 251 must be filed in duplicate with the Appeal Deciding Officer, Attn: Appeals, 333 S.W. First Avenue, PO Box 3623, Portland, OR 97208-3623. A copy must be simultaneously sent to Forest Supervisor, John Phipps, Mt. Baker-Snoqualmie National Forest, 21905 64th Avenue West, Mountlake Terrace, Washington 98043-2278, Deciding Officer, within 45 days of the date the legal notice for this decision appears in the *Seattle Post-Intelligencer*.

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Electronic appeals must be submitted as part of the actual e-mail message, or as an attachment in Microsoft Word, rich text format, or portable document format only. E-mails submitted to e-mail addresses other than the one listed above, or in other formats than those listed, or containing viruses will be rejected.

Simultaneously, a copy must be sent to Forest Supervisor John Phipps (Deciding Officer), Mt. Baker-Snoqualmie National Forest 21905 - 64th Avenue West, Mountlake Terrace, WA 98043-2278, FAX, (425) 744-3255; e-mail: [r6\\_mbs\\_comments@fs.fed.us](mailto:r6_mbs_comments@fs.fed.us)

This decision may be implemented five days after the close of the appeal period, if no appeal is filed. If an appeal is filed, the decision will not be implemented until 15 days following the date of the appeal disposition.

## 10.0 CONTACT PERSON

For Information, Contact:

Larry Donovan  
ID Team Leader  
Mt. Baker-Snoqualmie National Forest  
21905 64th Avenue West  
Mountlake Terrace, WA 98043  
(425) 744-3403

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**JOHN PHIPPS**

Forest Supervisor

Mt. Baker-Snoqualmie National Forest

**Date**

## 11.0 MANAGEMENT REQUIREMENTS, CONSTRAINTS, AND MITIGATION MEASURES

All of the following management requirements, constraints, and mitigation measures—Table ROD-4—are included as part of the Selected Alternative and part of my decision, as noted in Section 2.2.2, above. These requirements, constraints, and mitigations are required by the Forest Service to avoid or minimize potential environmental harm associated with implementing the Selected Alternative on NFS lands.

Crystal Mountain, as the permittee, is the party responsible for their implementation. If Crystal Mountain elects to initiate the construction and operation of any action authorized by this ROD, all of the management requirements, constraints, and mitigation measures are required.

**Table ROD-4  
Management Requirements, Constraints, and  
Mitigation Measures Included in The Selected Alternative**

The Management Requirements, Constraints and Mitigation Measures identified below will be included in the site plans and construction plans, as appropriate. All Management Requirements, Constraints and Mitigation Measures will be approved by the USFS prior to authorization for construction.	
Watershed	
WS1	When the use of culverts cannot be avoided, they will be designed to accommodate 100-year flows, debris, and fish passage (if applicable). Hydraulic permits will be obtained for all activities in stream channels. All channel modification proposals will be reviewed and approved by the USFS prior to construction. Documentation of alternatives considered will be required for the USFS to consider a proposal.
WS2	Road crossings and utility line trenched crossings of streams will be avoided where possible. Unavoidable stream crossings will be oriented perpendicular to the stream channel. If construction equipment must cross a channel, it will be limited to a one-time crossing; crossing will occur in an area that minimizes disturbance to the stream bed and banks; and a temporary platform will be created to cross the channel if necessary. The USFS and the WDFW will approve all stream crossing locations and proposed methods of crossing prior to construction.
WS3	All Management Requirements/Constraints and Mitigation Measures listed in the Hydraulic Project Approval (HPA) MOA with the WDFW will be implemented for each project involving an HPA.
WS4	Stream crossings will be monitored at intervals following construction to verify that erosion is not initiated according to the project-specific Stormwater Pollution Prevention Plan and associated monitoring protocols, which will be incorporated into the <i>Monitoring Framework Plan for Crystal Mountain Master Development Plan</i> (Appendix D).
WS6	The <i>Draft Final Conceptual Stormwater Management Plan</i> (Appendix M) will be implemented to control runoff from the parking lots. Project-specific Stormwater Pollution Prevention Plans will be prepared for the construction or reconstruction of parking lots.
WS8	Prior to the development of the water reclamation lagoon along Silver Creek (Alternatives 2 and 3), a project-specific Stormwater Pollution Prevention Plan (SWPPP) will be developed and approved by the USFS. Construction monitoring protocols from the SWPPP will be incorporated into the <i>Monitoring Framework Plan for Crystal Mountain Master Development Plan</i> (Appendix D).

**Table ROD-4  
Management Requirements, Constraints, and  
Mitigation Measures Included in The Selected Alternative**

WS9	Snowmaking withdrawals from surface water will be limited to periods when the withdrawal will not reduce flows in Silver Creek to below the 25 <sup>th</sup> percentile flow. Snowmaking surface water withdrawals will be taken at a rate of no more than one cfs, therefore, pumping will only be engaged when flows in Silver Creek are above the 25 <sup>th</sup> percentile PLUS one cfs. The 25 <sup>th</sup> percentile flow is roughly equivalent to “pulses”, or flows that are above normal base flows.
WS10	Any in-channel construction will be scheduled for completion during the appropriate timelines specified in the required Hydraulic Permit Approval (HPA) from the WDFW.
WS11	The intake for snowmaking surface water withdrawal will be sited and protected to prevent the entrainment of fish. Fish screens or other exclusion devices approved by the WDFW in the HPA and by WDOE in the snowmaking water right will be used to ensure that there is no entrainment of fish through the snowmaking water intake.
WS14	The number of vehicle trips across project sites will be limited to the minimum necessary. Existing/proposed roads will be used to convey construction equipment and materials to individual project sites.
WS17	Clearing limits and trees proposed for removal during lift line, ski trail, and road construction will be depicted in the project specific Stormwater Pollution Prevention Plan. Clearing limits and specific trees to be removed will be reviewed in the field and approved by the USFS prior to ground disturbance.
WS28	All Action Alternatives will include an improved Stormwater Management Plan for the parking lots as described in the <i>Final Conceptual Stormwater Management Plan</i> (Appendix M). The plan, which varies by alternative in the location of specific structural and non-structural stormwater management facilities, would maintain or improve water quality, sediment retention, and instream flows relative to the existing condition. Concentrations of Total Suspended Solids (TSS) and petroleum hydrocarbons would be maintained or reduced, and sediment trap efficiency would be maintained or increased. The plan includes improved detention ponds designed to reduce instantaneous peak flows discharged from parking lots.
WS30	In order to minimize artificial increases in drainage area along Kelly’s Gap Road, Trails 12A and 13B, 13F and other areas where construction disturbance intercepts groundwater seeps, a Stormwater Pollution Prevention Plan (SWPPP) will be developed to include the following: <ul style="list-style-type: none"> <li>• A series of water bars will be developed to drain water intercepted during construction.</li> <li>• Installation of frequent cross-drain culverts so that spacing along upslope ditch lines does not exceed 250 feet, or as appropriate to make use of natural drainage swales.</li> <li>• Ditch lines will be deepened to at least 1 foot below the road or trail subgrade, and culvert inlet basins will be constructed 3 feet wider than the ditch, and at a length of no less than three times the width of the ditch.</li> <li>• Installation of discharge dispersal aprons in areas steeper than 3 percent with coarse gravel and quarry spalls.</li> <li>• Use of full or half-pipe culverts as necessary to flume water across particularly steep or erodible soils.</li> <li>• Design and construction of vegetated swales, wetlands, or sediment retention ponds downslope of projects and upslope of water bar confluences adjacent to Silver Creek and other mapped streams; installation of overflow features (straw bales, quarry spalls, vegetated swales) to filter coarse sediments should design storms be exceeded or severe erosion generate sediment beyond the retention volume.</li> </ul>
WS33	Watershed processes will be monitored according to the <i>Monitoring Framework Plan for Crystal Mountain Master Development Plan</i> (Appendix D).
WS34	For each project, a Spill Prevention and Response Plan will be developed as part of the construction documents. Petroleum products will not be discharged into drainages or bodies of water. No fuels will be stored within Riparian Reserves.



**Table ROD-4  
Management Requirements, Constraints, and  
Mitigation Measures Included in The Selected Alternative**

WS35	Crossings will be installed in intermittent channels when the channels are naturally dewatered or after diverting flow around the construction site, unless otherwise specified in the HPA and/or SWPPP.
WS36	All petroleum products will be secured in self-contained safety cans.
WS38	Existing and future sources of coarse organic debris will be preserved whenever possible to enhance organic matter, nutrients, and surface roughness in soils. Where possible, felled trees or snags not sold or otherwise used in restoration projects will be buried near their origin to maintain long-term sources of organic matter, consistent with other mitigation measures. When grading ski trails, coarse organic debris will be collected and stockpiled along with topsoil. Organic debris will be redistributed and stabilized by partial burial when re-dressing the site with topsoil.
<b>Riparian Reserves</b>	
R1	When in-water work (in most cases, culvert installation or repair) is required in waters of the state, a written alternatives analysis and Stormwater Pollution Prevention Plan (SWPPP) will be prepared and submitted to the USFS for consideration and approval. An HPA permit will be obtained for the chosen alternative and the work performed in accordance with HPA specifications. Compliance monitoring will be performed during or following construction (at USFS discretion) to ensure that HPA specifications have been observed. Erosion control measures and plantings will be monitored annually in September for 3 years following construction to ensure that any site recovery specifications in the HPA are being met. Monitoring efforts will be included in the <i>Monitoring Framework Plan for Crystal Mountain Master Development Plan</i> (Appendix D). If monitoring efforts find inadequate compliance, the USFS will specify additional measures to achieve compliance and such measures will be monitored as necessary to confirm full compliance.
R2	All shrub and tree plantings in Riparian Reserves will only utilize native stock from within the Upper White River watershed. In areas not having Developed cover, herb plantings in Riparian Reserves will only utilize native stock from within the Upper White River watershed. In areas having Developed cover, non-native herbs (such as grass) may be planted. Stock sources, planting methods, and fertilization or pest control treatments will be approved by a USFS botanist.
R4	Full clearing will be minimized when clearing for ski trails in Riparian Reserves. Partial clearing – glades will be practiced in Riparian Reserves to the extent practicable.
R5	When streamside forests must be cleared to provide ski trail crossings of perennial streams, shrubs will be planted to achieve 80 percent cover in 5 years in all areas within 10 meters of the stream in order to help maintain bank stability. Monitoring of planted vegetation will be incorporated into the <i>Monitoring Framework Plan for Crystal Mountain Master Development Plan</i> (Appendix D).
R6	Trees (including live trees and snags) will be felled within Riparian Reserves only (1) to construct approved MDP projects or (2) to maintain safety. For approved MDP projects, the specific trees to be felled will be designated during the design process and the USFS consulted for approval that the design does minimize tree removal. Where possible, trees will be felled so that the fallen tree may be left in place on the ground. Where possible, trees will be topped rather than felled. If non-merchantable felled trees more than 15 cm DBH must be removed from the site, then they will be placed elsewhere in the SUP area to enhance terrestrial or aquatic habitat or soil organic matter within Riparian Reserves.
R7	LWD may be removed from Riparian Reserves or stream channels only for safety reasons, or if it poses a threat to facilities such as culverts or other in-channel structures.

**Table ROD-4  
Management Requirements, Constraints, and  
Mitigation Measures Included in The Selected Alternative**

R8	Approved MDP projects in Riparian Reserves will be confined within construction limits as specified in the project-specific Stormwater Pollution Prevention Plan (SWPPP). Compliance monitoring will be conducted by the USFS according to the SWPPP and <i>Monitoring Framework Plan for Crystal Mountain Master Development Plan</i> (Appendix D). If lack of compliance is found, work may be stopped and additional mitigation may be required at USFS discretion.
R9	Plant material and topsoil will be salvaged for use in revegetation in Riparian Reserves.
R10	If grading, excavation, or soil movement is to be performed within a jurisdictional stream or wetland a Section 404 permit will be obtained from the U.S. Army Corps of Engineers, and a qualified construction monitor will be onsite to ensure that all applicable BMPs are followed as specified in the project-specific Stormwater Pollution Prevention Plan (SWPPP) or permit conditions. A field meeting with the construction manager, USFS, and qualified construction monitor will occur before construction to select required BMPs and discuss any additional methods to minimize impacts.
R11	No access corridors, staging areas, spoils piles, or other construction-related materials will be sited within native plant communities in Riparian Reserves, except where such communities are due to be removed as part of the project under construction.
R12	Revegetation of disturbed areas of Riparian Reserves will emphasize the objectives of filtration of eroded soil material, stream bank stability and wildlife habitat.
<b>Vegetation</b>	
V1	Construction equipment will utilize existing roads or be lifted to steep slope sites by helicopter. New access corridor widths and locations will be minimized. Limits of disturbance will be depicted on project-specific Stormwater Pollution Prevention Plans.
V2	The USFS will review draft engineering drawings to determine if proposed project facilities occur in a sensitive plant location and if project relocation is feasible to reduce impacts. Locations of sensitive plants or plant communities will be depicted on project-specific Stormwater Pollution Prevention Plans.
V4	Native plant seed will continue to be collected as part of the native plant seed increase program. Seed will be used for planting in nurseries to develop container plants and increase the seed bank for native grasses, sedges, and forbs. Important species include the more common grasses and sedges such as green fescue, red fescue, blue wildrye, mountain hairgrass, alpine timothy, showy sedge; forbs such as lupines, asters, pearly everlasting; and shrubs such as mountain heather, mock-azalea, a variety of huckleberry species; and conifers such as western hemlock, Pacific silver fir, noble fir, and mountain hemlock. Species selection would include consultation with, and approval by MBSNF botanists familiar with native plant restoration.
V5	Disturbed sites will be revegetated with native plants for projects within 500 feet elevation and 1,000 horizontal feet from boundaries of MRNP and NPW (i.e., Summit House expansion, Northway Express and Summit Tram, upper terminals). Native species will also be used to revegetate ground disturbance areas associated with the Green Valley Restaurant and regrading associated with Trail 13E. Native species will be specified in the project-specific Stormwater Pollution Prevention Plans.
V6	The proposed Northway Notch Traverse will be revegetated with small subalpine fir trees and shrubs collected in the SUP area within 500 feet elevation from the proposed project. Pinned logs will be used to help stabilize soil for planting sites on road cut. The road bed will be revegetated with native grass and forb species. These conditions will be specified in the project-specific Stormwater Pollution Prevention Plans.
V7	Disturbed sites on ski trails and other project sites within and near the existing ski pods and base area will be revegetated with desirable nonnative species listed in the MBSNF Native Plant Notebook.

**Table ROD-4  
Management Requirements, Constraints, and  
Mitigation Measures Included in The Selected Alternative**

V8	Native conifer and shrub species will be used to landscape disturbed construction areas around the Alpine Inn expansion, wastewater treatment plant, employee housing, and parking lots. Native species will be specified in the project-specific Stormwater Pollution Prevention Plans.
V9	During trenching for utility installation, the upper 6- to 12-inch sod layer will be removed and stored in an approved location for reapplication on salvaged topsoil. Salvaged sod will be watered where practical, if warranted by hot summer conditions. However, such watering would be limited to sites that are accessible by a water truck hose. Construction mats and low-pressure tires will be used when driving across wet soils to dig the trench and install utility lines. These conditions will be specified in the project-specific Stormwater Pollution Prevention Plans.
V10	Wetland/riparian areas will be restored or constructed along the Silver Creek watershed in the following locations: (1) west edge and south end of Parking Lot B along Silver Creek; (2) forested wetlands in decommissioned ski trails between Gold Hill and Bullion Basin ski area; (3) in cleared areas between Parking Lot F and surrounding hills; and (4) along existing drainages associated with non-forested areas above and east of Parking Lot C. These elements will be included in the <i>Watershed Restoration Plan for the Crystal Mountain Master Development Plan</i> (Appendix C). Appropriate mitigation plans will be developed in accordance with the federal wetland permitting process.
V11	Wetland impacts along Trail 13F will be avoided by maintaining the existing contours and drainage patterns that intersect the trail between the Morning Glory Express lower terminal and Trail 13H. Snow bridges will be utilized over the drainages and wetlands for the trail crossings. These conditions will be specified in the project-specific Stormwater Pollution Prevention Plans.
V12	USACE requirements for work proposed in wetlands will be followed.
V13	Applicable BMPs identified by the MBSNF in the EA for Noxious Weed Management will be implemented for all construction. These BMPs will include, but are not limited to: <ul style="list-style-type: none"> <li>• Use weed-free mulch and seed mixes, from USFS-approved sources, to quickly cover any soil exposed during construction or operations.</li> <li>• Use only weed-free or processed feed while on NFSL to minimize the spread of noxious weeds by any horse or stock animals (FSM 2081.03.3).</li> <li>• All equipment will be cleaned per WO-C6-36 – Equipment Cleaning (applies to ski area operations regardless of timber sale).</li> </ul>
V14	If any new populations of special status plant species are encountered during the construction process, work shall be suspended in that area until the MBSNF botanist is consulted.
V15	Where special-status plant species occur near a proposed project site, fence or flags will be installed around the special-status plant populations to prevent construction equipment and crews from disturbing the area. These conditions will be specified in the project-specific Stormwater Pollution Prevention Plans.
V17	During the engineering design phase for chairlift construction, towers will be placed outside of sensitive plant populations if engineering design allows.
V18	Trees will be felled away from sensitive areas such as special-status plant populations, wetlands, and streams, unless otherwise associated with restoration or maintenance of riparian functions. Ground disturbance will be minimized during removal of logs and slash. Understory vegetation will be maintained to the extent practicable in areas that include clearing prescriptions with no grading (e.g., full clearing with no grading, partial clearing-islands, partial clearing – glades).

**Table ROD-4  
Management Requirements, Constraints, and  
Mitigation Measures Included in The Selected Alternative**

V19	As described in the Crystal Mountain Vegetation Management Plan, (Appendix F), large trees will be retained where possible (a tree of any species greater than or equal to 6 inches DBH or greater than or equal to 25 feet tall, or greater than or equal to 12 inches DBH in off-piste ski terrain). Shrub vegetation will be retained along edges of ski trails where possible to create a feathered edge of vegetation along the ski trails. Areas where trees could be felled to minimize impacts and where trees could be left in place will be identified. Trees will be removed over snow.
V20	The <i>Crystal Mountain Vegetation Management Plan</i> , (Appendix F), will be used as guidance for maintaining vegetation on ski trails and in the subalpine fir parkland zone.
V21	Wetlands and locations of special-status plant species will not be used for construction staging areas. Where feasible, vegetation disturbance will be minimized by bringing construction materials and equipment to the project site during snowpack. Helicopters and existing access roads will be used to minimize disturbance during construction. These conditions will be specified in the project-specific Stormwater Pollution Prevention Plans.
V22	Construction contractors will be notified of sensitive areas to be avoided during pre-construction field meetings. Qualified construction monitors will monitor the site according to the Stormwater Pollution Prevention Plan to ensure that avoidance areas are being maintained during construction.
V24	Cut trees will be stockpiled in the nearest large, open clearing such as adjacent ski trails, parking lots, and other artificially cleared areas, as approved by the USFS. Wetlands and sensitive plant locations will not be used to store cut logs or slash. Slash piles will also be created in the openings. Small slash piles will be left in place for wildlife use. Large slash piles will be burned during appropriate periods under USFS guidance to ensure appropriate seasonal fire policies are being followed.
V25	Crystal Mountain will coordinate with the Tribes during the development of the SWPPP to restore and enhance the culturally important native species (such as strawberry and huckleberry).
<b>Wildlife</b>	
W1	Removal of snags and down woody material will be restricted to that necessary to meet safety standards, as described in the <i>Crystal Mountain Vegetation Management Plan</i> , (Appendix F). Snags will be removed only where they pose a safety hazard. Where possible, snags will be topped instead of removed where a shorter snag would be safe to leave. Large down woody material will be left within ski trails and partially buried as necessary to allow for snow cover.
W2	In areas where additional night lighting is proposed (e.g., at the base and Summit House), directional lighting designed to reduce ambient reflection or night glare will be specified in order to reduce potential impacts to nocturnal animals.
W3	Where new culverts are installed or old culverts replaced, bottomless arch culverts or bridges will be specified where feasible to maintain habitat connectivity for low-mobility, riparian-dependent species. Additional specifications to these culverts being built include accommodation of 100-year flows, debris, and fish passage, as well as hydraulic permits for all activities in stream channels.
W4	To minimize potential impacts to olive-sided flycatchers and other neotropical migratory birds, removal of potentially suitable nesting habitat will occur after August 1.

**Table ROD-4  
Management Requirements, Constraints, and  
Mitigation Measures Included in The Selected Alternative**

W5	A public education program will be implemented to encourage observation and to discourage harassment of wildlife and to discourage feeding wildlife. This will be included as part of an overall interpretive program implemented at the base and summit areas, emphasizing the roles and values of wildlife and wildlife habitat within Mt. Rainier National Park, Crystal Mountain and the MBSNF. The public education program will be staffed by USFS and/or NPS staff and funded by Crystal Mountain.
W6	To avoid potential impacts to nesting spotted owls or marbled murrelets: <ul style="list-style-type: none"> <li>• Two years prior to conducting construction activities that would generate noise above ambient forest noise levels within 0.25 miles of the potential spotted owl/marbled murrelet habitat in the vicinity of the proposed Morning Glory chair, surveys will be conducted consistent with current protocols for both marbled murrelets and spotted owls. Construction would take place outside of the nesting season if nests are found (Marbled Murrelet–No work between April 1 and August 6; no work 2 hours before or after sunset between August 6 and September 15. Spotted Owl–No work between March 1 and July 31).</li> <li>• Access and egress routes for aircraft will be planned such that they avoid passing over known and historic nest sites outside of the SUP area boundary at an altitude of less than 250 feet over the canopy.</li> </ul>
W7	Crystal Mountain will encourage the use of one core trail for tram riders and all tram riders will ride the tram down the mountain after Labor Day to address conflicts with elk movement through the area. During the summer operation of the Summit Tram, there will be no operation of the Chinook Express or Rainier Express chairlifts. Crystal Mountain will include no lift-served mountain biking to address elk movement through the area. Crystal Mountain will monitor the ridership to determine the use of trails by tram riders.
W8	Mountain biking at Crystal Mountain would be limited to outside elk calving season
W9	Crystal Mountain will install signage in the ski area to remind motorists of the possibility of elk encounters as they exit the upper White River Valley. Crystal will also work with WSDOT to develop similar warnings along SR 410.
W10	During the summer operating season, Crystal Mountain will post signs on trails and in the base area to encourage people to stay on trails in order to prevent disturbance to elk calving. The area covered by Interpretive Rangers to talk to people about staying on trails would be broadened to include those trails and other descent routes determined to be routinely used by tram riders (see ridership monitoring in W7).
W11	Any lift maintenance and construction activity by Crystal Mountain in the Northway Area will take place outside of the elk calving season.
W12	When elk presence is noted in the SUP area, spring skiers will be required to ride the tram down to the base area; no spring skiing (May 15-June 30) will be allowed outside of the Green Valley/Snorthing Elk area in order to prevent impacts to elk calving.
W13	Crystal Mountain will coordinate with the local tribes and extend an opportunity for the tribes to participate in the monitoring of potential impacts to wildlife as a result of project implementation.
W14	In order to minimize impacts to mountain goats to the north and east of the SUP boundary, Crystal Mountain will implement a boundary closure along the SUP boundary. Crystal Mountain will not permit out-of-bounds skiing (ticketed skiers) into mountain goat areas outside of the SUP boundary. A boundary management plan will be developed to include signage indicating that the SUP boundary is closed to ticketed skiers in order to protect mountain goats and other resources (see also REC1 and REC2).
W15	During the elk calving season (May 15-June 30), the base area at Crystal Mountain will be fenced off to prevent guests from disturbing and impacting elk calving.

**Table ROD-4  
Management Requirements, Constraints, and  
Mitigation Measures Included in The Selected Alternative**

<b>Air Quality</b>	
AQ1	During construction under dry conditions, water will be applied to work roads and exposed soils to minimize dust and PM <sub>10</sub> emissions. Prompt re-vegetation including seeding, mulching, straw matting, etc. will be implemented to reduce or eliminate long-term emissions. These conditions will be specified in the project-specific Stormwater Pollution Prevention Plans.
AQ2	Chipping, lopping, scattering, and light broadcast burning of wood material will be implemented wherever practical. Pile burning will only be used where necessary. Any slash burning will be carried out under USFS guidelines and state permitting procedures, with appropriate fire control measures.
AQ3	Burning permits will be obtained for all burning. Burn piles will be ignited under good-to-excellent ventilation conditions. Operations will be suspended under adverse dispersion conditions.
AQ4	Construction will be phased over an extended period (10 years) to minimize emissions.
<b>Sediment and Erosion Control</b>	
SE1	In areas with developed cut/fill slopes, soil disturbance, and/or grades along stream channels, structural erosion/sedimentation control measures will be implemented as necessary. Where possible, native vegetation that occurs in the site's elevation zone and/or from native stocks at or near the site will be planted. These conditions will be specified in the project-specific Stormwater Pollution Prevention Plans.
SE2	A project-specific Stormwater Pollution Prevention Plan (SWPPP) will be developed for MDP components in conjunction with the final planning and design. The plan will provide site-specific guidelines for erosion and sediment control, storage/disposal of spoil or overburden material, a phasing schedule, and monitoring protocols. The plan will be reviewed and approved by the USFS. Monitoring efforts will be included in the <i>Monitoring Framework Plan for Crystal Mountain Master Development Plan</i> (Appendix D).
SE3	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 per the project-specific Stormwater Pollution Prevention Plan (SWPPP) and/or the <i>Monitoring Framework Plan for Crystal Mountain Master Development Plan</i> (Appendix D) by the USFS or a qualified construction monitor prior to approval of additional ground-disturbing activities.
SE4	Topsoil that is removed from a site during project implementation, and intended to be placed back onto the disturbed site, will be carefully stored using approved erosion and sediment control methods, as described in the project-specific Stormwater Pollution Prevention Plan (SWPPP) in order to avoid erosion. Soil will be covered if it needs to be stored during inclement weather.
SE5	Project-specific Stormwater Pollution Prevention Plans (SWPPPs) will include additional erosion protection (such as two rows silt fence, straw bales and/or more permanent structures such as logs) to be provided between streams and construction areas close to stream channels.
SE6	As specified in each project-specific Stormwater Pollution Prevention Plan (SWPPP), supplies and materials needed to complete erosion control measures will be onsite prior to initiating soil-disturbing activities.
SE7	Erosion control fabric will be installed on disturbed areas of steep slopes around waterways as specified in the project-specific Stormwater Pollution Prevention Plan (SWPPP) and approved by the USFS.

**Table ROD-4  
Management Requirements, Constraints, and  
Mitigation Measures Included in The Selected Alternative**

SE8	The final location and spacing of water bars and other cross-slope drainage structures and maintenance proposals for sediment control structures will be determined in cooperation with the USFS and specified in the project-specific Stormwater Pollution Prevention Plan (SWPPP) for each MDP element that requires water bars.
SE9	As specified in each project-specific Stormwater Pollution Prevention Plan (SWPPP), hay bales and silt fences will be placed immediately upslope of clearing and regrade areas to reduce the amount of surface water entering a newly disturbed area. Water bars will be constructed within the newly disturbed areas to minimize downslope water movement through the site, and to direct sediment laden water away from stream channels.
SE10	As specified in each project-specific Stormwater Pollution Prevention Plan (SWPPP), water bars will be lined with erosion control fabric, sod, and/or mulch to prevent failures prior to the establishment of vegetation, as necessary. Field-certified, weed-free straw mulch will be applied. Any existing water bars disturbed during construction will be repaired.
SE11	Field-certified, weed-free straw will be applied to a minimum depth of 3 inches on all disturbed sites that have no other erosion control mulch prescription. Applications will be made prior to heavy rainstorms during construction and after construction is complete. These conditions will be specified in the project-specific Stormwater Pollution Prevention Plans.
SE12	As specified in each project-specific Stormwater Pollution Prevention Plan (SWPPP), all fill material will be compacted to a minimum 90 percent of the standard proctor density and covered with erosion control fabric to prevent soil erosion.
SE13	As specified in each project-specific Stormwater Pollution Prevention Plan (SWPPP), excess soil material from construction will be transported to a suitable upland site, approved by the USFS, so that it is stored outside of stream or ditch corridors, wetlands (above the ordinary high-water mark), and Riparian Reserves.
SE14	Erosion control filter fabric will be placed underneath rock apron drainages to prevent downslope gully erosion. These conditions will be specified in the project-specific Stormwater Pollution Prevention Plans.
SE15	If flooding or weather results in detrimental erosion or sedimentation, operations will stop until the conditions improve. These conditions will be specified in the project-specific Stormwater Pollution Prevention Plans.
SE16	In areas where no grading is proposed, felling and yarding of trees will occur while snow still blankets and protects the soil surface to minimize erosion. These conditions will be specified in the project-specific Stormwater Pollution Prevention Plans.
SE17	As specified in each project-specific Stormwater Pollution Prevention Plan (SWPPP), sediment traps will be constructed above culvert inlets and below culvert outlets to trap sediment and prevent erosion. Sediment traps will be maintained and cleaned periodically.
SE18	As specified in each project-specific Stormwater Pollution Prevention Plan (SWPPP), runoff from impervious surfaces created by construction activities will be treated by sedimentation and infiltration structures designed to contain runoff from a 2-year, 24-hour design storm. Additionally, all runoff control measures associated with parking lots will comply with the <i>Draft Final Conceptual Stormwater Management Plan (Appendix M)</i>
SE19	A Stormwater Pollution Prevention Plan (SWPPP) will be developed as part of the construction documents for proposed projects. The plan will include source control, structural and non-structural erosion and sediment control measures, revegetation/stabilization techniques, and monitoring protocols. The project-specific SWPPP will be approved by the USFS before any ground disturbance occurs.

**Table ROD-4  
Management Requirements, Constraints, and  
Mitigation Measures Included in The Selected Alternative**

SE20	As specified in each project-specific Stormwater Pollution Prevention Plan (SWPPP), sediment fences and hay bales from USFS-approved sources will be installed around wetlands adjacent to construction areas.
<b>Visual Quality</b>	
VQ1	Developed buildings (including the tram upper terminal) will be designed and constructed with a Cascadian architectural theme.
VQ2	The upper terminal of <i>Rainier Express</i> will be moved approximately 50 feet downslope (east) of its current location to allow for the upper terminal of the <i>Summit Tram</i> , such that the top of the upper tram terminal will not exceed the elevation of the Summit House roofline.
VQ3	Expansion of the Summit House Restaurant and upper terminal of T-1 ( <i>Summit Tram</i> ) will be designed so the developed roofline will be at or below the existing roofline elevation to minimize impacts to MRNP.
VQ4	Where visual quality is a concern, ski trail and other clearing will include scalloping and feathered edges to reduce strong contrast between ski trails and surrounding undisturbed areas as described in the <i>Vegetation Management Plan for the Crystal Mountain Master Development Plan</i> (Appendix F).
VQ5	Trees will be retained/planted to provide screening of developed facilities such as the reclaimed water storage lagoon, wastewater storage tank, and employee housing.
VQ8	Trail 13F ( <i>Northway Return</i> ) would be revegetated upon completion of construction to reduce contrast in texture and color with surrounding vegetation.
VQ9	Retaining walls would use materials to blend with the surrounding environment.
VQ10	Directional night lighting, specifically designed to reduce ambient reflection or night glare, will be utilized in all new night skiing installations. Non-glare, low reflection glass will be installed in all new summit facilities that could be visible from MRNP (e.g., Sunrise Point). Lighting in and surrounding the Crystal Summit buildings will be designed and installed in a manner that will be unobtrusive or not readily noticeable from Sunrise Point in MRNP.
<b>Recreation</b>	
REC1	In order to maintain consistency with the wilderness designation of MRNP, Crystal Mountain will implement a boundary closure along MRNP, as directed by MRNP and the US Forest Service. Crystal Mountain will not permit out-of-bounds skiing into MRNP for the express purpose of skiing into the park. Traversing to Silver King via MRNP will be allowed for skiing within the SUP area. A boundary management plan will be developed to include signage indicating that the MRNP boundary is closed to ticketed skiers, that MRNP is not controlled for avalanche safety, and that search and rescue by Crystal Mountain Ski Patrol may not be available to out-of-bounds skiers.
REC2	In order to maintain consistency with the wilderness designation of NPW and to minimize impacts to backcountry skiers in the NPW, Crystal Mountain will implement a boundary closure along NPW, as directed by the US Forest Service. Crystal Mountain will not permit out-of-bounds skiing into NPW. A boundary management plan will be developed to include signage indicating that the wilderness boundary is closed to ticketed skiers, that the wilderness is not controlled for avalanche safety, and that search and rescue by Crystal Mountain Ski Patrol may not be available to out-of-bounds skiers.
REC3	Grooming practices will be limited in the Northway pod.



**Table ROD-4  
Management Requirements, Constraints, and  
Mitigation Measures Included in The Selected Alternative**

REC4	Along the area from Silver King to Morning Glory Peak, the SUP area boundary will be verified by survey prior to implementation of approved facilities along the boundary with MRNP to insure that no construction will take place in MRNP. The survey will include new monuments/reference points to identify and re-establish boundary signage, funded by Crystal Mountain. Brass caps will be installed/replaced at all angle points on the 1987 boundary survey traverse, with 2" X 2" stakes established at 200-foot intervals along the boundary traverse. Conflicting uses (primarily along Trail 1163) will be reviewed and corrected.
REC5	Temporary signage will be posted to warn recreation users of construction activities, and if necessary, alternative routes will be provided or recommended. The Naches Ranger District of the Wenatchee National Forest will be notified of construction activities for projects on the east side of the ski area (i.e., Bullion Basin and Quicksilver chairlifts)
REC6	Construction activities would occur only during daylight hours to minimize impacts to sleeping campers, and would not occur over the holiday weekends (i.e., Memorial Day, July 4 <sup>th</sup> , and Labor Day) to minimize disturbance to recreation users in the project area.
REC7	If resource-related problems develop at campsites within the SUP area (e.g., erosion), Crystal Mountain will harden the sites (e.g., installation of gravel/mulch pathways) to resolve the resource issues.
REC8	Mountain bikes will not be transported on chairlifts or the Summit Tram (see W 7).
REC9	Crystal Mountain will install a fence barrier or maintain vegetation in order to prevent non-resident skiers from accessing the condominium areas from the <i>Bullion Basin</i> and <i>Gold Hills</i> pods.
REC11	A Wilderness Monitoring Plan will be developed to monitor the effects of increased use at the Crystal Mountain Summit on the wilderness area in MRNP. The Wilderness Monitoring Plan will include a baseline condition survey and set up of indicators, standards, and monitoring program in order to determine if resource conditions are improving, unchanged, or deteriorating. If conditions deteriorate, then successive management actions would be applied until conditions are not exceeding the standards. This monitoring effort will be incorporated into the <i>Monitoring Framework Plan for Crystal Mountain Master Development Plan</i> (Appendix D). Crystal Mountain will fund the recreational use surveys and monitoring.
REC12	If monitoring of the summer use at the summit indicates that high use results in resource-related problems along the Way Trail from Powder Pass, Crystal Mountain will provide funding for survey, design, construction and maintenance of the trail.
REC13	Crystal Mountain will develop a shuttle van system from the base area to Sunrise in order to provide Crystal guests an opportunity to visit the park and to help reduce peak summer traffic volumes. The system will be implemented based on demand for such a system, in coordination with MRNP.

**Table ROD-4  
Management Requirements, Constraints, and  
Mitigation Measures Included in The Selected Alternative**

REC14	<p>As recreational use increases at the Crystal Mountain Summit, and based upon monitoring results:</p> <ul style="list-style-type: none"> <li>• Crystal Mountain will fund up to four seasonal interpretive rangers to staff an information desk at the Summit House interpretive facility, and to provide field contacts during the summer operation of the tram, and to monitor types of use on the PCT;</li> <li>• Crystal Mountain will fund one seasonal interpretive USFS/NPS ranger position to staff the USFS Silver Creek Guard Station Visitor Information Center from Memorial Day through mid- September - This contact station staff member would orient visitors to the amenities available at Crystal Mountain, the MBSNF, and MRNP.</li> <li>• Crystal Mountain will fund one winter/seasonal backcountry ski ranger. This individual will work with Crystal Mountain in enforcing boundary policies and assist in managing winter use.</li> <li>• Crystal Mountain will make housing available for rent to USFS/NPS summer staff.</li> </ul>
REC15	Crystal Mountain will offer a one-ride lift ticket on the Quicksilver Express chairlift to facilitate access to Silver Basin for backcountry skiers.
REC16	Crystal Mountain will offer a one-ride lift ticket on the Bullion Basin chairlift to facilitate access to East Peak for backcountry skiers.
REC17	Trails, including the historic Silver Creek Trail, affected by construction activities will be reconstructed to pre-disturbance conditions.
<b>Transportation</b>	
TR1	Crystal Mountain will target night ticket sales earlier in the afternoon and overlap day ticket hours later in the afternoon to promote off-peak arrivals and departures, as has been successfully implemented in trials during the 1999-2000 and 2000-2001 seasons.
TR2	Crystal Mountain will increase parking management to maximize vehicle densities in designated parking areas (i.e., parking attendants).
TR3	Crystal Mountain will increase snow management (snow plows/sanding, increased snow removal) and designate snow storage areas as described in the <i>Draft Final Conceptual Stormwater Management Plan</i> (Appendix M).
TR4	Crystal Mountain will enhance maintenance on plow fleet, schedule maintenance to help insure that equipment is not down at peak traffic times.
TR5	Crystal Mountain will increase monitoring of CMB including provision of radios in plow fleet for operators to report traffic problems. Crystal Mountain will also provide “prowling” vehicles, which monitor traffic in both directions on CMB, as well as potential traffic problems (e.g., icy areas).
TR6	Crystal Mountain will increase the snow management fleet to reduce reliance on any one vehicle to perform key snowplowing functions. For example: increase the plow/sander fleet from two to three; add “prowling” vehicles that are capable of monitoring CMB, sanding icy areas, and assisting stranded motorists; increase the loader fleet from one to two to increase reliability; provide a snow blower; provide a grader.
TR7	Crystal Mountain will expand snow management hours commensurate with expansion of night skiing schedule.
TR8	Crystal Mountain will establish and clearly advertise a phone number for incident reporting by motorists.
TR9	Crystal Mountain will provide incentives to carpooling and the use of public transit services by employees and guests. Example programs include provision of preferred parking for high occupancy vehicles, private coaches from population centers and reduced lift ticket pricing for carpoolers.

**Table ROD-4  
Management Requirements, Constraints, and  
Mitigation Measures Included in The Selected Alternative**

TR10	Crystal Mountain will implement periodic messages by radio on the mountain and via moveable message boards along SR 410(in coordination with WSDOT and WSP) to warn westbound motorists of road conditions, chain-up requirements, and instructions in the event of a traffic incident or during storm events.
TR11	Upon approval by WSDOT and WSP, Crystal Mountain will implement signage and messaging that encourages motorists to proceed up or down CMB after minor fender-benders (without traction loss) before exchanging information with other drivers.
TR12	Crystal Mountain will reduce traffic to one-way on CMB when needed for incident response.
TR13	In addition to the scheduled WSP chain-up control, funded by Crystal Mountain, the resort will implement measures to reduce the response time for chain-up control during unscheduled periods or during the instantaneous arrival of a storm (e.g., provide funding for on-call WSP, Pierce County Sheriff, or Crystal Mountain staff).
TR14	Crystal Mountain will work with WSP in the establishment of a programmatic agreement that would allow Crystal Mountain to respond to all but major incidents, or those resulting in injuries, in order to remove stranded vehicles from the roadway.
TR15	Crystal Mountain will extend the current pilot program with Quick Coach Lines or another provider to provide bus service throughout the entire Puget Sound region.
TR16	Crystal Mountain will implement a Parking Management Plan for days when parking demand exceeds supply. The Parking Management Plan would include: Turning cars away, providing incentives for carpooling at higher rates (see TR9), and increased bus usage (e.g., heavy ski school or charter bus days).
TR17	Crystal Mountain will implement a cooperative program with MRNP to provide parking and services for summer visitors that would otherwise enter MRNP, resulting in overcrowded parking conditions in MRNP.
TR18	When demand is sufficient for MRNP to develop a shuttle system for access to the park during the summer, Crystal Mountain will cooperate with MRNP to share the shuttle system for access to the ski area during the winter.
TR19	Crystal Mountain will mitigate its contribution to the poor operation at the intersection of 264 <sup>th</sup> Ave. SE (SR-169)/SE 416 <sup>th</sup> Street through a pro rata contribution (approximately 5 percent) toward the installation of a traffic signal at this intersection, if proposed by the city/county/state.
TR20	Crystal Mountain will mitigate its contribution to the poor operation at the intersection of Cole Street/Griffin Avenue (SR-164) through a pro rata contribution (approximately 5 percent) toward a timing adjustment of the signal, if proposed by the city/county/state.
TR21	Crystal Mountain will mitigate its contribution to the poor operation at the intersection of Griffin Avenue (SR-164)/Roosevelt Avenue (SR-410) through a pro rata contribution (approximately 10 percent) toward the timing adjustment of the signal, if proposed by the city/county/state.
TR22	In order to increase transportation options to Crystal Mountain and MRNP, Crystal Mountain will work with the existing All American Road Welcome Center Committee to represent the resorts interests and provide input for the siting and development of a Welcome Center/Transportation Hub for winter and summer access to Crystal Mountain and MRNP.
<b>Heritage Resources</b>	
HR1	If any previously unidentified heritage resources are identified encountered at any time during the implementation of the MDP, efforts shall be made to protect the resource until the Forest Archaeologist is notified and the USFS fulfills its consultation requirements.

**Table ROD-4  
Management Requirements, Constraints, and  
Mitigation Measures Included in The Selected Alternative**

HR3	Spring skiers will be required to ride the chairlifts (Alternatives 1 and 4) and/or tram down to the base area; no spring skiing (May 15-June 30) will be allowed outside of the Green Valley/Snorthing Elk area in order to prevent impacts to the exercise of treaty rights by Tribes (Tribes with interests in the CM SUP include the Muckleshoot Indian Tribe, the Puyallup Tribe and the Yakama Indian Nation).
HR4	In recognition of Tribal interests, Crystal Mountain will facilitate access to the permit area by tribal representatives for tribal use of the Crystal Mountain SUP area.
HR5	Prior to development of approved projects, Crystal Mountain will contact the Tribes to allow monitoring for cultural/heritage resources.
HR6	During the preparation of the Stormwater Pollution Prevention Plan in the spring of the year preceding the actual construction (i.e. spring of 2005 for 2006 construction), and again in the preparation of the annual summer operating plan, Crystal Mountain will notify the Tribes of upcoming construction projects and coordinate with them to provide them opportunity to collect plants from approved project areas.
HR7	Crystal Mountain will provide the Tribes with an opportunity to participate in the monitoring of the implementation of the selected alternative per the Monitoring Framework Plan and requirements in the Record of Decision.
HR8	Crystal Mountain will implement the Programmatic Agreement Between the Forest Service and the State Historic Preservation Officer Regarding the Administration of the Crystal Mountain SkiArea. This includes the development of a Cultural Resources Management Plan that addresses the discovery of previously unidentified properties during project construction and ski area operations and a plan for the inadvertent discovery of Native American remains and specified items as defined in the Native American Graves Protection and Repatriation Act.
<b>Utilities</b>	
UT1	Crystal Mountain will limit the amount of open trench exposed; complete installation as quickly as feasible; compact trench fill to retard potential for erosion; revegetate or provide other means of retarding potential for erosion; if a segment of trench is located in an area where flows may concentrate, install water bars or other means, to divert or disperse water away from the trenched site.
UT2	When trenches are placed within road beds, Crystal Mountain will perform road maintenance, including surfacing and grading immediately following cable installation, and monitor road to ensure road erosion is not initiated.
UT3	Crystal Mountain will consolidate utilities within common trenches where possible, and locate trenches in stable soil areas.
<b>Standard Operating Procedures</b>	
SOP1	Construction documents will be prepared and stamped by a professional engineer, as necessary, and approved by the USFS.
SOP2	For each project, a Stormwater Pollution Prevention Plan (SWPPP) will be prepared with a list of site specific mitigation measures (including those from this table, any additional permit conditions, or others as deemed appropriate). This plan will be approved by the USFS prior to implementation of any project.
SOP3	Construction will not begin until authorized by the USFS and approved by all applicable Federal, State and local agencies.
SOP4	Included in the <i>Monitoring Framework Plan</i> , Crystal Mountain will provide routine environmental monitoring of construction sites to insure that all permit conditions and mitigation measures are met, as specified in the project-specific Stormwater Pollution Prevention Plans (SWPPPs).

## **12.0 ENVIRONMENTAL CONSEQUENCES**

Table ROD-5, on the following pages, shows a comparison of the estimated environmental consequences of implementing any of the alternatives, including the Selected Alternative, Alternative 6 with modifications

**Table ROD-5  
Summary Comparison of Environmental Consequences**

<b>Parameter</b>	<b>Alternative 1</b>	<b>Alternative 2</b>	<b>Alternative 3</b>	<b>Alternative 4</b>	<b>Alternative 5</b>	<b>Alternative 6</b>	<b>Selected Alternative</b>
<b>Climate and Snow</b>							
Avalanche Control							
North Country	unchanged	improved control	improved control	improved control	unchanged	improved control	improved control
South Country	unchanged	improved control	improved control	unchanged	unchanged	unchanged	unchanged
East Peak	not controlled	controlled	not controlled	not controlled	controlled	controlled	not controlled
Snowmaking (acres)	30	254	254	254	238	254	254
<b>Geology and Soils</b>							
Road Density (mi/mi <sup>2</sup> )	2.66	2.33	2.29	2.28	2.34	2.34	2.26
Road Network (miles)	18.7	16.38	16.04	15.96	16.4	16.4	15.83
Stream Crossings by Open and inactive roads	61	62	60	61	57	61	61
Percent Increased Sediment Yield Over Background (Assumes deicer is being used)	13	16	16	16	16	16	16
Soil Disturbance from:							
roads (acres)	44.2	39.7	39.1	38.9	39.7	39.7	38.7
other activities (acres)	68.6	97.2	97.1	88.6	90.6	89.7	83.8
prev. disturbed bare soil (acres)	24.7	0	0	0	0	0	0
<b>Total (acres)</b>	<b>137.5</b>	<b>136.9</b>	<b>136.2</b>	<b>127.5</b>	<b>130.3</b>	<b>129.4</b>	<b>122.5</b>
<b>Water and Watershed</b>							
Streams							
Culverted length (miles)	2	2.2	2.2	2.2	2.2	2.2	2.2

**Table ROD-5**  
**Summary Comparison of Environmental Consequences**

Parameter	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6	Selected Alternative
Stream Crossings by Structure Type:							
Culverts	47	65	63	63	64	63	68
Bridges	12	21	21	22	17	20	24
No structure, channel modification	16	22	22	22	22	20	20
Number of Temporary Stream Impacts by Structure Type:							
Number of temporary culverts	-	3	3	3	3	3	3
Number of temporary bridges	-	4	4	4	0	4	4
Number of trenched utility crossings	-	22	22	22	22	19	19
Withdrawals							
Existing Water Right (ac-ft)	84	84	84	84	84	84	84
Domestic and Commercial	32	76	74	73	66	72	72
Irrigation	4	4	4	4	4	4	4
Snowmaking Consumptive Use	48	4	6	7	14	8	8
Snowmaking Non-Consumptive Use	-	14	21	25	28	28	-
Gold Hill Water Right (Beneficial Use Demonstrated) (ac-ft)	5	5	5	5	5	5	5
<b>Total</b>	<b>89</b>	<b>103</b>	<b>110</b>	<b>114</b>	<b>117</b>	<b>117</b>	<b>89</b>
Snowmaking (acres)	30	254	254	254	238	254	254
Stormwater Management Plan?	No	Yes	Yes	Yes	Yes	Yes	Yes

**Table ROD-5**  
**Summary Comparison of Environmental Consequences**

Parameter	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6	Selected Alternative
Puyallup River TMDL	Consistent	Consistent	Consistent	Consistent	Consistent	Consistent	Consistent
<b>Vegetation</b>							
Wetland Impacts (acres):							
Palustrine Emergent	-	0.61	0.61	0.6	0.59	0.61	0.61
Palustrine Scrub/Shrub	-	0.51	0.51	0.49	0.49	0.49	0.43
Palustrine Forested	-	0.31	0.31	0.31	0.31	0.31	0.31
<b>Total</b>	-	<b>1.43</b>	<b>1.43</b>	<b>1.4</b>	<b>1.39</b>	<b>1.41</b>	<b>1.34</b>
Vegetation Impacts (acres):							
Immature western hemlock	-	14.74	12.13	11.99	14.45	13.96	11.36
Mature western hemlock	-	0.97	0.97	0.97	0.97	0.97	0.95
Immature Pacific silver fir	-	37.76	36.74	36.71	33.68	40.4	39.46
Mature Pacific silver fir	-	10.56	10.56	7.25	1.76	7.24	7.24
Immature mixed fir	-	22.89	22.9	18.9	8.13	15.22	15.1
Mature mountain hemlock	-	6.84	6.84	6.83	3.83	6.83	6.83
Immature subalpine fir	-	11.81	11.8	11.8	4.34	8.57	8.57
Mature subalpine fir	-	9.73	9.73	8.24	2.07	9.75	9.75
Subalpine fir parkland	-	23.6	21.73	17.94	15.86	17.25	14.44
Maintained ski trails	-	59.46	59.43	63.42	55.31	59.43	59.42
Herbaceous – natural	-	9.21	9.2	4.92	4.29	4.03	4.03
Shrub - natural	-	0.29	0.29	0.29	0	0.29	0.29
Shrub – managed	-	0.67	0.67	0.67	0.67	0.67	0.67
Rock cliffs/Talus slopes	-	2.99	2.99	1.86	3.47	3.2	3.15
Wetlands	-	1.43	1.43	1.4	1.39	1.41	1.34
<b>Total</b>	-	<b>212.95</b>	<b>207.43</b>	<b>193.19</b>	<b>150.22</b>	<b>189.22</b>	<b>182.6</b>



**Table ROD-5**  
**Summary Comparison of Environmental Consequences**

Parameter	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6	Selected Alternative
Number of locations with potential impacts to Special Status vascular plant species	-	6	6	3	4	3	3
<b>Wildlife</b>							
Riparian Habitat:							
Elimination of vegetation (acres)	-	23.8	22.9	15.2	12.7	12.4	11.2
Conversion of vegetation (acres)	-	31.5	32.1	29.4	19.2	28	28.2
Reduction in forest area capable of producing snags and Coarse Woody Debris (CWD):							
Mature (acres)	-	28.1	28.1	23.3	8.6	24.8	24.8
Immature (acres)	-	87.4	83.9	79.7	60.9	78.5	74.8
Grizzly Bear Security Habitat at Silver King (acres)	92.8	92.8	92.8	92.8	56.4	56.4	56.4
Grizzly Bear Security Habitat at Morning Glory/Kelly's Gap (acres)	137.8	129.9	129.9	129.9	135	135	135
Potential Amphibian/Terrestrial Mollusk Habitat loss (acres):	-	4.6	4.6	1.3	1	1.3	1.2
Mature, closed canopy forest	-	18.4	18.4	15.1	6.6	15.1	14.9
Mature forest with potential to supply CWD below subalpine:							
Forested Riparian Reserves	-	47.5	47.4	39.8	30.2	38.2	35.1
Forested Riparian Reserves below subalpine	-	44	43.9	36.9	28.2	35.8	32.8
Great Gray Owl and Pileated Woodpecker Habitat (acres):							
Closed canopy forest	83.3	78.7	78.7	82	82.3	82	82.1

**Table ROD-5**  
**Summary Comparison of Environmental Consequences**

Parameter	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6	Selected Alternative
Open canopy forest	400.4	386.9	386.9	386.9	395.1	386.9	386.7
Net change in butterfly habitat (acres):							
Western Sulfur Butterfly	-	104.2	100.4	95.2	56.7	93.6	89.4
Alteration of Elk Habitat (acres):							
Removal of foraging habitat	-	-12.1	-11.8	-11.6	-8.3	-7.9	-7.2
Removal of cover	-	-25.5	-25.1	-17.6	-17.9	-17.6	-17.2
Cover converted to forage	-	-61.3	-58.7	-58.7	-38.8	-57.4	-57.6
Elk Mortality along State Route 410 (avg. #/year) <sup>6</sup> :	7.6	9.2	9.2	8.5	9.1	8.9	8.9
Net Change in Deer Habitat (acres):							
Cover	-	-68.5	-65.9	-58.5	-45.9	-60.4	-57.6
Primary forage	-	-43.4	-42.5	-41	-20.1	-39.2	-38.5
Secondary forage	-	91.8	89.8	88.2	58.7	90.8	88.9
Loss of Neotropical Migratory Bird Habitat (acres):							
Late successional forest		0.2	0	0	0.2	0.2	0
Early/mid seral forest	-	26.9	26.6	19.1	19.2	18.4	18.2
Meadow	-	0.6	0.6	0.6	0.4	0.4	0.4
Wetlands, lakes and ponds	-	0.2	0.2	0.2	0.2	0.2	0.2
Cliff	-	0	0	0	0	0	0
Riparian	-	15.9	15.6	8.6	8.7	8.4	8.1
Subalpine parkland	-	0.7	0.6	0.5	1	1	1
Alteration of Neotropical Migratory Bird Habitat (acres):							
Late successional forest		0.8	1	1	0.8	0.8	0.94

<sup>6</sup> Based in part upon unpublished work © 2002 Muckleshoot Indian Tribe. This research is one part of a collective work in progress with conclusions subject to revision as data are accumulated and refined.

**Table ROD-5**  
**Summary Comparison of Environmental Consequences**

Parameter	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6	Selected Alternative
Early/mid seral forest	-	87.3	84.1	82.6	49.1	83.6	80.14
Meadow	-	2.2	2.2	2	1.5	1.4	1.39
Wetlands, lakes and ponds	-	1.2	1.2	1.2	1.2	1.2	1.13
Cliff	-	0	0	0	0	0	0
Riparian	-	31.6	31.8	31.1	21.5	29.8	29.82
Subalpine parkland	-	22.8	21	17.4	14.7	16.2	13.82
<b>Fisheries</b> (See also Water and Watershed and Riparian Reserves sections)							
New Physical Barriers	-	None	None	None	None	None	None
New Fish Entrainment	-	None	None	None	None	None	None
Riparian Reserve Area by Large Woody Debris (LWD) Potential Class (acres):							
Lakes	8.3	8.3	8.3	8.3	8.1	8.1	8.3
Forested Mature	341.7	326.3	326.3	330.1	336.2	330	329.9
Forested Immature	375.9	346.7	346.8	350.7	354.2	352.3	352.6
Naturally Non-Forested	402.9	398.3	398.3	400.5	399.3	399.1	400.4
Modified	207.6	242.1	243.3	241.1	236.3	243.2	244.5
Developed	74	88.5	87.2	79.6	76.1	77.5	74.7
Fish Bearing Stream Bank by LWD Potential Class (miles):							
Forested Mature	2.17	2.15	2.15	2.15	2.15	2.15	2.14
Forested Immature	3.6	3.5	3.51	3.51	3.51	3.51	3.06
Naturally Non-Forested	1	1	1	1	1	1	1
Modified	0.54	0.6	0.6	0.6	0.6	0.6	0.57
Developed	0.57	0.61	0.61	0.61	0.61	0.61	0.6
<b>Riparian Reserves</b> (See also Water and Watershed, Soils and Geology, and Fisheries sections)							
Total new impact to Riparian Reserves (acres)	-	110.3	109.3	98.8	83.2	95.8	93.7
Total Developed condition class (acres)	74	88.5	87.2	79.6	76.1	77.5	74.7

**Table ROD-5**  
**Summary Comparison of Environmental Consequences**

<b>Parameter</b>	<b>Alternative 1</b>	<b>Alternative 2</b>	<b>Alternative 3</b>	<b>Alternative 4</b>	<b>Alternative 5</b>	<b>Alternative 6</b>	<b>Selected Alternative</b>
Total Modified condition class (acres)	207.6	242.1	243.3	241.1	236.3	243.2	244.5
Construction in Riparian Reserves (acres):							
ADA Trail	-	0.1	0.1	0.1	0.1	0.1	0.1
New buildings	-	8.1	8.1	8.1	8.3	8.3	8.3
New parking	-	16.1	15.0	7.6	7.6	7.3	7.3
Net new parking	-	15.4	14.4	6.9	7.2	6.7	4.9
New roads	-	0.7	0.3	0.3	0.8	0.8	0.3
Net new roads	-	-2.5	-2.9	-2.9	-2.4	-2.4	-2.9
Lift Terminal	-	0.3	0.3	0.2	0.2	0.2	0.2
SM-Lagoon	-	0	0	0	1.3	1.3	-
Wastewater Lagoon	-	3.7	3.7	3.7	-	-	-
Wastewater Building	-	1.1	1.1	0.8	0.8	0.8	0.8
Areas that would be converted to Developed or Modified condition classes (acres):							
Convert from Immature forest	-	31.6	31.7	27.8	24.2	26.1	25.2
Convert from Mature forest	-	15.4	15.6	11.8	5.5	11.7	11.8
Convert from Non-forest	-	5.2	5.2	3.1	4.4	4.6	3.1
1994 ROD Standard and Guidelines							

**Table ROD-5**

**Summary Comparison of Environmental Consequences**

<b>Parameter</b>	<b>Alternative 1</b>	<b>Alternative 2</b>	<b>Alternative 3</b>	<b>Alternative 4</b>	<b>Alternative 5</b>	<b>Alternative 6</b>	<b>Selected Alternative</b>
<p><b>RF-2</b> – For each existing or planned road, meet Aquatic Conservation Strategy (ACS) objectives by: a) minimizing road and landing locations in Riparian Reserves (RR), b) completing watershed analyses prior to construction of new roads or landings in RRs, c) preparing road design criteria, elements, and standards that govern construction and reconstruction, d) preparing operation and maintenance criteria that govern road operation, maintenance, and management, e) minimizing disruption of natural hydrologic flow paths, including diversion of streamflow and interception of surface and subsurface flow, f) restricting side casting as necessary to prevent the introduction of sediment to streams, and g) avoiding wetland entirely when constructing new roads.</p>	<p>No new roads would be developed under Alternative 1. Road operation and maintenance would be carried out based on current approvals and the annual operating plan, which would not include road obliteration or restoration.</p>	<p>All Action Alternatives were designed to minimize road locations in RRs, including wetlands. Under the Action Alternatives new roads in Riparian Reserves (RR) break down as follows:</p> <ul style="list-style-type: none"> <li>• Alternative 2 - 0.68 acre (0.48% of 5<sup>th</sup> field RR)</li> <li>• Alternative 3 - 0.30 acre (0.47% of 5<sup>th</sup> field RR)</li> <li>• Alternative 4 - 0.30 acre (0.39% of 5<sup>th</sup> field RRs)</li> <li>• Alternative 5 - 0.81 acre (0.28% of 5<sup>th</sup> field RRs)</li> <li>• Alternative 6 and Selected Alternative - 0.81 acre (0.35% of 5<sup>th</sup> field RRs)</li> </ul> <p>(Refer to Table 4.2.7-3).</p> <p>The Upper White and Greenwater Watershed Analysis (USDA, 2000), Initial Upper White River Watershed Analysis and Late-Successional Reserve 125 Assessment (USDA, 1995) and the Silver Creek Watershed Condition Assessment (Jones &amp; Stokes Associates, 1997) have been completed to provide the roads information and management concerns, as well as other watershed issues, with the Silver Creek Watershed Condition Assessment completed specifically for the Crystal Mountain MDP. The Road Management Plan (FEIS Appendix E) has been developed to address road construction, operation, monitoring and maintenance specifically for the Crystal Mountain MDP. Under the Action Alternatives, new culverts would be sized to pass the 100-year flow, debris and fish passage (see FEIS Table 2.4-2 , WS1). In addition, replacement of culverts based on monitoring of culvert conditions would include the 100-year-flow requirement. All road construction would be conducted within the approved construction limits, and proper placement of sidecasting would be conducted according to Management Requirements, Constraints and Mitigation Measures WS4, 17, 33, 35 and SE1 ,2, 5, 7, 12 ,13,and 17 to insure that sediment introduction is minimized (see Table 2.4-2). Under the Action Alternatives, no roads would be constructed in wetlands, and approximately 1,000 square feet of wetlands could be temporarily disturbed due to road construction (Table FEIS 4.2.4-1). These 1,000 square feet would be avoided through implementation of measures V21 and V22 during construction (see FEIS Table 2.4-2).</p>					

**Table ROD-5**  
**Summary Comparison of Environmental Consequences**

Parameter	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6	Selected Alternative
<p><b>RF-3</b> – Determine the influence of each road on the ACS objectives through watershed analysis. Meet ACS objectives by: a) reconstructing roads and associated drainage features that pose a substantial risk, b) prioritizing reconstruction based on current and potential impact to riparian resources and the ecological value of the riparian resources affected, and c) closing and stabilizing, or obliterating and stabilizing roads based on the ongoing and potential effects to the ACS objectives and considering short-term and long-term transportation needs.</p>	<p>Under Alternative 1, no roads would be obliterated or reconstructed. Road management would be carried out based on current approvals and the annual operating plan.</p>	<p>Roads within the SUP area, for all action alternatives, were assessed in the Silver Creek Watershed Condition Assessment (Jones &amp; Stokes Associates, 1997). Under the Action Alternatives, the Crystal Mountain SUP area would realize a net loss of road mileage in Riparian Reserves (see FEIS Table 4.2.2-1). The acreage of road obliteration would be as follows:</p> <ul style="list-style-type: none"> <li>• Alternative 2 - 3.13 acres</li> <li>• Alternative 3 - 3.17 acres</li> <li>• Alternatives 4-6 and Selected Alternative – 3.21 acres</li> </ul> <p>Under the Action Alternatives, culverts would be sized to pass the 100-year flow, debris and fish passage (see FEIS Table 2.4-2 , WS1). In addition, replacement of culverts based on monitoring of culvert conditions would include the 100-year-flow requirement. All Action Alternatives include obliteration of roads in RRs as a means of maintaining or improving the condition of RRs in the SUP area. Prioritization of road obliteration would be carried out based on monitoring of roads in the SUP area, as described in the <i>Road Management Plan</i> (FEIS Appendix E), as well as the phasing of MDP projects. Opportunities to obliterate roads would be coupled with ongoing construction projects to the extent possible. The <i>Road Management Plan</i> addresses monitoring and identification of at-risk roads or drainage structures, as well as methods for restructuring these facilities.</p>					

**Table ROD-5**  
**Summary Comparison of Environmental Consequences**

Parameter	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6	Selected Alternative
<p><b>RF-4</b> – New culverts, bridges and other stream crossings shall be constructed, and existing culverts, bridges and other stream crossings determined to pose a substantial risk to riparian conditions will be improved, to accommodate at least the 100-year flood, including associated bedload and debris. Priority for upgrading will be based on the potential impact and the ecological value of the riparian resource affected. Crossings will be constructed and maintained to prevent diversion of streamflow out of the channel and down the road in the event of a crossing failure.</p>	<p>Under Alternative 1, no new culverts or bridges would be constructed. No watershed related management plans would be implemented.</p>	<p>Under the Action Alternatives, culverts would be sized to pass the 100-year flow, debris and fish passage (see FEIS Table 2.4-2 , WS1). In addition, replacement of culverts based on monitoring of culvert conditions would include the 100-year-flow requirement. The Road Management Plan FEIS (Appendix E) and Watershed Restoration Plan (FEIS Appendix C) have been developed to address road management and watershed restoration specifically for the Crystal Mountain MDP and other Action Alternatives. The Monitoring Framework Plan (FEIS Appendix D) would insure proper monitoring of watershed processes, including channel flow conditions at stream crossings (see Measure WS 33 in FEIS Table 2.4-2).</p>					

**Table ROD-5**

**Summary Comparison of Environmental Consequences**

<b>Parameter</b>	<b>Alternative 1</b>	<b>Alternative 2</b>	<b>Alternative 3</b>	<b>Alternative 4</b>	<b>Alternative 5</b>	<b>Alternative 6</b>	<b>Selected Alternative</b>
<b>RF-5</b> – minimize sediment delivery to streams from roads. Outsloping of the roadway surface is preferred, except in cases where outsloping would increase sediment delivery to streams or where outsloping in unfeasible or unsafe. Route road drainage away from potentially unstable channels, fills, and hillslopes.	Under Alternative 1, no new watershed related management plans would be implemented.	Under the Action Alternatives, all new roads would be sloped to drain away from potentially unstable channels, fills, and hillslopes so that sediment from roads would not be transported to these areas (refer to FEIS Appendix E). For all construction activities, a Stormwater Pollution Prevention Plan (SWPPP) would be prepared to direct the use of Best Management Practices (BMPs), which would minimize sediment impacts during road construction. Implementation of the Road Management Plan (FEIS Appendix E) would minimize sediment delivery to streams from existing roads.					
<b>RF-6</b> – Provide and maintain fish passage at all road crossings of existing and potential fish-bearing streams.	Under Alternative 1, fish passage conditions would remain unchanged and existing fish barriers would remain unchanged.	Under the Action Alternatives, no new fish barriers would occur on fish bearing streams. Implementation of the Watershed Restoration Plan (FEIS Appendix C), Road Management Plan (FEIS Appendix E) , Monitoring Framework Plan (FEIS Appendix D), and Silver Creek Stabilization Plan (FEIS Appendix I) would help maintain channel conditions at Crystal Mountain to ensure fish passage at current locations where fish are present. Existing fish barriers would remain unchanged.					



**Table ROD-5**

**Summary Comparison of Environmental Consequences**

<b>Parameter</b>	<b>Alternative 1</b>	<b>Alternative 2</b>	<b>Alternative 3</b>	<b>Alternative 4</b>	<b>Alternative 5</b>	<b>Alternative 6</b>	<b>Selected Alternative</b>
<p><b>RF-7</b> – Develop and implement a Road Management Plan or a Transportation Management Plan that will meet the ACS objectives. As a minimum, this plan shall include provisions for the following activities: a) inspections and maintenance during storm events, b) inspections and maintenance after storm events, c) road operation and maintenance, giving high priority to identifying and correcting road drainage problems that contribute to degrading riparian resources, d) traffic regulation during wet periods to prevent damage to riparian resources, and e) establish the purpose of each road by developing the Road Management Objective.</p>	<p>Under Alternative 1, no road management plan would be implemented.</p>	<p>A Road Management Plan (FEIS Appendix E) has been developed specifically for the Crystal Mountain MDP and other Action Alternatives. The Road Management Plan addresses inspection and maintenance during and after storm events. The Road Management Plan also provides a basis for prioritizing road maintenance activities, provides for use guidelines based on road conditions and details the purpose of use for roads in the SUP area (e.g., maintenance, access), Additional management constraints that would be implemented, as described in FEIS Table 2.4-2. For all construction activities, a Stormwater Pollution Prevention Plan (SWPPP) would be prepared to direct the use of Best Management Practices (BMPs), which would minimize sediment impacts during road construction.</p>					

**Table ROD-5**

**Summary Comparison of Environmental Consequences**

Parameter	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6	Selected Alternative
<p><b>RM-1</b> – New Recreational Facilities within Riparian Reserves, including trails and dispersed sites, should be designed to not prevent meeting ACS objectives. For existing recreation facilities within Riparian Reserves, evaluate and mitigate impact to ensure that these do not prevent, and to the extent practicable, contribute to attainment of ACS objectives.</p>	<p>Under Alternative 1, no MDP development would take place in Riparian Reserves other than already approved projects. Past and ongoing activities would occupy approximately 2.57% of the Riparian Reserves in the 5th field Upper White River Watershed (Table 4.2.7-10). No new watershed management or restoration plans would be implemented.</p>	<p>New recreational facilities within Riparian Reserves vary by Alternative (See Riparian Reserve section in this table). With implementation of the Road Management Plan (FEIS Appendix E), Watershed Restoration Plan (FEIS Appendix C), Monitoring Framework Plan (FEIS Appendix D), and Silver Creek Stabilization Plan (FEIS Appendix I), Riparian Reserve conditions would be expected to be maintained or improved over the current condition. For example, the watershed restoration projects outlined in FEIS Appendix C provide for restoration of existing at-risk or disturbed sites, including soil amendments and restoration of vegetative cover in Riparian Reserves. The reach of Silver Creek along Parking Lot B would be stabilized (refer to FEIS Appendix I) to reduce ongoing bank erosion and downcutting, along with the establishment of riparian vegetation along the slopes and a portion of the parking lot adjacent to the stream. Implementation of the Monitoring Framework Plan would be ongoing throughout the life of the approved MDP, providing for evaluation of the condition of Riparian Reserves in the SUP area, and adaptive management, as necessary. Additional management constraints would be implemented, as described in FEIS Table 2.4-2. For all construction activities, a Stormwater Pollution Prevention Plan (SWPPP) would be prepared to direct the use of Best Management Practices (BMPs), which would minimize sediment impacts during road construction.</p> <p>All Action Alternatives would result at site scale impacts within Riparian Reserves, increasing cumulative Riparian Reserve impacts (i.e. conversion of Riparian Reserves from the natural, forested state to another vegetated or disturbed state) from 2.57% of the Reserve acreage in the 5th field Upper White River watershed to the following:</p> <ul style="list-style-type: none"> <li>• Alternatives 2 and 3 – 3.26%</li> <li>• Alternative 4 – 3.18%</li> <li>• Alternative 5 – 3.05%</li> <li>• Alternative 6 and Selected Alternative– 3.14%</li> </ul> <p>(Refer to FEIS Table 4.2.7-10).</p>					

**Table ROD-5**  
**Summary Comparison of Environmental Consequences**

Parameter	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6	Selected Alternative
<b>RM-2</b> – Adjust dispersed and developed recreation practices that retard or prevent attainment of ACS objectives. Where adjustment measures such as education, use limitations, traffic control devices, increased maintenance, relocation of facilities, and/or specific site closures are not effective, eliminate the practice or occupancy.	See RM-1						
<b>FM-1</b> - Design Fuel treatment and fire suppression strategies, practices, and activities to meet ACS objectives, and to minimize disturbance or riparian round cover and vegetation. Strategies should recognize the role of fire in ecosystem function and identify those instances where fire suppression or fuels management activities could be damaging to long-term ecosystem function	Under Alternative 1, no new timber removal and slash burning would take place, other than previously approved projects.	Under the Action Alternatives, the Vegetation Management Plan (FEIS Appendix F) would guide vegetation management, including fuel treatments. As described in FEIS Table 2.4-1, lift and trail construction would include Best Management Practices in order to reduce the impacts of the clearing prescriptions on Riparian Reserves and other sensitive areas. These include: yarding over the snow, heli-logging, lop and scatter where fuel loads permit, and hand excavation of tower footings, where feasible. FEIS Table 2.4-2 presents additional Management Requirements, Constraints and Mitigation Measures, including R4 – 8, and R11. R11 specifically states that “no access corridors, staging areas, spoils piles, or other construction-related materials will be sited within native Riparian Reserves, except where such communities are due to be removed as part of the project under construction.”					

**Table ROD-5**

**Summary Comparison of Environmental Consequences**

<b>Parameter</b>	<b>Alternative 1</b>	<b>Alternative 2</b>	<b>Alternative 3</b>	<b>Alternative 4</b>	<b>Alternative 5</b>	<b>Alternative 6</b>	<b>Selected Alternative</b>
<b>RA-1</b> – Identify and attempt to secure in-stream flows needed to maintain riparian resources, channel conditions, and aquatic habitat.	Under Alternative 1, no new groundwater withdrawals would occur, other than previously approved projects.	Under the Action Alternatives, no new groundwater withdrawals would occur. As described in measures WS9 (FEIS Table 2.4-2), snowmaking withdrawals would not be allowed to reduce flows in Silver Creek below the 25 <sup>th</sup> percentile flow, and at no more than 1cfs. Based on the Range of Variability Analysis (RVA) the existing streamflow dynamics in Silver Creek (site scale) would be maintained (see FEIS Appendix L – Final Technical Memorandum on Streamflow Analysis for Silver Creek).					
<b>RA-2</b> – Fell trees in Riparian Reserves when they pose a safety risk. Keep felled trees on-site when needed to meet coarse woody debris objectives.	Under Alternative 1, no new timber removal and slash burning would take place, other than previously approved projects. Removal of trees in RRs for previously approved projects would be conducted as approved in the approval Decision Notice. Hazard trees would be removed under the existing operating plan.	With implementation of the Action alternatives, measures R6 and R7 in FEIS Table 2.4-2 would specifically provide that trees would only be felled in Riparian Reserves for construction of approved projects or for safety reasons. Where possible, these trees would be felled where they can be left on the ground. Further, LWD would only be removed from Riparian Reserves for safety reasons.					

**Table ROD-5**  
**Summary Comparison of Environmental Consequences**

Parameter	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6	Selected Alternative
<b>RA-3</b> – Herbicides, insecticides, and other toxicants, and other chemicals shall be applied only in a manner that avoids impacts that retard or prevent attainment of Aquatic Conservation Strategy objectives.	All alternatives include no use of herbicides, insecticides, toxicants, or other chemicals. To avoid the spread of weeds during construction and restoration projects under all alternatives, all vehicles and equipment doing work outside the limits of the road surface or in infested areas will follow appropriate BMPs listed in the <i>EA for Noxious Weed Management on the Mt. Baker-Snoqualmie National Forest</i> (USFS, 1999), the mediated agreement (1989), relevant portions of the <i>Final EIS for Managing Competing and Unwanted Vegetation</i> (USFS, 1988), and the Action Alternatives include mitigation guidelines contained in Section 2.4 of the FEIS.						
<b>RA-4</b> – Locate water drafting sites to minimize adverse effects on stream channel stability, sedimentation, and in-stream flows needed to maintain riparian resources, channel conditions, and fish habitat.	Under Alternative 1, existing suitable water drafting sites (i.e., snowmaking and irrigation) would remain under the current conditions.	Under the Action Alternatives, the water drafting site on Silver Creek would be upgraded to accommodate additional snowmaking withdrawals. As described in Measure W11 (FEIS Table 2.4-2), the intake would be sited and protected to prevent the entrainment of fish, as approved by WDFW and WDOE. As described in Measure WS9 (FEIS Table 2.4-2), snowmaking withdrawals would not be allowed to reduce flows in Silver Creek below the 25 <sup>th</sup> percentile flow, and at no more than 1cfs. Based on the Range of Variability Analysis (RVA) the existing streamflow dynamics in Silver Creek (site scale) would be maintained (see FEIS Appendix L – Final Technical Memorandum on Streamflow Analysis for Silver Creek).					
<b>WR-1</b> – Design and implement watershed restoration projects in a manner that promotes long-term ecological integrity of ecosystems, conserves the genetic integrity of native species, and attains ACS objectives.	Under Alternative 1, no new watershed management or restoration plans would be implemented.	Under all action alternatives, implementation of the Watershed Restoration Plan (see FEIS Appendix C), Silver Creek Stabilization Plan (see FEIS Appendix I), and the Monitoring Framework Plan (see FEIS Appendix D) would occur and along with the management requirements, constraints, and mitigation measures (see FEIS Table 2.4-2), would help maintain the long-term ecological integrity of the Silver Creek watershed (6 <sup>th</sup> field). Under Alternatives 3, 4, and 6 the existing tennis court would be removed and the associated 0.6 acre of Riparian Reserves would be restored. Restoration under Alternative 5 would include the 0.6 acre restoration from Alternative 3, along with a reduction in size of Parking Lots B and F (as compared to the Proposed Action) to provide for approximately 1.2 acres of additional restoration along Silver Creek.					

**Table ROD-5**

**Summary Comparison of Environmental Consequences**

<b>Parameter</b>	<b>Alternative 1</b>	<b>Alternative 2</b>	<b>Alternative 3</b>	<b>Alternative 4</b>	<b>Alternative 5</b>	<b>Alternative 6</b>	<b>Selected Alternative</b>
<b>WR-2</b> – Cooperate with federal, state, local, and tribal agencies, and private landowners to develop watershed-based Coordinated Resource Management Plans or other cooperative agreements to meet ACS objectives.	Under Alternative 1, no new watershed management or restoration plans would be implemented.	FEIS Table 1.7-1 lists the federal, state, local, and tribal agencies that permits need to be obtained from during the implementation of the Crystal Mountain MDP. The management requirements, constraints, and mitigation measures listed in FEIS Tables 2.4-2 and 2.4-3 as well as the Vegetation Management Plan (FEIS Appendix F). Watershed Restoration Plan (FEIS Appendix C), Silver Creek Stabilization Plan (FEIS Appendix I), and the Monitoring Framework Plan (FEIS Appendix D) were created in conjunction with input from cooperating federal agencies. The management plans were updated between the DEIS and FEIS to incorporate comments from other federal, state, local, and tribal agencies.					
<b>WR-3</b> – Do not use mitigation or planned restoration as a substitute for preventing habitat degradation.	Under Alternative 1, there would be no new impacts to Riparian Reserves.	Under the Action Alternatives, impacts to Riparian Reserves have been minimized to the extent practicable. FEIS Appendix A presents modifications to the Crystal Mountain MDP and alternative project alignments that were considered, but eliminated based on environmental effects, including clearing and/or grading in Riparian Reserves. The Action Alternatives include the Vegetation Management Plan (FEIS Appendix F). Watershed Restoration Plan FEIS (Appendix C), Silver Creek Stabilization Plan (FEIS Appendix I), and the Monitoring Framework Plan (FEIS Appendix D), regardless of the range of impacts to Riparian Reserves, individual project alignment or other MDP related elements. As such, these plans are intended to work in conjunction with avoidance and minimization of Riparian Reserve impacts in order to help maintain or improve watershed conditions.					
<b>FW-1</b> – Design and implement fish and wildlife habitat restoration and enhancement activities in a manner that contributes to attainment of ACS objectives.	Under Alternative 1, no new watershed management or restoration plans would be implemented.	Under the Action Alternatives, implementation of the Watershed Restoration Plan (FEIS Appendix C), Silver Creek Stabilization Plan (FEIS Appendix I), Vegetation Management Plan (FEIS Appendix F), and the Monitoring Framework Plan (FEIS Appendix D) would occur and along with the management requirements, constraints, and mitigation measures (see FEIS Table 2.4-2), the long-term ecological health of wildlife and fisheries habitat would be maintained or improved.					

**Table ROD-5**  
**Summary Comparison of Environmental Consequences**

<b>Parameter</b>	<b>Alternative 1</b>	<b>Alternative 2</b>	<b>Alternative 3</b>	<b>Alternative 4</b>	<b>Alternative 5</b>	<b>Alternative 6</b>	<b>Selected Alternative</b>
<b>FW-4</b> – Cooperate with federal, tribal, and state fish management agencies to identify and eliminate impacts associated with habitat manipulation, fish-stocking, harvest and poaching that threaten the continued existence and distribution of native fish stocks occurring on federal lands.	See WR-2.						
<b>Air Quality</b>							
Exceed 1-hour CO Standard?	No	No	No	No	No	No	No
Exceed 24-hr PM2.5 Standard?	No	No	No	No	No	No	No
Exceed 24-hr PM10 Standard?	No	No	No	No	No	No	No
Exceed Class 1 Visibility Criteria?	No	No	No	No	No	No	No
<b>Heritage Resources</b>							
NRHP-eligible Heritage Resources affected?	No	Yes - mitigated	No	No	Yes - mitigated	Yes - mitigated	No
Non-eligible Heritage Resources affected?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
NRHP-eligible Traditional Cultural Heritage Resources affected?	No	No	No	No	No	No	No
Non-eligible Traditional Cultural Heritage Resources affected?	May	May	May	May	May	May	May

**Table ROD-5  
Summary Comparison of Environmental Consequences**

Parameter	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6	Selected Alternative
Potential effects to tribal hunting, gathering, and fishing practices: (see Wildlife and Fisheries sections)							
<b>Recreation</b>							
Annual Visitation (full build-out)	437,084	747,840	729,580	577,580	719,660	742,390	742,390
Winter Alpine visits	391,400	563,400	546,800	513,000	537,600	557,900	557,900
Winter Non-alpine visits	23,484	56,340	54,680	30,780	53,760	55,790	55,790
Summer Visits	22,200	128,100	128,100	33,800	128,300	128,700	128,700
Alpine Ski Area Capacity (CCC)	7,460	11,020	10,590	9,980	9,780	10,170	9,740
Lift/Trail Capacity (SAOT)	7,120	10,990	10,550	9,840	9,450	10,040	9,600
Backcountry Capacity (SAOT)	340	30	40	140	330	130	140
Mount Rainier National Park:							
Winter Boundary	Open	Closed	Closed	Closed	Closed	Closed	Closed
Avalanche Control	Yes	No	No	No	No	No	No
Norse Peak Wilderness:							
Winter Boundary	Open	Closed	Closed	Closed	Closed	Closed	Closed
Avalanche Control	No	No	No	No	No	No	No
<b>Visual Resources</b>							
Prescribed VQO met at:							
CMB, Parking, Base Area	Yes - middle ground VQO of modified	Yes - middle ground VQO of modified	Yes - middle ground VQO of modified	Yes - middle ground VQO of modified	Yes - middle ground VQO of modified	Yes - middle ground VQO of modified	Yes - middle ground VQO of modified
Lower Mountain Lifts/Trails	Yes – middle-ground VQO of <i>partial retention</i> (PR)	Yes – middle-ground VQO of PR	Yes – middle-ground VQO of PR	Yes – middle-ground VQO of PR	Yes – middle-ground VQO of PR	Yes – middle-ground VQO of PR	Yes – middle-ground VQO of PR
Kelly’s Gap Express	Yes – PR	Yes – PR	Yes – PR	Yes – PR	Yes – PR	Yes – PR	Yes – PR



**Table ROD-5  
Summary Comparison of Environmental Consequences**

<b>Parameter</b>	<b>Alternative 1</b>	<b>Alternative 2</b>	<b>Alternative 3</b>	<b>Alternative 4</b>	<b>Alternative 5</b>	<b>Alternative 6</b>	<b>Selected Alternative</b>
Summit Tram	Yes – PR	Yes – PR	Yes – PR	Yes – PR	Yes – PR	Yes – PR	Yes – PR
Silver King Lift and Trails	Yes – PR	Yes – PR	Yes – PR	Yes – PR	Yes – PR	Yes – PR	Yes – PR
Crystal Mountain Summit	Yes – PR	Yes – PR	Yes – PR	Yes – PR	Yes – PR	Yes – PR	Yes – PR
Snorting Elk Lift	Yes – PR	Yes – PR	Yes – PR	Yes – PR	Yes – PR	Yes – PR	Yes – PR
Morning Glory/North Country	Yes – PR	Yes – PR	Yes – PR	Yes – PR	Yes – PR	Yes – PR	Yes – PR
East Peak	Yes – PR	Yes – PR	Yes – PR	Yes – PR	Yes – PR	Yes – PR	Yes – PR
Night Skiing	Yes – PR	Yes – PR	Yes – PR	Yes – PR	Yes – PR	Yes – PR	Yes – PR
Restoration Areas	Yes – PR	Yes – PR	Yes – PR	Yes – PR	Yes – PR	Yes – PR	Yes – PR
Architecture	Upgrade existing Structures to Cascadian Style	Upgrade existing Structures to Cascadian Style - New Structures in Cascadian Style					
<b>Social and Economic Factors</b>							
Environmental Justice	No disproportionately high adverse human health and/or environmental effects on minorities or low-income populations.	Disproportionately high environmental effects on the Muckleshoot Indian Tribe. No disproportionate adverse human health and/or environmental effects on other minorities or low-income populations.					
Employee Housing Demand:							
Total Employment	510	896	873	802	870	895	895
Resort workers living on-site	85	190	190	190	143	190	190

**Table ROD-5**  
**Summary Comparison of Environmental Consequences**

Parameter	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6	Selected Alternative
Resort workers living off-site	425	611	588	517	727	610	610
Total Est. housing demand	304	436	420	369	519	436	436
Increased offsite housing req'd.	40	172	156	105	255	172	172
Development Costs (MM):	\$1.38	\$97.08	\$93.65	\$73.66	\$92.33	\$94.05	\$94.05
Spent within impact area	\$1.38	\$66.23	\$64.13	\$62.25	\$63.78	\$65.12	\$65.12
Spent outside impact area	\$0.00	\$30.85	\$29.51	\$11.41	\$27.55	\$28.93	\$28.93
Estimated Construction-Related Short-Term Employment							
Direct	94	547	530	512	533	546	546
Indirect	54	254	246	238	247	251	251
Induced	47	241	232	225	233	238	238
<b>FTE Total</b>	<b>195</b>	<b>1,042</b>	<b>1,008</b>	<b>975</b>	<b>1,013</b>	<b>1,035</b>	<b>1,035</b>
Estimated Long-term Employment (FTE - year 10):							
Crystal Mountain	190	320	310	290	310	320	320
Other Base Area Businesses	112	185	180	160	180	185	185
Off-Site FTE Employment	208	391	383	352	380	390	390
<b>FTE Total</b>	<b>510</b>	<b>896</b>	<b>873</b>	<b>802</b>	<b>870</b>	<b>895</b>	<b>895</b>
Projected visitor spending							
Crystal Mountain Winter	\$18,011	\$30,948	\$30,185	\$28,534	\$30,233	\$31,198	\$31,198
Crystal Mountain Summer	\$266	\$2,989	\$2,989	\$761	\$2,984	\$2,992	\$2,992
Offsite Winter	\$8,864	\$15,877	\$15,515	\$14,707	\$15,329	\$15,794	\$15,794
Offsite Summer	\$77	\$923	\$923	\$348	\$918	\$919	\$919
<b>Total</b>	<b>\$27,217</b>	<b>\$50,736</b>	<b>\$49,611</b>	<b>\$44,350</b>	<b>\$49,464</b>	<b>\$50,903</b>	<b>\$50,903</b>
Resort expenses (\$000 – year 10):	\$3,425	\$6,375	\$6,200	\$5,435	\$6,220	\$6,430	\$6,430

**Table ROD-5**  
**Summary Comparison of Environmental Consequences**

Parameter	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6	Selected Alternative
Payroll taxes	\$775	\$1,895	\$1,845	\$1,615	\$1,850	\$1,910	\$1,910
Property and other taxes	\$19	\$38	\$380	\$330	\$380	\$390	\$390
<b>Total</b>	<b>\$4,505</b>	<b>\$8,655</b>	<b>\$8,420</b>	<b>\$7,380</b>	<b>\$8,445</b>	<b>\$8,730</b>	<b>\$8,730</b>
Increase in land use fees (percent)	23	125	119	92	119	127	127
<b>Transportation</b>							
Parking Provided	21.6	34.4	33.5	28.6	30.9	32.2	30.8
Parking Deficit (acres)	2	0.5	0	3	0	0	0
Comfortable parking (percent)	25	58.7	58.2	68.2	73.8	71.7	73.7
Ski Season shuttle rides per day	-	5,000	4,800	3,500	2,800	3,200	3,200
SR 410 Winter Accidents per year	63.2	78	78	72	77	75	75
Elk Kills (avg. # per year) <sup>7</sup>	7.6	9.2	9.2	8.5	9.1	8.9	8.9
Summer ADT (SR 410)	3,383	3,619	3,619	3,409	3,619	3,620	3,619
SR 410 Volumes (Buckley)							
Winter Weekend AM Peak Hour Volumes (SR 410 near Buckley)	458	684	96% of Alt 2 increase	91% of Alt 2 increase	89% of Alt 2 increase	92% of Alt 2 increase	648
Winter Weekend PM Peak Hour Volumes (SR 410 near Buckley)	778	701	96% of Alt 2 increase	91% of Alt 2 increase	89% of Alt 2 increase	92% of Alt 2 increase	713
Summer Weekend AM Peak Hour Volumes (SR 410 near Buckley)	130	166	96% of Alt 2 increase	91% of Alt 2 increase	89% of Alt 2 increase	92% of Alt 2 increase	160

<sup>7</sup> Based in part upon unpublished work © 2002 Muckleshoot Indian Tribe. This research is one part of a collective work in progress with conclusions subject to revision as data are accumulated and refined.

**Table ROD-5**  
**Summary Comparison of Environmental Consequences**

Parameter	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6	Selected Alternative
Summer Weekend PM Peak Hour Volumes (SR 410 near Buckley)	431	451	96% of Alt 2 increase	91% of Alt 2 increase	89% of Alt 2 increase	92% of Alt 2 increase	448
<b>SR 164 Volumes (Auburn)</b>							
Winter Weekend AM Peak Hour Volumes (SR 164 near Auburn)	404	499	96% of Alt 2 increase	91% of Alt 2 increase	89% of Alt 2 increase	92% of Alt 2 increase	484
Winter Weekend PM Peak Hour Volumes (SR 164 near Auburn)	404	390	96% of Alt 2 increase	91% of Alt 2 increase	89% of Alt 2 increase	92% of Alt 2 increase	392
<b>Utilities</b>							
Domestic Water Storage (gal)	330,000	570,000	570,000	570,000	570,000	570,000	570,000
Wastewater Disposal Method	subsurface	snowmaking/irrigation	snowmaking/irrigation	snowmaking/irrigation	subsurface	subsurface	subsurface
Electric power demand (mw)	4.5	11	11	11	11	11	11
Fuel storage Tanks (number)	13	13	13	13	13	13	13
Propane Storage (gallons)	18,000	36,030	36,020	36,010	36,010	36,020	36,020
Propane Use (gallons per year)	60,000	180,000	180,000	180,000	180,000	180,000	180,000
Solid Waste (tons per year)	331.6	537.6	523.3	447.1	515.4	533.2	533.2
<b>Noise</b>							
Peak Construction Sound at 50-foot distance from construction.	-	93 dBA	93 dBA	93 dBA	93 dBA	93 dBA	93 dBA
Effect of Operations	Similar to operations today (Year 2003)	Similar to operations today (Year 2003) with increase in noise due to increased traffic and facilities.					

**Table ROD-5**  
**Summary Comparison of Environmental Consequences**

Parameter	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6	Selected Alternative
<b>Land Use</b>							
National Forest System Land:							
AWAs	Consistent	Consistent	Consistent	Consistent	Consistent	Consistent	Consistent
Riparian Reserves	Previously-approved projects in RRs	Previously Approved and MDP projects in RR's (see Riparian Reserves – above)					
Tier 1 Key Watershed	Previously-approved projects in Tier 1 Key Watershed (see Fisheries – above)	Previously Approved and MDP projects in Tier 1 Key Watershed (see Fisheries – above)					
Private Land In-holdings:							
Gold Hill	No effect on Land Use	No effect on Land Use					
Eagle's Lair	No effect on Land Use	Potential for increased recreational demand – no effect on Land Use					
Pierce County Allocations	No effect						
Crystal Mountain Sewer District	All wastewater facilities would be located within the District						
Lands Adjacent to or near the Crystal Mountain SUP							
<i>MA 1B Dispersed Recreation – Semi-Primitive Nonmotorized</i>	No direct effects	550-acre parcel would be reallocated from Administratively Withdrawn MA 3C and Riparian Reserve, to Administratively Withdrawn MA 1B and Riparian Reserve					
<i>MA 2A Scenic Viewshed - Foreground</i>	No effects	No direct effects on Land Use-Power line (Utility corridor - MA 25) within MA 2A would include larger conductors.					
<i>MA 25 Utility Corridors</i>	No effects	Upgraded power utilities would be consistent					
<i>MA 15A Mountain Goat Habitat – Management Requirements</i>	No effects	No effects					
Norse Peak Wilderness	No effects	No direct effects – potential for increased dispersed recreation demand (within LACs for the Wilderness)					

**Table ROD-5**  
**Summary Comparison of Environmental Consequences**

<b>Parameter</b>	<b>Alternative 1</b>	<b>Alternative 2</b>	<b>Alternative 3</b>	<b>Alternative 4</b>	<b>Alternative 5</b>	<b>Alternative 6</b>	<b>Selected Alternative</b>
Mount Rainier National Park	No effects	No direct effects–potential for increased dispersed recreation demand (consistent with “pristine” zone in the GMP)					
Lands Along SR 410:							
National Forest System Lands	No effects	No effects					
Private Lands	No effects	No effects					

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