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Forest
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Environmental Assessment

Ski Hill Improvements Project

Wenatchee River Ranger District, Okanogan-Wenatchee National Forest
Chelan County, Washington
Township 25 North, Range 17 East, Section 36, WM.



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SUMMARY

The project area is located in the Ski Hill area and is within the Wenatchee River Ranger District, Okanogan-Wenatchee National Forest, and Chelan County in Washington State. This action is needed to make improvements that will increase the lifespan of the lodge, reduce erosion issues around the lodge, improve safety around the lodge and on the ski slope, make the facility more accessible, provide additional outdoor gathering space, improve service, operations and maintenance, and enhance the ability of the public to appreciate the historic areas of the Ski Hill area.

CHAPTER 1: INTRODUCTION

Document Structure

The Forest Service has prepared this Environmental Assessment in compliance with the National Environmental Policy Act (NEPA) and other relevant Federal and State laws and regulations. This Environmental Assessment discloses the direct, indirect, and cumulative environmental impacts that would result from the proposed action and two alternatives. The document is organized into four parts:

Chapter 1: Introduction: The section includes information on the history of the project proposal, the purpose of and need for the project, and the agency's proposal for achieving that purpose and need. This section also details how the Forest Service informed the public of the proposal and how the public responded.

Chapter 2: Comparison of Alternatives, including the Proposed Action: This section provides a more detailed description of the agency's proposed action as well as alternative methods for achieving the stated purpose. These alternatives were developed based on significant issues raised by the public and other agencies. This discussion also includes mitigation measures. Finally, this section provides a summary table of the environmental consequences associated with each alternative.

Chapter 3: Environmental Consequences: This section describes the environmental effects of implementing the proposed action and other alternatives. This analysis is organized by resource area. Within each section, the important interactions are described first, followed by the effects of the No Action Alternative that provides a baseline for evaluation and comparison of the other alternatives that follow.

Chapter 4: Agencies and Persons Consulted: This section provides a list of preparers and agencies consulted during the development of the environmental assessment.

Appendices: The appendices provide more detailed information to support the analyses presented in the environmental assessment.

Additional documentation, including more detailed analyses of project-area resources, may be found in the project planning record located at the Wenatchee River Ranger District Office in Leavenworth, Washington.

Background

The Ski Hill Lodge was built in the early 1930's and has been managed and operated under a Special Use Permit by the Leavenworth Winter Sports Club (LWSC) since. The Ski Hill site has contributed to the development and promotion of ski jumping both at the national and international levels. The historic lodge and ski area have continued to see an increase in visitation over the years. The demand for recreational opportunities has increased, thus requiring continual maintenance and much needed upgrades to the lodge and ski area amenities.

The Ski Hill Improvements project was initially conceived in 2013 by the Leavenworth Winter Sports Club as an effort to protect the heritage and tradition of skiing at the Leavenworth Ski Hill so future

generations can share the excitement, beauty, and community of skiing. The proposed project included a variety of upgrades to the Leavenworth Ski Hill lodge and surrounding area including those that would upgrade and enhance Ski Hill Lodge infrastructure, provide additional outdoor space for people to gather and complement the Lodge facilities, improve safety, and maintain and enhance ski area facilities.

The LWSC met with the U.S. Forest Service to discuss the purpose of the project and the desired outcomes. The USFS was amenable to the project and developed an Interdisciplinary Team (IDT) for the environmental analysis of the Leavenworth Ski Hill Improvements project. The team developed a purpose and need, proposed action, and sent out scoping letters by the end of January, 2014. As a result of district turnover and two severe fire seasons the project stalled in the latter part of 2014. In the interim a categorical exclusion was completed to allow the LWSC to complete the electrical upgrades found in the initial proposal. A decision was also made by LWSC per USFS recommendations that the proposed action of installing a new water hydrant for the purpose of snow making and firefighting capabilities was not feasible due to the insufficient water capacity from the existing well. In January of 2016 the USFS IDT was reconvened and forward progress was reestablished to complete the project.

Management Direction

This project implements (is tiered to) the Final Environmental Impact Statement for the Wenatchee National Forest Land and Resource Management Plan (USDA Forest Service 1990) as amended by the Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl and the Standards and Guidelines for Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl (Northwest Forest Plan - NWFP) (USDA and USDI 1994) as subsequently amended in 2001; hereafter known as the Forest Plan. This project is covered under the administrative review process for non-HFRA projects as described by 36 CFR 218 Subparts A and B.

The Final Environmental Impact Statement and Record of Decision for Pacific Northwest Region Invasive Plant Program, Preventing and Managing Invasive Plants (USDA Forest Service 2005a, 2005b) also amended the Forest Plan. This FEIS provides prevention and restoration standards, and new tools to control current invasive plant infestations, while protecting human health and the environment from adverse effects of invasive plant treatment. Prevention standards and treatment restoration standards are applied in the Ski Hill project area and are discussed in Chapter 2's Invasive Plant Design Criteria/Mitigations.

The Forest Plan established land management allocations for the Ski Hill Improvements Project area (see Wenatchee Forest Plan Allocations Map and Northwest Forest Plan Allocations Map, Figure A.1 in Appendix A), which are as follows:

Matrix / General Forest (GF). The Matrix is where most timber harvest and other silvicultural activities would be conducted under the NWFP. General Forest lands include the rest of Freund Canyon within the project area. The Forest Plan goals for this allocation are to provide for long-term growth and production of commercially valuable wood products at a high level of investment in silvicultural practices. The visual quality objective is maximum modification and trail construction should avoid affecting silvicultural practices. The Recreation Opportunity Spectrum objective range from Roaded Natural to Urban.

Matrix / Scenic Travel-Partial Retention (ST-2). The Matrix is where most timber harvest and other silvicultural activities would be conducted under the NWFP. Scenic Travel lands include The Ski Hill side of the project area, excluding the ski area and Nordic trails. The Forest Plan goals for this allocation are to provide a naturally appearing foreground and middle ground along scenic travel corridors. The

visual quality objective is partial retention. Trail construction and reconstruction projects should meet partial retention criteria as viewed from roads or viewpoints which in this case would be Ski Hill Drive and the City of Leavenworth. The Recreation Opportunity Spectrum objective is Roded Natural.

Administratively Withdrawn / Developed Recreation (RE-1). Administratively Withdrawn Areas are identified in current Forest Plans as recreation areas where management emphasis precludes scheduled timber harvest. Developed Recreation lands include the Leavenworth Ski Hill Alpine Ski Area and Nordic Trails. The visual quality objective is retention and trail construction needs to meet Forest-wide standards and guidelines. The Recreation Opportunity Spectrum objective ranges from Semi-Primitive to Urban.

Northwest Forest Plan

Matrix – 550 acres

Administratively Withdrawn Area – 97 acres

Wenatchee National Forest Plan

General Forest – 347 acres

Scenic Travel-Partial Retention– 203 acres

Developed Recreation – 97 acres

There are no inventoried roadless areas, potential wilderness areas or classified wilderness areas within or adjacent to the Ski Hill Improvements project area.

Desired Future Condition:

The desired future condition on the Forest is to update facilities and infrastructure to accommodate increased use and improve safety (USDA Forest Service, 1990). At Ski Hill the desired future condition is to offer a more inviting recreational experience for visitors by providing improved facilities and a safer experience for visitors at Ski Hill.

Purpose and Need for Action

The Ski Hill Lodge was built in the early 1930's and is a showcase for CCC innovation and construction during a difficult and important era in the history of the United States. Since its construction, it has been managed and operated under a Special Use Permit by the Leavenworth Winter Sports Club. The area was one of the earliest Forest Service recreational sites in the Pacific Northwest and it played a major role in the development of recreation in the Forest Service. Over the years, the historic Lodge and Ski Area have continued to see an increase in visitation as outdoor recreation has blossomed in popularity and as the town of Leavenworth has grown into a tourist destination. As a result, the demand for recreational opportunities has increased, thus requiring maintenance and much needed upgrades to offer amenities that meet today's standards and continue to ensure a safe and pleasurable experience for all. As a result of being listed on the National Register, all proposed improvement actions will be in compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, and the Forest's Programmatic Agreement regarding cultural resource management on national forests in Washington State (1997).

The Ski Hill Lodge has been status quo for a number of years and has had minimal work done to maintain its current amenities, let alone improve them to a standard needed to support the use it receives currently. In May, 1985, the septic system was upgraded with a new drain field that was connected to the existing septic tank system. The restrooms have been the same for a number of decades except for changing the toilet, urinal and sink fixtures. Current restrooms are in poor condition and none are ADA accessible to meet the varying needs of a diverse user group. The kitchen has been unchanged for a number of decades with the only upgrades being Formica countertops and a single commercial

refrigerator. The kitchen lay-out, equipment and present septic system prevent the ability to change from a simple prepared food menu to a more versatile cooking menu that the public is looking for. Not only does this limit the choices for the guests, but also creates a challenging financial model for the LWSC. Recently there has been an increase in requests for use of the Ski Hill Lodge for weddings, receptions and meetings, but existing conditions and amenities creates limitations for facility renters and the LWSC. Presently the only designated gathering space is inside the lodge and its limited capacity becomes quickly crowded during times of high use, again limiting the versatility of the Lodge and impacting the overall experience of users.

Existing winter recreation conditions on the Bunny Hill are less than desirable as a result of a poorly sloped hill that funnels all skiers into the same area. This poses a potential safety issue for recreationalists and impacts the skiing experience. The current rope tow anchor spars on both ski hills consist of live trees which do not meet current standards and have been identified by Tramway Engineers as needing to be replaced.

Proposed Action

The Ski Hill Improvement project proposed by the Leavenworth Winter Sports Club involves improvements that will increase the lifespan of the lodge, improve safety around the lodge and on the ski slope, make the facility more accessible, provide additional outdoor gathering space, improve service, operations and maintenance, and enhance the ability of the public to appreciate the Historic values of the Ski Hill area. The proposed actions will enhance the character defining features of the historic lodge and surrounding landscape, both of which contribute to the significance of the Leavenworth Ski Hill site.

1. Build new patio including propane tank and stairway
2. Build new ADA restroom
3. Repurpose existing bathroom to one unisex accessible bathroom
4. Upgrade lighting
5. Upgrade kitchen appliances and hardware in the interior
6. Resurface existing foot paths leading to the lodge with crushed gravel
7. Move existing woodshed structure to new location
8. Install new septic tank and drain field
9. Re-grade bunny hill
10. Remove trees from Bakke Hill Ski Jump
11. Replace big rope tow top anchor spar
12. Replace little tow spar

Public Involvement and Consultation

A pre-scoping letter was sent to the District NEPA mailing list and other interested parties in January 2014. An official scoping letter was sent out on January 30, 2014 and the proposal was listed in the Schedule of Proposed Actions in the First Quarter of 2014. It described the Purpose and Need for the project, the original Proposed Action and requested comments. A publication of legal notice for scoping went out in the Wenatchee World newspaper on January 31, 2014, marking the beginning of a 45 day comment period for the public. No public comments were received in the 45 day comment period for the proposed project.

Consultation

Separate government to government consultation was conducted with the Yakama Indian Nation and the Confederated Tribes of the Colville Reservation. Letters were sent on January 6, 2014. This consultation

process did not result in the documentation of any specific concerns regarding project impacts on resources of tribal interest. As a result of a no effect determination to fisheries and wildlife, no formal consultation with USFWS and NMFS was needed.

Issues

Issues are points of concern about environmental effects or unintended consequences that may occur as a result of implementing the proposed action or alternatives. Issues identified during scoping can either be addressed by developing alternatives to the proposed action or by adjusting the proposed action to resolve any conflicts. No public comments were received so did not highlight any issues or resource conflicts.

After interdisciplinary team review of the proposed project, no major issues were identified. Minor concerns were mitigated through resource specialist design criteria, outlined in Chapter 2 of this document. When there are no unresolved conflicts (issues) the EA need only analyze the proposed action and proceed without consideration of additional alternatives (36 CFR 220.7 (b)(2)(i)).

CHAPTER 2: ALTERNATIVES

Chapter 2 is intended to describe alternatives and how they were formed. There were no concerns or issues raised by the public or other agencies regarding the proposed project and there were no significant issues identified internally, therefore no alternatives were proposed. From the minor concerns that were identified by internal resource specialists, design criteria were set to mitigate for any potential impacts and to meet criteria identified in the Wenatchee National Forest Land and Resource Management Plan, (1990) and as amended by the Northwest Forest Plan (1994).

Proposed Action

Improvements adjacent to the Lodge

The focal point of improvements adjacent to the Lodge is an outdoor patio measuring approximately 2,000 square feet. It will wrap around the base level of the lodge with the main gathering area on the northwest corner. The patio will extend out from the existing basement level porch with improved access to the main floor of the Lodge via concrete and stone steps on the east and west sides of the Lodge. A propane outdoor fire pit will be integrated in the southwest corner of the patio and the propane tank will be buried west of the patio. All aspects of patio construction including required railings and handrails would be of Forest Service approved design and complementary to the Historic lodge. Additionally, all existing foot paths leading to the lodge will be resurfaced with crushed gravel and will meet USFS visual, safety and ADA standards. To allow for nighttime lodge and patio use, new lighting fixtures will be installed complementary to the Lodge's rustic aesthetic, cognizant of energy savings, and sensitive to dark sky guidelines. The patio, stone steps, lighting and path resurfacing will serve to improve accessibility and safety around the lodge and provide additional outdoor gathering space.

In addition to the patio, a new accessible bathroom will be constructed outside the main level of the lodge in the location of the existing woodshed on the northeast side of the lodge. The woodshed will be moved to the northeast side of the lodge, approximately 30ft east of the new bathroom building. The bathroom architecture would be typical of those materials, style and color of the lodge, maintaining the visual qualities of the area and meet ADA accessibility standards. Some incidental tree removal may be necessary in the construction of the new toilet, but would be pre-authorized by USFS staff prior to removal. For potential future water use, a new valve and tee will be installed approximately 50ft to the west of the lodge at the site of the existing water pipe.

Improvements to the Lodge (Interior)

Several upgrades to the interior of the Lodge will improve accessibility and services to visitors, streamline operations, and complete much needed maintenance. Existing concession service counter and seating configuration will remain the same, but kitchen equipment will be replaced with commercial fixtures to allow for increased menu options and improved flow. The basement bathroom will be repurposed and remodeled to accommodate one single unisex ADA compliant bathroom and a small storage room.

Below ground Infrastructure

Current septic system is inadequate to meet current and future kitchen and visitor capacities. A new septic system including tanks, transport line and drain field will be constructed adjacent to the Big rope tow and the old septic tanks will be removed and site rehabilitated.

Ski hill improvements

Several upgrades and maintenance tasks will improve safety, flow and overall visitor experience while skiing or riding the slopes of the Ski Hill. As a part of infrequent, but needed maintenance, the Big and Little rope tow spars will be replaced. The design will be approved by USFS regional tramway engineer to ensure compliance with ANSI tramway standards and will now use poles. The slope angle of the beginner hill adjacent to the Little Rope Tow causes new skiers and riders to naturally drift into the rope tow on their descent from the top of the hill. The beginner hill will be re-graded to keep skiers and riders away from the rope tow as they descend the hill. Approximately 420 cubic yards will be excavated and used to re-contour the slope.

Built in 1933, the historic Bakke Hill Ski Jump is an iconic structure of the Leavenworth Ski Hill. Through lack of use and maintenance, the jump has slowly become obscured by encroaching trees and brush. To enhance the ability of the public to appreciate the Historic values of the Ski Hill area, approximately 45 trees (~1/4acre; 4"-14" dbh) will be removed.

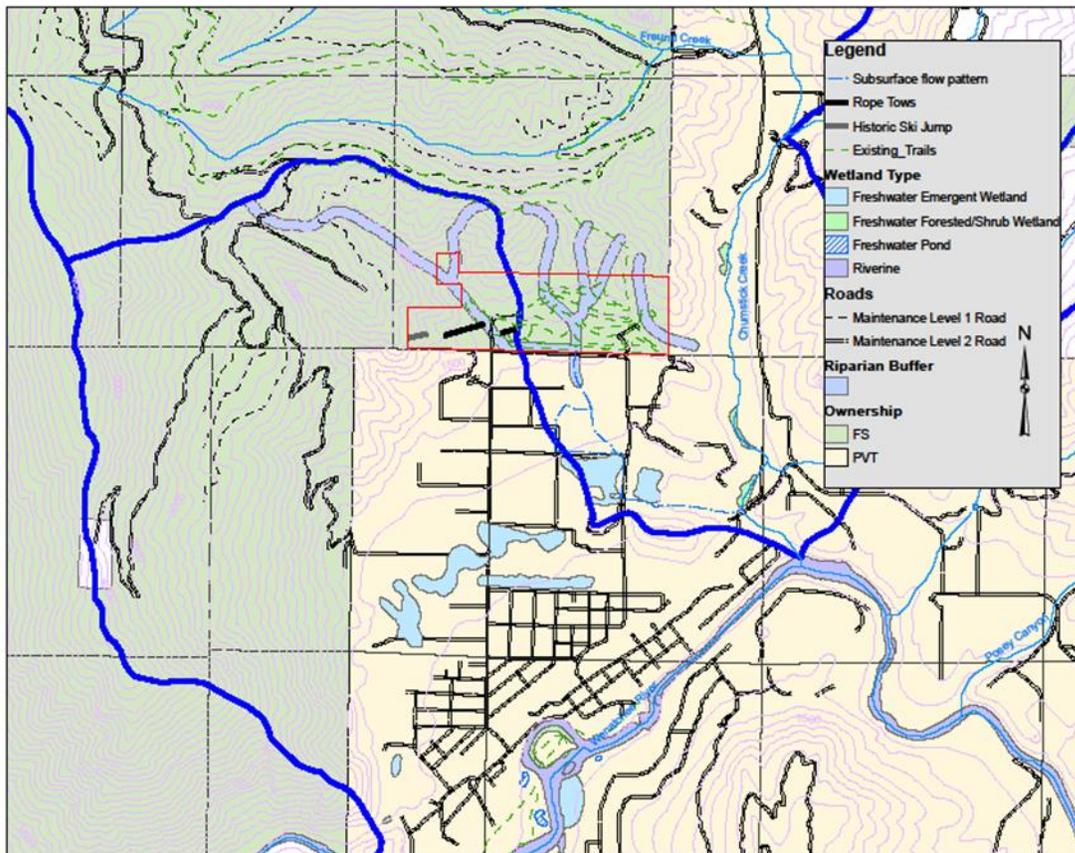
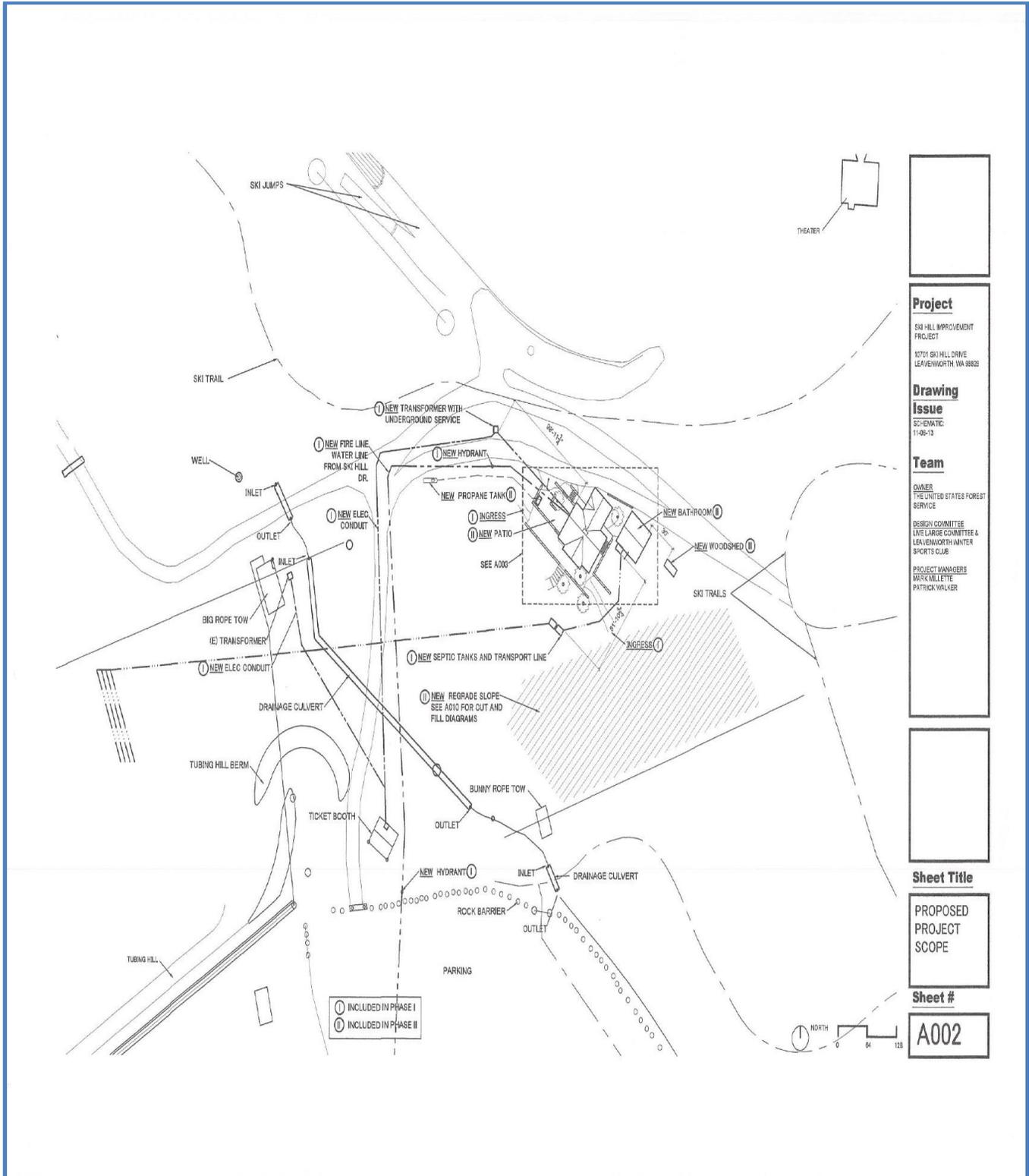


Figure 1. Ski Hill Improvement Project map depicting permitted boundary, 6th level sub-watershed boundaries and Riparian Reserves.



Project
 SKI HILL IMPROVEMENT PROJECT
 12701 SKI HILL DRIVE
 LEAVENWORTH, WA 98025

Drawing Issue
 SCHEMATIC
 11-08-13

Team
OWNER
 THE UNITED STATES FOREST SERVICE
DESIGN COMMITTEE
 LINDA LARUE COMMITTEE & LEAVENWORTH WINTER SPORTS CLUB
PROJECT MANAGERS
 MARK MILLETTE
 PATRICK WALKER

Sheet Title
 PROPOSED PROJECT SCOPE

Sheet #
 A002

Ski Hill Improvements Project Site Map

Description of Design Criteria/Mitigation Measures

Soils/Fisheries/Hydrology

Project design requirements to aid recovery of sites disturbed during construction and regrading operations are listed below. Erosion control measures are intended to reduce the risk of concentrated runoff, surface erosion, trap eroded material, or stabilize eroded material close to the source. Seeding is intended to provide long term ground cover which would reduce the risk of runoff and erosion.

General Erosion Control Mitigation:

1. Except for tree removal on Bakke Hill, conduct operations during dry periods.
2. Skid trees from Bakke Hill when there is sufficient snow coverage to prevent damage to soils. Follow ground based winter logging BMPs for snow depth, which requires 6-8 inches of compact snow or a combination of compacted snow and hard frozen ground equaling 6-8 inches.
3. Promptly stabilize disturbed areas following construction.
4. Seed and mulch areas of heavily disturbed soils including regraded slopes and excavations. The appropriate seed mix, mulch, application rates, locations and time of seeding to meet erosion control and invasive plant competition objectives will be determined by the Invasive Plant Specialist, Botany Specialist, and Soil Scientist.
5. Place silt fencing on the downhill margins of the regraded slope to capture displaced soils. Silt fence shall have a minimum vertical burial of 6 inches. All excavated material from silt fence installation shall be back-filled and compacted along the entire disturbed area.
6. Install straw wattles on the regraded hillslope to prevent surface water concentration and sediment mobilization. The horizontal spacing of straw wattles on the slope is determined with consideration for normal rainfall intensity, slope steepness, and soil characteristics. Figure 1 depicts the placement straw wattles on the slope.

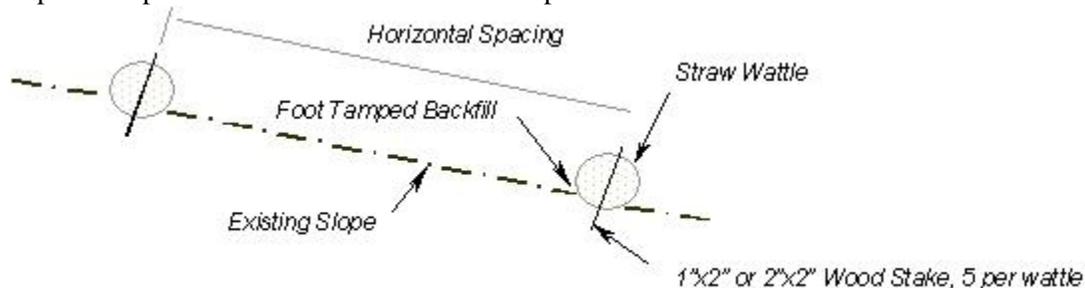


FIGURE 1 - Typical Straw Wattle Installation

- Space at 20-50 ft. intervals perpendicular to slope. Spacing will vary dependent on slope of hill and observed effectiveness.
 - Layout a contour line on the slope with a hand level and wire flags.
 - Dig a shallow depression (about 3 to 5 inches deep) and lay the wattle into it.
 - Drive a 1x2 or 2x2 wooden stake through the center of the wattle at least 6 inches into the ground, stopping about two inches above the wattle.
 - Put 5 stakes in each wattle, installing them end to end in the trench.
 - Seat the wattle with foot tamped backfill on the upstream side such that water flowing down the slope will not run under it.
7. Wattles and silt fencing will be removed at the extreme end of the snow free season to allow for winter operations. If seeding has not resulted in sufficient ground cover, erosion control measures will be re-installed immediately after ski operations cease the following season.

8. To the extent possible, limit additional ground disturbance and utilize existing travel routes to access project activities.
9. Keep excavated materials and sidecast materials (soil/sediment) out of the Riparian Reserves (100 feet each side of stream channels identified and buffered in this analysis).
10. Locate equipment fueling and staging outside of Riparian Reserves Figure 1.
11. Install silt fences 100 feet from streams identified in Figure 1.

Cultural Resources

- In the event that cultural resources or human remains are discovered during project implementation, all activities in the immediate area will stop and the Forest Archaeologist will be notified immediately. The area will be reasonably secured and protected.
- If avoidance of a cultural resource is not possible, site specific mitigation will be developed by the Forest Archaeologist in consultation with the State Historic Preservation Officer (SHPO) and the Tribal Historic Preservation Officers (THPO) for the Yakama Nation and the Confederated Colville Tribes.

Scenic

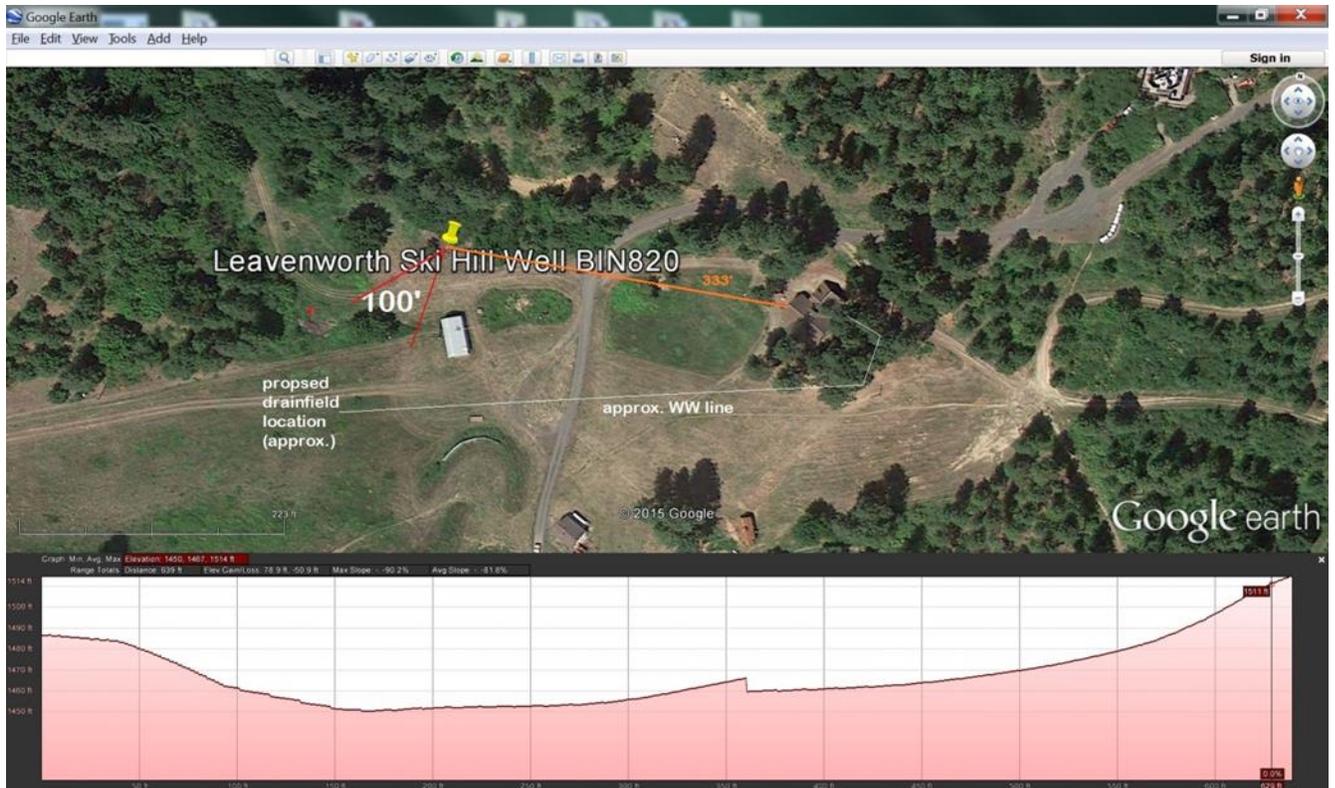
After reviewing the Ski Hill Improvement Project Schematic dated 11-06-2013 and several site visits with the interdisciplinary team and Mark Millette (LWSC), the following design measures were provided and incorporated to meet the intent of Retention VQO foreground (High Scenic Integrity). In addition, some of the following design measures are already being proposed by LWSC that contributes to meeting Retention VQO.

1. Landscape Architect and Recreation Technician/Planner to review location of facilities in the landscape.
2. Utilize the Cascadian Architectural style for outdoor structures for the patio, bathroom and wood storage shelter.
3. Save topsoil and place to soften impact of viewing disturbed ground, revegetate with prescribed grasses and vegetation as identified by the district botanist.
4. Fit the site facilities on the landscape with a minimum of landform and vegetation modification. Preserve trees and other vegetation close to the disturbed areas for additional screening and maintaining a natural setting. For any soil disturbance, ensure blending, erosion control, and revegetation.
5. The color of the patio should be earth toned concrete pavers. The seating wall and stairs would have granite stone faced grouted patterns to match the existing ski lodge patterns.
6. Use darker colored gravel for paths, not white. (Blewett pit was recommended for color).
7. Outdoor equipment (electrical cabinets) and exposed conduits on the compound should be painted a flat neutral earth tone color (or come from the factory that way) so that no shiny galvanized surfaces area shown approved by the USFS. Use non-reflective galvanized nuts, bolts, washers, for attachments, or paint to match new facilities. Use earth toned colored cables or match new facilities as much as feasible.
8. Bury the propane tank and utility lines to eliminate it from being viewed from the new patio and Ski Hill Lodge.
9. Utilize dark sky guidelines for upgraded night lighting to minimize night light pollution viewed from Leavenworth.
10. Utilize existing disturbed areas for constructing the outdoor patio, bathroom and fire wood storage bin.
11. Fertilize, water and mulch all grass-seeded areas to ensure proper growth as recommended by the district hydrologist/biologist/botanist. Where soil grading, or cut and fills are needed, reduce

- visual impacts by blending with existing topography, provide shallow ditches to work with natural drainage patterns. Blend soil grading smoothly into existing topography.
12. Minimize clearing limits for all construction of patio, bathroom, underground power line and propane tank, and lights.
 13. When removing trees to highlight the historic Bakke Hill Ski Jump viewed from the Ski Hill Lodge and bunny hill, feather the edges and/or save clumps of trees along the edges for a natural appearance.
 14. Provide interpretation of the historic Bakke Hill Ski Jump and other important cultural features.
 15. Develop long-range vegetation management plan for the area, address revegetation needs, hazard tree analysis, fuels reduction, and noxious weeds.
 16. Utilize the road and existing disturbed areas for staging equipment materials as much as feasible.
 17. Remove all construction debris from the site including construction stakes and ribbons, and dispose of appropriately.
 18. Gravel and stockpile areas shall be cleaned up and rehabilitated after use (scarified and seeded with the USFS approved seed mix. Excess gravel or other material shall be removed from National Forest land and disposed of appropriately.

Engineering

- Patio accessibility
 - 2010 ADA Standards Section 405 Ramps
 - 2010 ADA Standards Section 504 Stairways
- Resurfacing of existing foot paths
 - Crushed gravel size to use is 5/8 minus from Bergren Rock Pit if available (otherwise, 1-1/4") with lots of fine; with roller compaction.
 - Foot paths need good maintenance to consistently meet ADA.
- New Restroom
 - 2010 Accessibility Standards in Section 603-606,609
- New Septic System



- Forest Service proposed drain-field location is marked “1” in the image above. It’s a relatively flat area, not in the path of ski hill users. The red lines in the image above shows the 100’ distance from the well, which is the minimum horizontal separation between drain-field and well per Washington Administrative Code (WAC) 246-272A-0210.
- Forest Service prefers the manifold location to be on the other side of the “Big Tow” line as shown in the Design Site Plan due to the “melt holes” formed by the drain-field manifold lid. LWSC could easily avoid that situation by covering up the holes as it occurs.

Recreation

- To provide an equal opportunity recreational experience to all visitors, new restroom construction and access points to facilities should adhere to ADA standards.
- Facility improvements should consider social sustainability by accommodating for current and expected future use.
- Rope tow anchor spars design must meet USFS Tramway Engineer and State Tramway Engineering specifications.

Invasive Plant Species

- Actions conducted or authorized by written permit by the Forest Service that will operate outside the limits of the road prism (including public works and service contracts), require the cleaning of all heavy equipment (bulldozers, skidders, graders, backhoes, dump trucks, etc.) prior to entering National Forest System Lands.
- Use weed-free straw and mulch for all projects, conducted or authorized by the Forest Service, on National Forest System Lands. If State certified straw and/or mulch is not available, individual Forests should require sources certified to be weed free using the North American Weed Free Forage Program standards or a similar certification process.

- Use only gravel, fill, sand, and rock that is judged to be weed free by District or Forest weed specialists.
- Native plant materials are the first choice in revegetation for restoration and rehabilitation where timely natural regeneration of the native plant community is not likely to occur.
- Maintain trailheads, roads leading to trailheads and other areas of concentrated public use in a weed-free condition.

Fuels

1. Limb wood and stem wood less than 8” in diameter that would be generated from the removal of trees or brush would be constructed into debris piles.
2. Stem wood:
 - Stem wood “severed boles” could be utilized as fire wood.
 - Stem wood greater than 8” in diameter could be left on the landscape. These remaining stems would be cut so that the entire boles rest on the surface and would also be completely de-limbed, to reduce fire hazard potential and visual impacts.
 - Remaining stem wood would be constructed into debris piles as described in 3, 4, and 5.
3. Desired pile placement location: -120 40.268 by 47 36.875 Degrees Decimal Minutes, and is located approximately 120 yards to the east of the treatment location “in the opening near the toe of the slope”.
4. Piles would be constructed in areas that are relatively void of vegetation, and at least 15’ away from any tree.
5. Pile dimensions would be at a minimum 6’ by 6’ by 6’ and not exceed 8’ by 8’ by 8’. Attempt would be made to construct each pile so it has a uniform arrangement “parallel” .Larger diameter vegetation would be piled on top of the pile to aid in compaction, and water dispersion. Attempt would also be made to construct piles shortly “within 45 days” after the vegetation has been severed to aid in compaction.
6. Any prescribed pile burn operations would be conducted by qualified agency “USFS” personnel who have obtained a valid and current Type III Burn Boss qualification (or higher in accordance to PMS 410-1 NWCG), or who are qualified through contractual agreement.

CHAPTER 3: ENVIRONMENTAL CONSEQUENCES

Introduction

This chapter presents information about current resource condition of the project area and the direct, indirect and cumulative effects of implementing each alternative. It also presents the scientific and analytical basis for the comparison of alternatives presented in Chapter 2. The information presented in this chapter summarizes and cites the specialist reports that are found in the project analysis file. Full versions of reports not found in an Appendix may be found at the Wenatchee River Ranger District office in Leavenworth, Washington.

The effects disclosed have considered the effectiveness of the mitigation measures outlined in Chapter 2. Each resource area discloses the direct, indirect and cumulative effects for that resource area. The National Environmental Policy Act defines these effects as:

Direct Effects -are caused by the action and occur at the same time and place

Indirect Effects -are caused by the action but occur later in time or further removed in distance, but are still reasonably foreseeable

Cumulative Effects - are those that result from the incremental impacts of the action when added to other past, present, and reasonable foreseeable actions

The project Interdisciplinary Team identified past, present, and reasonable foreseeable future actions that might have cumulative impacts with the proposed action early in the analysis process. These actions are described below. Each resource area considered different mixes of these actions, depending on the cumulative effects boundary for the resource area and resource affected.

Only those past, present and reasonably foreseeable actions that overlap the geographic analysis area boundary for each particular resource area are considered, and only if those other actions are expected to have overlapping effects with the Ski Hill Improvements project. Some past actions may still be having effects on one resource, but not another.

In order to understand the contribution of past actions to the cumulative effects of the proposed action and alternatives, this analysis relies on current environmental conditions as a proxy for the impacts of past actions. This is because existing conditions reflect the aggregate impact of all prior human actions and natural events that have affected the environment and might contribute to cumulative effects.

This cumulative effects analysis does not attempt to quantify the effects of past human actions by adding up all prior actions on an action-by-action basis. There are several reasons for not taking this approach. First, a catalog and analysis of all past actions would be impractical to compile and unduly costly to obtain. Current conditions have been impacted by innumerable actions over the last century (and beyond), and trying to isolate the individual actions that continue to have residual impacts would be nearly impossible. Second, providing the details of past actions on an individual basis would not be useful to predict the cumulative effects of the proposed action or adaptive management strategy. In fact, focusing on individual actions would be less accurate than looking at existing conditions, because there is limited information on the environmental impacts of individual past actions, and one cannot reasonably identify each and every action over the last century that has contributed to current conditions. Focusing on the impacts of past human actions would risk ignoring the important residual effects of past natural events, which may contribute to cumulative effects just as much as human actions. By looking at current conditions, we are sure to capture all the residual effects of past human actions and natural events, regardless of which particular action or event contributed those effects. Third, public scoping for this project did not identify any public interest or need for detailed information on individual past actions. Finally, the Council on Environmental Quality issued an interpretive memorandum on June 24, 2005

regarding analysis of past actions, which states, “agencies can conduct an adequate cumulative effects analysis by focusing on the current aggregate effects of past actions without delving into the historical details of individual past actions.”

The suite of present and reasonable foreseeable future action developed by the project Interdisciplinary Team and examined for overlapping effects for each resource in the Ski Hill Improvements project area are:

Present Actions

- Road and trail maintenance including brushing (vegetation removal); may be by hand or by machinery
- Invasive Plant Treatments under the current Forest-wide Noxious Weed EA
- Firewood gathering, snag losses
- Recreation - Nordic and Alpine skiing, horse riding, mountain biking, hiking, running
- Leavenworth Summer Theater events
- Special events at the Ski Hill including races on the Nordic trail system and social events such as weddings in the base area.

Reasonably Foreseeable Activities

- Potential future wildfire
- Ski Hill trail and trailhead construction and maintenance
- Temporary or permanent snowmaking facilities
- Private land development
- Invasive Plant Treatments under the Regional Invasive species EIS/Forest-wide Noxious Weed EIS
- Special events at the Ski Hill including races on the Nordic trail system and social events such as weddings in the base area.

Aquatics

The Ski Hill permitted boundary is located within the Mainstem Wenatchee 5th level HUC; proposed improvement activities would occur within the Derby Canyon-Wenatchee River 6th level HUC, however all surface water draining from the Ski Hill area is routed to drain into the Chumstick 6th level HUC.

Existing Condition

Existing conditions for this analysis includes information from the Mainstem Wenatchee and Chumstick Watershed Assessments (USDA Forest Service 1999a and 1999b, respectively), the Mainstem Wenatchee River Watershed Environmental Baseline Update (USDA Forest Service 2010), and field surveys. Watershed Assessments for the Mainstem Wenatchee and Chumstick watersheds were prepared to ensure that activities proceed with a full understanding of the ecosystem components of the watershed and their connected relationships (refer to Figure 1 (above) Ski Hill Improvement Project map depicting permitted boundary, 6th level subwatershed boundaries and Riparian Reserves).

Riparian Habitat

A major finding of the watershed assessments relevant to the Ski Hill Improvement project is that landtypes in the lower Wenatchee (Leavenworth downstream) and Chumstick watersheds carry high sediment hazards, and functioning riparian areas are highly important to filter sediment delivery to stream channels from the highly erosive hillslopes and to improve flood-water retention and groundwater recharge. The assessments also reported that the drier vegetation types in the lower Wenatchee limit riparian habitat diversity to a few scattered areas which places added emphasis on riparian areas on Forest

Service lands to dissipate stream energy, provide nutrients, regulate stream temperatures, reduce erosion, and stabilize banks.

In the Chumstick and Wenatchee-Derby subwatersheds, valley bottom riparian areas have been altered by rural/urban development, transportation and utility corridors, farming and grazing. Upslope riparian areas in the headwaters and tributaries are altered by high road and stream crossing densities, grazing, and previous logging practices.

Intermittent channels in the project area typically flow during snowmelt runoff and after high intensity summer thunderstorms; they are characterized as sandstone gullies with vegetation similar to the upland terrestrial vegetation, and broad depositional areas and seasonally wet soils with mature big leaf maple vegetation. The Riparian Reserves at Ski Hill provide shade and cool micro climate environments for invertebrate and vertebrate species, nutrient and water cycling, and contribute to soil and hillslope stability. The Nordic ski trails at Ski Hill are used by hikers, mountain bikers, and horseback riders in the off-ski season. These trails wind throughout out the permitted boundary and cross riparian reserves multiple times (Figure 1). When used during seasonably wet conditions trail rutting, trail instability, and undesired sediment and water routing can occur. In the downhill ski development portion of ski hill, riparian reserve function has been completely eliminated where all of the riparian vegetation has been removed and the stream is piped under the base area. Development off National Forest lands have eliminated riparian reserve connectivity from Ski Hill to Chumstick Creek.

Water Quality and Quantity

Thin coarse textured soils and bedrock exposures coupled with steep slopes concentrate surface runoff rapidly into first order drainages resulting in flashy streamflow and little subsurface storage of precipitation. The combination of topographic relief, drainage density, and soil composition allow for stream scouring and high fine sediment delivery (USDA 1999b).

Chumstick Creek exceeds State and Federal water quality standards for fecal coliform and temperature throughout much of its length. The Washington Department of Ecology (WDOE) has developed Water Quality Improvement Plans (WQIP) and Total Maximum Daily Load (TMDL) allocations for both of these water quality exceedances (WDOE 2007a, WDOE 2007b). Effective shade was used as a surrogate measure of heat flux for the thermal load for the temperature TMDL and the WQIP identifies the USFS as the primary implementing agency for the Wenatchee National Forest, further recommending that riparian reserve prescriptions in the Northwest Forest Plan should continue to be maintained for the establishment of site potential riparian vegetation where appropriate.

The fecal coliform WQIP requires the Forest Service to restore and protect streams on National Forest lands from fecal coliform bacteria runoff pollution.

Inadequate stream flows have been recognized in the Chumstick valley since at least the 1980s when water rights in the Chumstick valley were adjudicated. Presently data is lacking to evaluate available water and recommend allocation strategies (WRIA 45 Planning Unit). The WDOE lists this impairment as Category 4C (impaired by a non-pollutant) which require complex solutions to help restore streams to more natural conditions, therefore a TMDL is not required.

Washington State has a non-degradation policy for all waters that exceed standards to protect them from further degradation. There are no collected water quality parameters on National Forest system lands in the analysis area.

Fish Species and Habitat

Stream channels within the Ski Hill permitted area flow intermittently and provide groundwater recharge to colluvial deposits that are bounded by glacial moraine deposits to the south, west, and extending to near Titus Road on the east. Surface flow from the main channel draining Tumwater Mountain is routed through a culvert under the Ski Hill base area and ditched around the parking lot where it is joined by another ephemeral/intermittent channel network, before draining through a culvert under the county road onto the colluvial deposits on private orchard land (Figure 1). Consequently, there is no fish habitat within the permitted boundary of Ski Hill and there is no surface water connection to fish habitat in Chumstick Creek 1.1 miles downslope of the Ski Hill. Fish habitat in Chumstick Creek is affected by land development and high road densities that contribute to the loss of floodplain connectivity which may be the most important issue driving habitat degradation in the watershed (WSCC 2001).

Table 1 lists the fish species and habitats of concern and their distribution status within the analysis area. Fish presence/absence was determined from the Okanogan-Wenatchee National Forest Fish Distribution Database (2006, updated 2012), the web-based NatureServe database, and interviews with local biologists conducting fish surveys in the watershed

Table 1. Fish species presence within or adjacent to the Ski Hill Improvement Project.

Species/Habitat	Status	Status
UCR Spring Chinook Salmon	Endangered, MIS, CH, EFH	Occupied habitat in Chumstick Creek, located 1.1 miles downstream of Ski Hill permitted boundary. Designated Critical Habitat 1.4 miles downstream of project activities.
UCR Steelhead	Threatened, MIS, CH	Occupied habitat and CH located 1.1 miles downstream of project activities.
CR Bull Trout	Threatened, MIS, CH	Occupied habitat located 1.1 miles downstream of project activities. Designated CH located 1.4 miles downstream of project activities.
Westslope Cutthroat Trout	MIS	Habitat for adult and sub-adult cutthroat migrating to/from spawning/rearing habitat located 1.4 miles downstream from project activities.
Pygmy Whitefish	Sensitive	Habitat not present (Hallock and Mongillo 1998).
River Lamprey	Sensitive	Does not occur in Chelan County (NatureServe Species Report August 2008, www.natureserve.org).
Umatilla Dace	Sensitive	Habitat not present (Cannings & Ptolemy 1998).
Summer Chinook	MIS, EFH	Do not use Wenatchee River tributaries for any life history requirements. Spawn in Wenatchee River 1.4 miles downstream of project activities.
Sockeye Salmon	MIS, EFH	Wenatchee River (1.4 miles downstream) = migration corridor. Spawning and rearing habitat located >30 miles upstream at Lake Wenatchee.
Coho Salmon	EFH	Occupied habitat located 1.1 miles downstream of project activities.

E= endangered, T= threatened, CH= Critical Habitat, EFH = Essential Fish Habitat, S= Sensitive (Regional Foresters Special Status), MIS= Management Indicator Species

Direct and Indirect Effects of No Action

Because the no action alternative represents the continuation of the existing activities, with no additional acres of disturbance, the existing condition discussion above describes the conditions that would occur under this alternative.

Riparian Reserves – Within the permitted boundary of Ski Hill, trail use and maintenance activities would continue to influence how water and sediment is routed through riparian areas and at intermittent stream channel crossings. Best Management Practices (BMPs) that provide for sufficient trail drainage such as outsloping and grade sags, and that limit use during very wet conditions minimize trail rutting and undesirable soil and water movement. Vegetation clearing during trail maintenance sometimes may involve overstory vegetation removal, however this activity is minimal and has not reduced canopy cover in Riparian Reserves, therefore shading and stream temperature regulation is maintained.

Riparian Reserves in the downhill ski portion of the permitted boundary have been converted to a pipe and ditch system for the purposes of conveying water only, there is no longer a vegetative component that links the terrestrial and aquatic components of the area. This condition will remain as long as there is a developed recreation facility on the site.

Water Quality and Quantity – Water quality variables that may be influenced by recreation activities at Ski Hill are sediment production and delivery, stream temperature, and introduction of contaminants. Activities in close proximity to streams and in highly unstable areas have the greatest potential to impact fine sediment levels. Although soil types in the Project Area are highly erosive, soils in Group B (see Soils Resource Report) have moderately low runoff potential when thoroughly wet, and water transmission through the soil is typically unimpeded. There is recent evidence of soil detachment and movement on the vegetated slopes within the permitted boundary as well as further indications of shallow rotational activity near the Nordic Trail system in the form of divergent leaning trees. Soil erosion and delivery to stream courses is highly unlikely to negatively impact water quality or fish habitat due to the intermittent nature of the stream channels and the distance from the project area to Chumstick Creek, approximately one mile downstream. Regular maintenance on the existing Ski Hill system trails usually mitigates erosion and sediment delivery to stream channels.

If no action is taken, there is the possibility that the existing septic system could fail. However, given the systems location and distance from surface water and groundwater (Figure 1), a system failure is not likely to contribute to the Chumstick TMDL.

Threatened and Endangered Species and their Critical Habitat, Regional Forester Special Status Species, Wenatchee National Forest Management Indicator Fish Species, and Essential Fish Habitat - The existing limiting factors for fish habitat and fish populations in Chumstick Creek would persist. The trend for poor degraded spawning and rearing habitat would continue because no action to reduce human-caused aquatic habitat effects would be taken.

Because there is no surface water connection to the Wenatchee River, Chumstick Creek, or any other perennially flowing water bodies in the Derby Canyon-Wenatchee River 6th level HUC and Chumstick 6th level HUC, existing recreation activities at Ski Hill do not affect fish species or their habitat downstream of the permitted boundary of Ski Hill.

Direct and Indirect Effects of Proposed Action

Project activities that could affect fish species and habitat and water quality and quantity would be production and delivery of sediment. All project activities occur in the downhill portion of the ski area and are limited to an approximate 10 acre footprint; actual soil disturbance is estimated at less than two acres. There is no ground disturbance proposed within Riparian Reserves.

The following BMP's are prescribed in addition to those in the soil resource report to limit the probability of sediment and pollutant delivery to stream channels:

- Keep excavated materials and sidecast materials (soil/sediment) out of the Riparian Reserves (100 feet each side of stream channels identified and buffered in this analysis, Figure 1).
- Locate equipment fueling and staging outside of Riparian Reserves (Figure 1).
- Install silt fences 100 feet from streams identified in Figure 1.

Riparian Reserves – No activities are planned within Riparian Reserves, therefore there will be no direct effects to riparian structure or function within the Ski Hill permitted boundary from implementing the proposed action. BMP’s prescribed in the Project Soil Report and in this report are proposed to limit soil and contaminant movement to the local area of disturbance, therefore there would be no indirect effects to riparian reserves within the permitted boundary or downstream from project activities.

Water Quality and Quantity – There are no construction activities proposed that are adjacent to stream channels, and the BMP’s listed above and in the Soil Resource Report are proposed to minimize the effects of soil movement to the local area of disturbance. The new upgraded septic system would meet all State requirements and thus would not contribute fecal coliform bacteria to surface or ground water. Likewise, removal of the old system would also follow all State and Federal laws. Therefore the risk of sediment delivery, temperature impacts, and introduction of contaminants to channels within the permitted boundary and downstream to Chumstick Creek is discountable.

Threatened and Endangered Species and their Critical Habitat, Regional Forester Special Status Species, Wenatchee National Forest Management Indicator Fish Species, and Essential Fish Habitat - There is a probability that construction activities located outside of Riparian Reserves could affect sediment production however the probability of sediment directly or indirectly affecting fish species or habitat in Chumstick Creek is reduced to immeasurable levels because there is not a channel network to convey the sediment, and Best Management Practices (BMP’s) prescribed in the soil resource report are designed to minimize soil movement beyond the Ski Hill permitted boundary.

Cumulative Effects

Because there are no direct or indirect effects, there are no cumulative effects. BMP’s are prescribed to limit surface erosion and sediment delivery to the local area of disturbance, and because project activities are located outside of Riparian Reserves in the Ski Hill permitted boundary there are no negative or positive effects to Riparian Reserves, water quality and quantity, or fish species of concern and their habitat which could overlap in space or time with reasonably foreseeable projects within the permitted boundary of Ski Hill.

Monitoring Recommendations

Monitor silt fences erected adjacent to the bunny hill re-grade to ensure they are properly functioning, particularly after storm events. Straw wattles removed from the bunny hill for the first ski season could be positioned adjacent to the silt fence to provide for additional run-off protection during the first snow melt season.

Consistency Findings

The BMPs listed in the Soils Report and above were used to ensure that the Ski Hill Improvement activities are consistent with the Wenatchee National Forest Plan as amended by the Northwest Forest Plan, and would be incorporated into construction contracts. Proposed activities would meet management objectives to maintain excellent water quality and provide the structural stream components necessary for

channel stability and diverse, high quality aquatic and riparian habitat for resident and anadromous fish. They would also meet Aquatic Conservation Strategy objectives at the 6th and 5th field watershed scale.

Clean Water Act (303d listed water bodies)

Fecal coliform 303(d) listings in Chumstick Creek would not be affected by project activities. All action alternatives would maintain consistency with Washington State's non-degradation policy and the Fecal Coliform WQIP for Chumstick Creek.

Water temperature 303d listings in Chumstick Creek would not be affected by project activities. There would not be any activity within Riparian Reserves. All Action Alternatives would be consistent with the WQIP for Chumstick Creek instream temperatures.

Wenatchee National Forest Land and Resource Management Plan

Consistency with Riparian Reserve Standards and Guidelines within the Riparian Reserves is assessed by addressing consistency with the Northwest Forest Plan Aquatic Conservation Strategy objectives that address:

- Riparian dependent resources (e.g. water quality, fish habitat).
- Fine sediment, instream temperature, channel morphology, floodplain/riparian vegetation, and fish passage.

Aquatic Conservation Strategy Objectives

The following is a summary of the proposed project's consistency with the Aquatic Conservation Strategy objectives (ROD B-10).

Objective 1: Maintain and restore the distribution, diversity, and complexity of watershed and landscape-scale features to ensure protection of the aquatic systems to which species, populations and communities are uniquely adapted.

This project has a small footprint at the watershed/landscape scale; there would be no project activities within Riparian Reserves and BMP's are proposed that would limit impacts to the area of disturbance. Site scale effects would be limited to the Ski Hill developed recreation site.

Objective 2: Maintain and restore spatial and temporal connectivity in and between watersheds. Lateral, longitudinal, and drainage network connections include floodplains, wetlands, upslope areas, headwater tributaries, and intact refugia. These network connections must provide chemically and physically unobstructed routes to areas critical for fulfilling life history requirements of aquatic and riparian-dependent species.

No actions associated with the Ski Hill Improvements project will further alter riparian reserve connections since there are no activities proposed in Riparian reserves.

Objective 3: Maintain and restore the physical integrity of the aquatic system, including shorelines, banks, and bottom configurations.

There are no activities proposed in or adjacent to stream channels. BMP's sufficiently buffer Riparian Reserves from any sediment delivery.

Objective 4: Maintain and restore water quality necessary to support healthy riparian, aquatic, and wetland ecosystems. Water quality must remain in the range that maintains the biological, physical, and

chemical integrity of the system and benefits survival, growth, reproduction, and migration of individuals composing aquatic and riparian communities.

Water quality would be maintained at the project and watershed scales. There are no activities proposed in or adjacent to stream channels. BMP's sufficiently buffer Riparian Reserves from potential chemical and sediment delivery. Should pollutants enter one of the channels at Ski Hill, these would be diluted before entering any perennial waters due to the intermittent flow in Ski Hill channels and their distance from perennial and fish-bearing streams.

Objective 5: Maintain and restore the sediment regime under which aquatic ecosystems evolved. Elements of the sediment regime include the timing, volume, rate, and character of sediment input, storage, and transport.

Due to the intermittent nature of the drainage network in the project area, any short-term project generated sediment is not expected to impact perennial flowing waters or aquatic habitat. Effects to the sediment regime would be neutral at the project and watershed scale. BMP's sufficiently buffer Riparian Reserves from any sediment delivery.

Objective 6: Maintain and restore in-stream flows sufficient to create and sustain riparian, aquatic, and wetland habitats and to retain patterns of sediment, nutrient, and wood routing. The timing, magnitude, duration, and spatial distribution of peak, high, and low flows must be protected.

There are no project activities located within the 100 foot Riparian Reserve buffer, and there are no activities that would increase the drainage network. The project would maintain this objective at the site and watershed scale.

Objective 7: Maintain and restore the timing, variability, and duration of floodplain inundation and water table elevation in meadows and wetlands.

There are no project activities located within the 100 foot Riparian Reserve buffer, and there are no activities that would increase the drainage network. The project would maintain this objective at the site and watershed scale.

Objective 8: Maintain and restore the species composition and structural diversity of plant communities in riparian areas and wetlands to provide adequate summer and winter thermal regulation, nutrient filtering, appropriate rates of surface erosion, bank erosion, and channel migration and to supply amounts and distributions of coarse woody debris sufficient to sustain physical complexity and stability.

There are no project activities located within the 100 foot Riparian Reserve buffer. Areas outside of the riparian reserve that are impacted by the implementation of this project would be planted, seeded, and/or mulched. Seed may be native plants or non-persistent non-natives. These plants would rapidly provide ground cover, thereby reducing erosion. They would be replaced by native plants in a few years.

Objective 9: Maintain and restore habitat to support well-distributed populations of native plant, invertebrate, and vertebrate riparian-dependent species.

All proposed project activities would maintain and not retard habitat conditions at the project and watershed scales. Restoration of native plant communities would include revegetation of all areas of bare soil exposed by project activities that are at risk for noxious weed invasion.

Effects Determination to ESA Listed Fish and Critical Habitat

Project activities are located approximately one mile upslope from Chumstick Creek and there is no surface water connection from the intermittent stream channel network to Chumstick Creek. BMP's such as silt fencing and wattles are designed to limit sediment movement from the immediate vicinity of the disturbed sites. There are no mechanisms for the limited effects at Ski Hill to reach fish-bearing waters in the analysis area, thus there would be *no effect* to UCR steelhead, spring Chinook, Columbia River bull trout or their Critical Habitat.

Effects Determination to Essential Fish Habitat

Because there are no mechanisms for sediment or pollutants to transport from the project area to Chumstick Creek, the proposed project would not have any adverse effect on water or substrate essential to the life history of coho or spring Chinook salmon in Chumstick Creek, therefore the determination is *not adversely affect*.

Effects Determination to Regional Forester's Special Status Species

Pygmy whitefish, Umatilla dace, and river lamprey are not known to occur within the project area nor are their preferred habitat present therefore the effects determination is *no impact*.

Effects Determination to Management Indicator Species

Project activities would not result in any direct or indirect effects to Chinook salmon, steelhead trout, or their habitat therefore, the project would have *no impact to viability* on the Wenatchee National Forest for these species. There would be *no impact* on sockeye salmon, westslope cutthroat trout, or Columbia River bull trout since they do not occur in the project area.

Wildlife

This section describes the terrestrial wildlife species found in the project area and the effects of the alternatives on these species. Rather than addressing all wildlife species, analysis focused on proposed, endangered, threatened, and sensitive (PETS) species, Forest Plan management indicator species (MIS), and other wildlife species of special interest and their habitat (see individual species lists below). A Biological Evaluation was prepared for this project covering these species, and is in the project file.

Though occurring on the Okanogan-Wenatchee National Forest, 57 of the 64 species (referenced in appendix, Table 1), do not occur, nor is there potential for habitat to occur, within the project area. For the seven species that occur in the project area, mule deer, downy woodpecker, hairy woodpecker, white-headed woodpecker, Williamson's sapsucker, red-naped sapsucker, and Northern flicker, no habitat would be disturbed. So for those reasons, there would be "no effect" or "no impact" from any alternative and they will not be analyzed further in this document.

In addition to PETS species and MIS, landbirds, including Neotropical migrants were evaluated for potential impacts from proposed project activities. Of the 27 Species of Conservation Concern on the Wenatchee River Ranger District, only the white-headed woodpecker and Williamson's sapsucker potentially occur in the project area. These species were discussed above.

Existing Conditions

The project area is a developed recreation site that receives moderate use by the public year-round, and is located directly adjacent to the town of Leavenworth. The Ski Hill base area, where all of the proposed projects are located, is an open grassy meadow with scattered ponderosa pine trees, with a few Douglas-firs and maples in moister areas. Most activities would occur in open areas used for skiing in winter, between the parking lot and ski hill lodge.

Direct and Indirect Effects

Wildlife species that occur in the project area are less susceptible to disturbance from human activity. Deer would be displaced from the immediate area during actual construction activities, but may only move a short distance, and may move back into the area on a daily basis when construction is not occurring. The cavity excavators occur in the forest adjacent to proposed activities, and are not likely to be disturbed. The proposal would not alter habitat for any of these species. Effects to deer would be negligible and limited to disturbance. There would be no effect to other wildlife species.

Cumulative Effects

The area considered for cumulative effects include the project area and adjacent lands. Past actions considered began when European settlers began influencing wildlife populations over a century ago, and foreseeable actions are considered 10 to 20 years into the future, when the proposed action would be complete and long term benefits would begin to be realized.

Residential development and activities on private land in the vicinity of the Leavenworth Ski Hill continues to occur and displace wildlife, especially those prone to human disturbance. Cumulative effects from the project would be short term disturbance from noise and human presence.

Consistency Finding

Both Alternatives would be consistent with the Wenatchee Forest Plan in regards to wildlife, as well as regulations covering federally listed species under the ESA. The project is consistent with the NFMA and the Forest Plan because it will not contribute to a negative trend in viability of any wildlife Management Indicator Species (MIS). Similarly, both alternatives would be consistent with the 1918 Migratory Bird Treaty Act (MBTA) and the Migratory Bird Executive Order 13186.

Scenery

Important Interactions

Background

The Ski Hill Lodge was built in the early 1930's and has been managed and operated under a Special Use Permit by the Leavenworth Winter Sports Club since. The historic Lodge and Ski Area have continued to see an increase in visitation over the years. The demand for recreational opportunities has increased, thus requiring continual maintenance and much needed upgrades to the Lodge and Ski Area amenities. The Ski Hill Improvement project proposes to make improvements that will increase the lifespan of the lodge, reduce erosion issues around the lodge, improve safety around the lodge and on the ski slope, make the facility more accessible, provide additional outdoor gathering space, improve service, operations and maintenance, and enhance the ability of the public to appreciate the Historic values of the Ski Hill area.

Methods of Measuring Effects

- Amount of changes seen on the landscape; shape, size, color and arrangement of lodge facilities and removal of vegetation from Ski Hill Lodge, Bakke Ski Jump and surrounding area.
- Consistency with Forest Plan standards and guidelines; the resulting scenic integrity level in the short term and long term (Retention VQO).

Incomplete and Unavailable Information

Information necessary for evaluating scenery effects is sufficient.

Spatial and Temporal Context for Effects Analysis

The effects to the scenery resources can be short term and long term. Short term is usually less than 5 years, and long term is 5 years to 50 years. The project analysis area is the area from which the proposed treatments can be visibly discerned.

Important Interactions

There are four activities proposed that would directly affect the visual character, these are construction of new facilities or modification of existing facilities, vegetation modification, landform modification and soils manipulation. The key viewpoint is from the Leavenworth Ski Hill Lodge. The landform modification necessary to construct the facilities would be minimal since the site is already built on a level terrace with room to expand.

Direct and Indirect Effects of No Action

The No Action Alternative would not change the landscape character or sense of place. The Ski Hill Lodge, Bakke Ski Jump and setting would remain as existing, this would not fulfill user expectations in the future by providing additional outdoor space during high use periods and improving the infrastructure for better experiences.

Construction or modification of existing facilities: None

Vegetation modification: None

Landform modification: None

Soils manipulation: None

Direct and Indirect Effects of Proposed Action

The Leavenworth Ski Hill Improvement project is an effort by the skiing community of Leavenworth to protect the heritage and tradition of skiing at the Leavenworth Ski Hill so that generations of kids and families can share the excitement, beauty, and community of skiing. Full descriptions are in the project file and partially excerpted here. Additional information is also included in the Project Initiation Form and the Ski Hill Improvement Project schematic 11-01-13 Project Narrative Report. The project would change the landscape character and sense of place in a positive manner with the following actions:

1. Build new patio including propane tank and stairway
2. Build new ADA restroom
3. Repurpose existing bathroom to one unisex accessible bathroom
4. Upgrade lighting
5. Upgrade kitchen appliances and hardware in the interior
6. Resurface existing foot paths leading to the lodge with crushed gravel
7. Move existing woodshed structure to new location
8. Install new septic tank and drain field
9. Re-grade bunny hill
10. Remove trees from Bakke Hill Ski Jump
11. Replace big rope tow top anchor spar
12. Replace little tow spar

The proposed action will be discussed as it relates to scenery in the following categories:

- 1. Improvements adjacent to the Lodge (#1, 2, 4, 6, 7)**

The focal point of improvements adjacent to the Lodge is an outdoor patio measuring approximately 2,000 square feet. It will wrap around the base level of the lodge with the main gathering area on the northwest corner. The patio will extend out from the existing basement level porch with improved access to the main floor of the Lodge via concrete and stone steps on the east and west sides of the Lodge. A propane outdoor fire pit will be integrated in the southwest corner of the patio and the propane tank will be buried west of the patio. All aspects of patio construction including required railings and handrails would be of Forest Service approved design and complementary to the Historic lodge. Additionally, all existing foot paths leading to the lodge will be resurfaced with crushed gravel and will meet USFS visual, safety and ADA standards including using dark colored, compactable, non-eroding gravel for paths. To



allow for nighttime lodge and patio use, new lighting fixtures will be installed complementary to the Lodge's rustic aesthetic, cognizant of energy savings, and sensitive to dark sky guidelines. An approved lighting plan would be submitted to the FS for review and approval. The patio, stone steps, lighting and path resurfacing will serve to improve accessibility and safety around the lodge and provide additional outdoor gathering space.

Figure 4. View of patio location with utilities to be moved

In addition to the patio, a new accessible bathroom will be constructed outside the main level of the lodge in the location of the existing woodshed on the northeast side of the lodge. The woodshed will be moved to the northeast side of the lodge, approximately 30ft east of the new bathroom building. The bathroom architecture would be typical of those materials, style and color of the lodge, maintaining the visual qualities of the area and meet ADA accessibility standards. Some incidental tree removal may be necessary in the construction of the new toilet, but would be pre-authorized by USFS staff prior to removal. For potential future water use, a new valve and tee will be installed approximately 50ft to the west of the lodge at the site of the existing water pipe.

Effects to Scenic Integrity and Landscape Character

Construction or modification of existing facilities: Construction of the patio, accessible paths, stairs and new accessible bathroom would meet the Cascadian Architectural style and be complementary to the existing historic Leavenworth Ski Lodge. This action would enhance recreation and aesthetic experience at the site.

Vegetation modification: Minor vegetation removal would be needed to accommodate construction of the patio and bathroom.

Landform modification: Minor grading would be needed to accommodate construction of the patio and bathroom.

Soils manipulation: Minor soil manipulation would be needed to accommodate construction of the patio and bathroom.

Overall, the landscape character and scenic integrity would be maintained and improved with the upgrades and improvements to the Leavenworth Ski Hill. The sense of place would be greatly enhanced for the users that value the proposed action. This is a benefit for the community of Leavenworth by making the lodge more attractive for visitors and offering greater opportunities for future uses.

2. Improvements to the Lodge (Interior) (#3 & 5)

Several upgrades to the interior of the Lodge will improve accessibility and services to visitors, streamline operations, and complete much needed maintenance. Existing concession service counter and seating configuration will remain the same, but kitchen equipment will be replaced with commercial fixtures to

allow for increased menu options and improved flow. The basement bathroom will be repurposed and remodeled to accommodate one single unisex ADA compliant bathroom and a small storage room.

Effects to Scenic Integrity and Landscape Character

Construction or modification of existing facilities: Remodeling the interior of the lodge to improve accessibility, replace kitchen equipment and create a new upgraded accessible bathroom would be complementary to the existing historic Leavenworth Ski Lodge. This action would enhance safety, recreation and aesthetic experience at the lodge.

Overall, the landscape character and scenic integrity would be maintained and improved with the upgrades and improvements to the Leavenworth Ski Hill. This is a benefit for the community of Leavenworth by making the lodge more attractive for visitors and offering greater opportunities for future uses.

3. Below ground Infrastructure (#8 & 9)

Current septic system is inadequate to meet current and future kitchen and visitor capacities. A new septic system including tanks, transport line and drain field will be constructed adjacent to the Big rope tow and will meet all USFS and county engineering and permitting requirements. Old septic tanks will be removed and site rehabilitated.

Effects to Scenic Integrity and Landscape Character

Construction or modification of existing facilities: Construction of the new septic system would blend into the existing landscape when it's completed. This action would enhance recreation and future septic requirements at the site.

Vegetation modification: Minor vegetation removal would be needed to accommodate construction of the new septic system.

Landform modification: Minor grading would be needed to accommodate construction of the new septic system.

Soils manipulation: Minor soil manipulation would be needed to accommodate construction of the new septic system.

Overall, the landscape character and scenic integrity would be maintained and improved with the upgrades and improvements to the Leavenworth Ski Hill.

4. Ski Hill improvements (# 10, 11, 12, 13)

Several upgrades and maintenance tasks will improve safety, flow and overall visitor experience while skiing or riding the slopes of the Ski Hill. As a part of infrequent, but needed maintenance, the Big and Little rope tow spars will be replaced. The design will be approved by USFS regional tramway engineer to ensure compliance with ANSI tramway standards and will now use poles.



The slope angle of the beginner hill adjacent to the Little Rope Tow causes new skiers and riders to naturally drift into the rope tow on their descent from the top of the hill. The beginner hill will be re-graded to keep skiers and riders away from the rope tow as they descend the hill. Approximately 420 cubic yards will be excavated and used to re-contour the slope.

Figure 5. View of Rope Tow Spars to be replaced



Built in 1933, the historic Bakke Hill Ski Jump is an iconic structure of the Leavenworth Ski Hill. Through lack of use and maintenance, the jump has slowly become obscured by encroaching trees and brush. To enhance the ability of the public to appreciate the Historic values of the Ski Hill area, approximately 45 trees (~1/4acre; 4"-14" dbh) will be removed. Guidelines from USFS landscape architect and district specialists will guide selection of trees to ensure thinning is consistent with visual quality standards.
Figure 6. View of Bakke Hill Ski Jump from Bunny Hill

Effects to Scenic Integrity and Landscape Character

Vegetation modification: Minor vegetation removal would be needed to highlight the view of the existing Bakke Hill Ski Jump. Efforts to feather the tree removal by blending in clearing edges and saving small clumps of understory to retain texture would accomplish the Retention VQO by opening up the view to the ski jump while minimizing linear effects of clearing limits.

Overall, the landscape character and scenic integrity would be maintained and improved with the upgrades and improvements to the Leavenworth Ski Hill.

Cumulative Effects

From a scenery resource perspective defined by the Ski Hill permit boundary, the most beneficial management action would be to utilizing the existing disturbed footprint, access road and developed environment to blend in proposed activities to reduce visual impact. By utilizing the Cascadian Architectural style, blending materials and colors into the natural landscape and minimizing disturbance, the future needs for Leavenworth Ski Hill would be met in the short and long term (5-20 years) while achieving the Retention Visual Quality Objective prescribed by the Okanogan-Wenatchee Forest Plan and maintaining and enhancing sense of place for users.

Proposed Landscape Character and Scenic Integrity Level after implementation

The viewing duration, location and angle of viewing are crucial elements in managing to blend the new facilities into the landscape. The location and angle of viewing are seen as the foreground and middle-ground from the areas around Leavenworth and from within the Leavenworth Ski Hill Area. The viewing duration is primarily from recreationists using the Leavenworth Ski Hill area, the new patio, bathroom, view of Bakke Hill Ski Jump and general improvements to the infrastructure would be positive.

Consistency Finding

The proposed modifications and expansion of the existing Leavenworth Ski Hill area would maintain a High Landscape Character and Scenic Integrity (Condition) and would meet the Visual Quality Objective of Retention. The visitor would perceive a natural appearing landscape. The proposed treatments would be consistent with Forest Plan Standards and Guidelines for Visual Quality.

Botany and Invasive Species

Existing Conditions

Invasive Plant Species

The Ski Hill area is a disturbed site that has had high recreational use for many years. The area has infestations of noxious weed species such as diffuse and spotted knapweed, St. John's wort, Dalmatian toadflax, ox-eye daisy, and non-noxious species such as common burdock and salsify. The infestations on existing trails and parking lot have been treated under the Wenatchee River Ranger District invasive species program and would continue to receive treatment as needed.

Threatened, Endangered, Sensitive (TES) Species and their Critical Habitat; Survey and Manage (S&M) Species

No Threatened, Endangered, Sensitive species or their Critical Habitat; or Survey and Manage species are known to exist in the proposed project area.

Direct and Indirect Effects of No Action

Because the no action alternative represents the continuation of the existing activities the existing condition discussion above describes the conditions that would occur under this alternative.

Direct and Indirect Effects of Proposed Action

Invasive Plant Species - Project actions that could affect invasive species would be ground disturbance related to construction activities. Best Management Practices (BMP's) are prescribed to minimize the introduction and spread of invasive species.

Threatened, Endangered, Sensitive, Proposed (TESP) Species and their Critical Habitat; and Survey and Manage (S&M) Species - No TESP or S&M species occur in the proposed project area; therefore there would be no direct effects to those species and they will not be further analyzed in this document. If any TESP or S&M species were found during project activities, a District botanist would be notified.

Cumulative Effects

Because there are no direct or indirect effects, there are no cumulative effects. Best Management Practices (BMP's) are prescribed to minimize the introduction and spread of invasive species. If any TESP or S&M species were found during project activities, a District botanist would be notified.

Monitoring Recommendations

Any new construction and any areas where gravel or fill were placed would be monitored for invasive species under the District invasive species management program.

Consistency Finding

Wenatchee National Forest Land and Resource Management Plan (1990) and Preventing and Managing Invasive Plants, Record of Decision (2005)

The Ski Hill Improvements Project is consistent with the Wenatchee National Forest Land and Resource Management Plan as amended by the 2001 *Record of Decision and Standards and Guidelines for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines* (2001 ROD), as modified by the 2011 Settlement Agreement.

The BMPs listed in Chapter 2 were used to ensure that all of the alternatives are consistent with the Wenatchee National Forest Plan as amended by the Northwest Forest Plan and the Pacific Northwest Region, Invasive Plant Program, Preventing and Managing Invasive Plants, Record of Decision, and would be incorporated into construction contracts.

Effects Determination to ESA Listed Plants and Critical Habitat

No ESA Listed plants or Critical habitat occur in the proposed project area; therefore the determination is “no effects”.

Effects Determination to Regional Forester’s Sensitive, Special Status, and Survey and Manage Species
No R6 Sensitive, Special Status, or Survey and Manage species are known to occur in the proposed project area; therefore the determination is no effect.

Cultural Resources

Existing Conditions

National Register Evaluation of Documented Sites and Isolates: The Leavenworth Ski Hill Site (OWNF #06170700107) is listed on the National Register under criteria A and C. The site contributed to the development and promotion of ski jumping both at the national and international levels. The ski area was renowned for its jumps and tournaments throughout the world and many national and international distance records were set and broken at the site. Many local jumpers set those records and a few went on to Olympic competition and the National Ski Hall of Fame. These same individuals were and remain legends in the local community. The area was one of the earliest Forest Service recreational sites in the Pacific Northwest and it played a major role in the development of recreation in the Forest Service. Lastly, the site is a showcase for CCC innovation and construction during a difficult and important era in the history of the United States.

With respect to criterion C, the site is complex with multiple buildings that are all associated with the operation of the ski area from 1930 to the present. Some of the structures have been in place since initial construction in the 1930s while others were added after 1957. Only four historic buildings remain on site: the lodge, the two restrooms and the garage/ticket-booth. All of these are good examples of Forest Service/CCC ingenuity and construction and can be readily identified as such. But of the four buildings, only the lodge, the men's restroom and the 1940s garage/ticket booth retain enough integrity of location, function and structure to warrant consideration as contributing elements. The lodge is in excellent condition with minimal modification to its original historic interior and exterior elements. Few buildings associated with the CCC on the Forest retain this level of architectural integrity. There is one other CCC-era recreational lodge on the Forest (American Forks Ski Lodge) but it is less ornate and of much simpler design. The men's restroom, although no longer in use, is in fair to good condition and it is architecturally unique. The garage is in fair to good condition and modifications to the windows and garage door are easily reversible. The women's toilet should not be considered a contributing element because although it remains on site, it has been moved and converted to house a rope tow. Its appearance and function have been altered substantially and the building is in poor condition.

The other buildings on site should not only be considered non-contributing now due to their age but none of them possess unique or representative characteristics that will warrant reconsideration as contributing elements in the near future when they do achieve historic status. The 1957 A jump trestle is in disrepair and it is structurally unsound. A number of the timbers are either missing or rotted and collapse appears imminent. Terracing on the slope below the A jump dates to 1957 as well but is not remarkable. The jumps below and north of the A jump are of earthen construction only. At best, an arc of cinderblocks identifies the take off for one of the jumps while the other is barely visible on a slope that is now deeply eroded. The run out for these jumps is of mounded earth only and is unremarkable. The 1960s rope tow building is simple in design and mimics the Leavenworth "Bavarian" theme in roof trim only. The building is architecturally out of character with the rest of the site. The 1970s practice hill involved in this undertaking is likewise unremarkable at the present time but may warrant reconsideration 50 years from now.

Direct and Indirect Effects

The proposed projects will enhance the character defining features of the historic lodge and surrounding landscape, both of which contribute to the significance of the Leavenworth Ski Hill site. The projects will also improve and upgrade the infrastructure required to support the lodge and ski hills for the site's continued use as a recreational facility. Therefore, the proposed projects will have "no adverse effect" upon the lodge and surround landscape within the Leavenworth Ski Hill site.

Cumulative Effects

The area considered for cumulative effects include the project area and adjacent lands. Past actions considered began when European settlers began influencing wildlife populations over a century ago, and foreseeable actions are considered 10 to 20 years into the future, when the proposed action would be complete and long term benefits would began to be realized.

Consistency Finding

The project is in compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, 36 CFR 800, Executive Order 13007, and the Forest's Programmatic Agreement regarding cultural resource management on national forests in Washington State (1997). In the event that the nature or boundaries of the project are modified, additional consultation with the Forest Heritage Program Manager is required. In the event that cultural resources or human remains are discovered, all activities in the immediate area will stop and the Forest Heritage Program Manager will be notified immediately in accordance with the Forest Heritage Program Inadvertent Discovery Plan. Additional consultation with the Washington State Historic Preservation Officer (SHPO) and the Tribal Historic Preservation Officers (THPO) for the Yakama Nation and the Confederated Colville Tribes will be completed in the event of a project modification or inadvertent discovery of human remains or cultural resources. The project will not take place until formal consultation with the Washington SHPO is completed and formal determination of project effect is agreed upon.

Recreation

This section describes the current recreational activities available within the project area and the effects of the no-action alternative and proposed action alternative on these activities and opportunities.

Existing Conditions

The project area is a developed recreation site that receives moderate use by the public year-round, most notably during the winter, but an increasing user's base is becoming present throughout the year. The Ski Hill area is located directly adjacent to the town of Leavenworth, where all of the proposed projects are located, and consists of the Ski Hill Lodge in addition to the recreational space, both within the LWSC permit boundary. The overall Ski Hill area provides a number of winter and summer recreational activities. Winter activities consist of groomed alpine ski hills and Nordic trails, along with a tubing hill. Summer activities include use of the Nordic ski trails by hikers, mountain bikers, and equestrians. The alpine ski base area and Ski Lodge are utilized for special events such as weddings, summer camps and other gatherings. Leavenworth Summer Theater operates an amphitheater under Special Use Permit and stages 20 performances attracting 500 people per night from 8:00 PM to 10:30 PM during summer evenings from July through early September. The Theater is located behind the Ski Lodge and is along one of the existing Nordic trails. The historic Lodge and Ski Area have continued to see an increase in visitation over the years. The demand for recreational opportunities has increased, thus requiring continual maintenance and much needed upgrades to the Lodge and Ski Area amenities.

The majority of winter recreation at the Ski Hill is alpine skiing which takes place on two slopes, the Bunny Hill, served by the little rope tow and the Big Hill, served by the big rope tow. The Bunny Hill is a small, gentle slope primarily used by children and beginning skiers. As presently configured, the gradient of the Bunny Hill slopes toward the rope tow and is problematic, as it tends to funnel skiers (especially beginners) up against the rope. The Bunny Hill also has a natural low point at the base where skiers load onto the tow, again causing a safety concern by funneling downhill skiers into those waiting to load the rope tow. Currently both the big and little tow rope anchor spar consist of a live tree as the anchor point. In the Ropeway Monitoring Report from October, 2015 both anchor spars were identified as deficient with a recommendation being made for removing all terminal equipment from the anchor support trees and replacing them with a non-living structural support as soon as practical.

The historic Ski Hill Lodge, built in the early 1930's serves as a hub for winter recreation activities and is open to the public during alpine ski hours and provides a snack bar and restroom. As it is structured, the main floor of the Lodge has 1,000 square feet of open space with a centralized fireplace where skiers and visitors are able to relax, warm-up, and socialize. This area becomes quite crowded on busy days when the Ski Hill hosts up to 200+ visitors at one time.

Current conditions of the Lodge septic system and restrooms are not at a level to serve the present or future demand while providing adequate and suitable accommodations. The septic system, which was last upgraded in the 1980's, is prone to intermittent failure and improvements need to be made in order to handle the current and growing usage demands. Current restrooms at the Lodge consist of one men's and women's restroom, both located in the basement and are not ADA accessible. In order to meet the current needs of visitors at Ski Hill there are an additional three portable restrooms on-site in the parking area.

The kitchen in the Lodge is currently utilized as a snack bar and is not equipped to provide a wide range of food options or full meals to visitors.

Direct and Indirect Effects of No Action

The no action alternative would not improve upon the current recreational experience at Ski Hill and would not address the current safety concerns related to the gradient of the Bunny Hill and the deteriorating soundness of the big and little rope tow anchor spars. The no action alternative would not provide the infrastructure improvements needed to meet the current and future needs of Ski Hill users. The septic system and restrooms would continue to be inadequate for current and future demands with the continued likelihood of recurring failure. The restrooms would also continue to fail meeting the needs of current use and does not meet today's standard of providing ADA accessible amenities. The kitchen would continue to be limited and able to only provide a snack-bar feature and not produce a full menu of items. During periods of heavy use the Ski Hill Lodge will continue to experience congestion and overcrowding inside on the main level where people gather to warm up, relax and purchase snacks.

Direct and Indirect Effects of Proposed Action

The Leavenworth Ski Hill Improvement project is an effort by the skiing community of Leavenworth to protect the heritage and tradition of skiing at the Leavenworth Ski Hill so that generations of kids and families can share the excitement, beauty, and community of skiing. Full descriptions are in the project file and partially excerpted here. The project would directly and indirectly change the quality of overall recreational experience in a positive manner with the following actions:

1. Build new patio including propane tank and stairway
2. Build new ADA restroom
3. Resurface existing foot paths leading to the lodge with crushed gravel
4. Repurpose existing bathroom to one unisex accessible bathroom

5. Upgrade lighting
6. Upgrade kitchen appliances and hardware in the interior
7. Install new septic tank and drain field
8. Remove trees from Bakke Hill Ski Jump
9. Move existing woodshed structure to new location
10. Re-grade bunny hill
11. Replace big rope tow top anchor spar
12. Replace little tow spar

The proposed action will be discussed as it relates to recreation in the following categories:

Improvements adjacent to and inside the Lodge (#1-7)

The result of proposed actions 1-7 do not have any direct effect on the current recreation activities at the Ski Hill, but would have a definite positive indirect effect on the overall recreational experience of visitors. The proposed improvements are a benefit to the community of Leavenworth by making the Lodge more attractive for visitors. The upgrades to the interior of the Lodge will improve accessibility and services to visitors, streamline operations, and complete much needed maintenance. Existing concession service counter and seating configuration will remain the same, but kitchen equipment will be replaced with commercial fixtures to allow for increased menu options, improved flow, and service a large number of commercial guests. The improvements made adjacent to the Lodge will also improve upon the visitor's experience with the addition of the patio and associated improvements. The patio, stone steps, lighting and path resurfacing will serve to improve accessibility and safety around the lodge and provide additional 2,000 square feet of gathering space for visitors to relax, sit, socialize, and warm up with an integrated outdoor fire pit. Additionally, a new septic system and ADA accessible restroom will better accommodate visitors and lend itself to a better experience as well.

Improvements (#8-9)

Removing trees from the Bakke Hill Ski Jump will have no direct effect on recreation, but could enhance the overall recreational experience by allowing visitor to visually take in a historic recreation element of the Ski Hill. Moving the existing woodshed structure to a new location has no effect on recreation, but if a new ADA accessible restroom was established in its place then a benefit would be provided to recreationalists in an indirect fashion.

Improvements to the Bunny Hill and Rope Tow Spars (#10-12)

The regrading of the Bunny Hill will have a direct impact on recreational safety and improve the comfort level of all skiers on the slope. Replacing the big and little rope tow anchor spars will have a direct effect on recreational visitors and employees by increasing safety during winter operations.

Cumulative Effects

The area analyzed for recreation cumulative effects is the area within the LWSC operating permit boundary on the Ski Hill site and encompasses a timeframe of immediately following the completion of the project to 25 years following. The only cumulative effects from existing or proposed project actions are addressed in the above write-up.

Reasonable foreseeable future actions which may affect recreation in the project area include 1) Potential Ski Hill trailhead construction and maintenance and 2) Implementation of temporary or permanent snowmaking facilities.

- 1) Ski Hill trailhead construction and maintenance would have a positive impact on the recreation resource and the overall experience for visitors which park in the existing west trailhead parking lot. There is currently not a toilet to serve users during the non-winter season when the Ski Hill Lodge is not open, yet moderate use still occurs. There are increasing sanitary concerns related to the growing year-round use, therefore improvements to the existing parking lot and the addition of a CXT restroom would only serve to increase the user's recreational experience.
- 2) If temporary or permanent snowmaking facilities were added to the Ski Hill infrastructure and used during the winter months to compensate for below average snow conditions, the result would be an extended ski season and result in a value added service for winter recreationalists.

Consistency Finding

The proposed actions within this project would meet the desired conditions consistent with the Wenatchee National Forest Land and Resource Management Plan (USDA Forest Service, 1990), page IV-69, Recreation Facility and Site Management objectives.

Engineering

Existing Condition

The Ski Hill project area includes the following Forest Service owned facilities: the Ski Hill Lodge (#5946) constructed in 1935, the Garage (#5484) constructed in 1993, and the Lift Shack (#5128) constructed in 1939. All three facilities are currently under a Special Use Permit with the Leavenworth Winter Sports Club with Auth. ID LEA516404 that was issued on 5/15 /2008. None of the facilities are accessible.

With regards to the water system, the Lodge is served by a well with the Washington State Dept. of Ecology well tag ID BIN820 that was installed in 1960. Based on the 2013 Cross-Connection Assessment, wellhead protection of the BIN820 well using bollards or rocks is needed. The water system is registered with Washington State Dept. of Health and is a Group A-TNC (Transient, Non-community) with ID FS519-7. The water distribution system consists of a pressure tank and 2 service connections (Lodge and yard hydrant).

With regards to the wastewater system, the Lodge is on an individual on-site septic system that is in a poor condition.

Direct and Indirect Effects of No Action

Under the No Action Alternative, the facility will remain as is and will continue to deteriorate and may become unusable over time.

Direct and Indirect Effects of Proposed Action

This Alternative proposes the following actions that relate to Engineering:

1. Build a new patio including propane tank and stairway
2. Upgrade outdoor lighting
3. Resurface existing footpaths leading to the lodge with crushed gravel
4. Build a new restroom
5. Install a new septic tank and drain field
6. Replace the big rope tow top anchor spar
7. Replace the little tow spar

Under this Alternative, the facility would be improved greatly, which may result in increase in visitors at the site. There are no adverse impacts except a possible increase in peak water demand and therefore, a larger pressure tank size may be required (current pressure tank size and pump capacity is unknown).

Cumulative Effects

The possibility of a temporary or a permanent snow making facility would have no adverse impacts as new water source would be developed specifically for that purpose.

Consistency Finding

The Proposed Action is in compliance with the Forest Plan for Developed Recreation sites and facilities. The Ski Hill Lodge is in need of a significant upgrade and improvement; it is a high priority because of its high visitor use. In addition, the Proposed Action is in compliance with agency policy and regulations since new construction will meet accessibility standards and will promote sustainable measures.

CHAPTER 4: CONSULTATION AND COORDINATION

Details regarding the public involvement, collaboration and consultation process are previously discussed in Chapter 1 of this document.

The following agencies and governments were consulted during preparation of this project:

Yakama Indian Nation
Confederated Tribes of the Colville Nation
USDI Fish and Wildlife Service
USDC National Marine Fisheries Service
Washington State Office of Historic Preservation

Organizations and members of the public that provided input on the project:

Leavenworth Winter Sports Club (LWSC)
Mark Millette

The following Forest Service personnel were involved in the preparation of this document.

Mick Mueller	Team Leader/EC
Don Youkey	Wildlife
Kathy McMillan	Soils/Hydrology
Lauri Malmquist	Botany
Cindy Raekes	Fisheries Technician
Barbara Jackson	Scenery
Sara Jones	Recreation/Social/Co-Team Leader
Lindsey Smith	Archeology
Jeffery Rivera	District Ranger
Brantley Bain	Engineering
Mike Barajas	Fire/Fuels

CHAPTER 5: LITERATURE CITED AND REFERENCES

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The Leavenworth Ski Hill Parking Lot report documented a literature review of the ski hill site prior to activities in the parking lot area. The proposed project was determined to have “no effect” on the Leavenworth Ski Hill site.

R2001061707003

The Leavenworth Ski Hill Jump Renovation report documented the pedestrian survey of the proposed project area consisting of an existing 1970s-era ski jump and associated infrastructure. The Leavenworth Winter Sports Club proposed to rework and improve the structure and surround area. The proposed project was determined to have “no adverse effect” on the Leavenworth Ski Hill site per SHPO concurrence on June 1, 2001.

R2003061707001

The Leavenworth Ski Hill Cross Country Ski Trail report documented the pedestrian survey of the proposed project area consisting of 1.5 miles of new cross-country trails outside of the Leavenworth Ski Hill Historic District boundary. The trails tied into the trail system within the historic site boundary, but were found to have “no effect” on the Leavenworth Ski Hill site.

R2005061707006

The Leavenworth Ski Hill Tubing Project report documented the pedestrian survey of the proposed tubing hill lift and utility line corridor between the rope-tow building and tubing lift. The proposed project was determined to have “no adverse effect” on the Leavenworth Ski Hill site per SHPO concurrence on September 12, 2005.

R2011061707009

The Leavenworth Ski Lodge and Garage/Ticket Booth Roof Replacement report documented the photographic recordation of the lodge and ticket booth buildings prior to the restoration of the shake roofs on both structures. The proposed project was determined to have “no effect” on the Leavenworth Ski Hill site per SHPO concurrence in March 2011.

R2012061707006

The Leavenworth Ski Hill 2012 Bavarian Battle report documented a literature review of the ski hill site prior to the issuance of a special use permit for the proposed event. The event was determined to have “no effect” on the Leavenworth Ski Hill site.

R2013061707004

The Leavenworth Ski Area Nomination and National Register of Historic Places Listing report documented the completion of a National Register nomination. The Leavenworth Ski Hill site was listed on the Washington State Register February 21, 2013 and on the National Register July 29, 2013.

R2014061707011The Leavenworth Ski Hill Power Line replacement report documented the pedestrian survey of the proposed underground utility line corridor to the lodge. The proposed project was determined to have “no adverse effect” on the Leavenworth Ski Hill site per SHPO concurrence, August 6, 2014.

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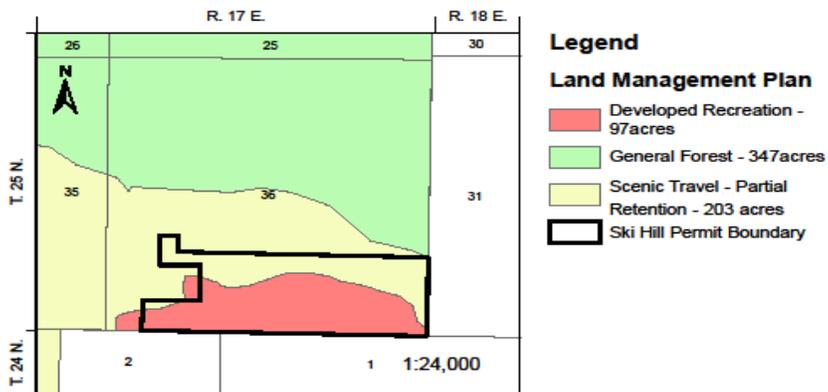
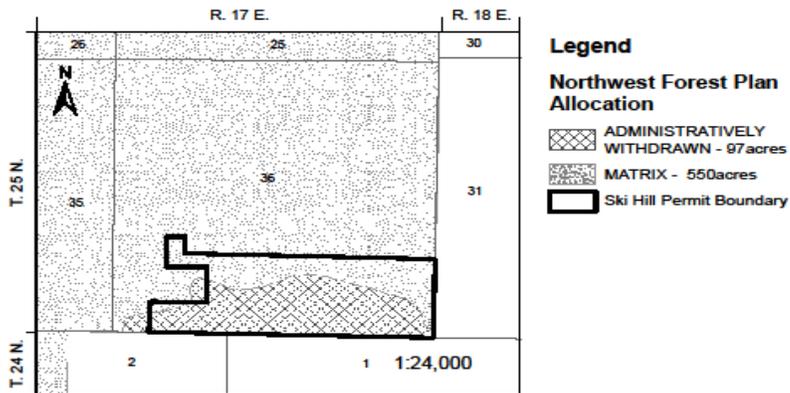
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APPENDICES

Appendix A – Maps

Figure 1. Wenatchee Forest Land Management Plan Allocations Map and Northwest Forest Plan Allocations Map for Ski Hill Project Area



Appendix B – Tables

Table 1. USFWS and NMFS Endangered Species Act listed species potentially impacted by the Ski Hill Improvements project.

Species/Habitat	Habitat Present	Species Present	Design Criteria	Effects Determination
USFWS and NMFS Listed Species and Habitat				
Canada lynx (<i>Lynx canadensis</i>)	No	No	None	No Effect
Gray wolf (<i>Canis lupus</i>)	No	No	None	No Effect
Grizzly bear (<i>Ursus arctos horribilus</i>)	No	No	None	No Effect
Marbled murrelet (<i>Brachyramphus marmoratus</i>)	No	No	None	No Effect
Northern spotted owl (<i>Strix occidentalis caurina</i>)	No	No	None	No Effect
Critical habitat, spotted owl	No	N/A	None	No Effect
Critical habitat, Canada lynx	No	N/A	None	No Effect
Mardon skipper (<i>Polites mardon</i>)	No	No	None	No Effect
Wolverine (<i>Gulo gulo</i>)	No	No	None	No Effect

Table 2. USDA Forest Service Region 6 Sensitive Species potentially impacted by the Ski Hill Improvement project.

Species	Habitat Present	Species Present	Design Criteria	Effects Determination
USDA Forest Service R6 Sensitive Species				
Astarte fritillary (<i>Beloria Astarte</i>)	No	No	None	No Impact
Meadow fritillary (<i>Beloria bellona</i>)	No	No	None	No Impact
Freija fritillary (<i>Boloria freija</i>)	No	No	None	No Impact
Labrador sulphur (<i>Colias nastes</i>)	No	No	None	No Impact
Lustrous copper (<i>Lycaena cupreus</i>)	No	No	None	No Impact
Melissa arctic (<i>Oeneis Melissa</i>)	No	No	None	No Impact
Peck's skipper (<i>Polites Peckius</i>)	No	No	None	No Impact
Tawny-edged skipper (<i>Polites Themistocles</i>)	No	No	None	No Impact
Great Basin fritillary (<i>Speyeria egleis</i>)	No	No	None	No Impact
Zigzag darner (<i>Aeshna Stichensis</i>)	No	No	None	No Impact
Subarctic darner (<i>Aeshna subarctica</i>)	No	No	None	No Impact
Subarctic bluet (<i>Coenagrion interrogatum</i>)	No	No	None	No Impact
Chelan mountain snail (<i>Oreohelix new sp. 1</i>) ^{S&M only}	No	No	None	No Impact
Grand Coulee mountain snail (<i>Oreohelix junii</i>)	No	No	None	No Impact
Masked dusksnail (<i>Lyogyrus sp. 2</i>) ^{S&M only}	No	No	None	No Impact
Blue-gray taildropper (<i>Prophysaon coeruleum</i>) ^{S&M}	No	No	None	No Impact
Puget Oregonian snail (<i>Cryptomastix devia</i>) ^{S&M}	No	No	None	No Impact
Columbia Gorge Oregonian (<i>Cryptomastix hendersoni</i>) ^{S&M o}	No	No	None	No Impact
Shiny tightcoil snail (<i>Pristoloma wascoense</i>)	No	No	None	No Impact
Larch mountain salamander (<i>Plethodon larselli</i>) ^{S&M}	No	No	None	No Impact
VanDyke's salamander (<i>Plethodon vandykei</i>) ^{S&M only}	No	No	None	No Impact
Pacific pond turtle (<i>Actinemys marmorata</i>)	No	No	None	No Impact
California mountain kingsnake (<i>Lampropeltis zonata</i>)	No	No	None	No Impact
Striped whipsnake (<i>Masticophis taeniatus</i>)	No	No	None	No Impact

Common loon (<i>Gavia immer</i>)	No	No	None	No Impact
Harlequin duck (<i>Histrionicus histrionicus</i>)	No	No	None	No Impact
Bald eagle (<i>Haliaeetus leucocephalus</i>)	No	No	None	No Impact
American peregrine falcon (<i>Falco pergrinus anatum</i>)	No	No	None	No Impact
Ferruginous hawk (<i>Buteo regalis</i>)	No	No	None	No Impact
Sharp-tailed grouse (<i>Tympanuchus phasianellus</i>)	No	No	None	No Impact
Sandhill crane (<i>Grus canadensis</i>)	No	No	None	No Impact
Great gray owl (<i>Strix nebulosa</i>) ^{S&M}	No	No	None	No Impact
Gray flycatcher (<i>Empidonax wrightii</i>)	No	No	None	No Impact
Ash-throated flycatcher (<i>Myiarchus cinerascens</i>)	No	No	None	No Impact
White-headed woodpecker (<i>Picoides albolarvatus</i>)	No	No	None	No Impact
Pallid bat (<i>Antrozous pallidus</i>)	No	No	None	No Impact
Townsend's big-eared bat (<i>Corynorhinus townsendii</i>)	No	No	None	No Impact
North American wolverine (<i>Gulo gulo luscus</i>)	No	No	None	No Impact
Pacific fisher (<i>Martes pennanti pacifica</i>)	No	No	None	No Impact
Mountain goat (<i>Oreamnos Americanus</i>)	No	No	None	No Impact
Western gray squirrel (<i>Sciurus griseus</i>)	No	No	None	No Impact

^{S&M}Also listed as “Survey and Manage” species in the 2001 ROD for Amendments of the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines, USDA Forest Service and USDI BLM.

* Design Criteria for TES species will also mitigate effects to these species.

Table 3. Wenatchee National Forest Plan Management Indicator Species potentially impacted by the Ski Hill Improvements project.

Species/Habitat	Habitat Present	Species Present	Design Criteria	Effects Determination
Wenatchee National Forest Plan MIS				
Northern spotted owl	No	No	None	No Impact
Pileated woodpecker	No	No	None	No Impact
Three-toed woodpecker	No	No	None	No Impact
American Marten	No	No	None	No Impact
Mountain goat	No	No	None	No Impact
Mule deer	Yes	Yes	None	No Impact
Rocky Mountain Elk	No	No	None	No Impact
Beaver	No	No	None	No Impact
Ruffed grouse	No	No	None	No Impact
Primary cavity excavators	Yes	Yes	None	No Impact

* Design Criteria for TES species will also mitigate effects to these species.

Effects Determinations for Threatened and Endangered species: NE = No Effect; NLAA = May Affect, Not Likely to Adversely Affect; LAA = May Affect, Likely to Adversely Affect; BE = Beneficial Effect.

Effects determinations for Sensitive species: MIIH=May impact Individuals or Habitat, but Will Not Likely Contribute to a Trend Towards Federal Listing or Loss of Viability to the Population or Species; WIFV=Will Impact Individuals or Habitat, with a Consequence that the Action may Contribute to a Trend Towards Federal Listing or Cause a Loss of Viability to the Population or Species (Considered a trigger for significant action in NEPA)

Effects determinations for MIS species: NI=No Impact, no negative trend in viability; IC=Improved Conditions, no negative trend in viability; SNI=Small Negative Impact, small negative trend of habitat but insignificant at the scale of the Forest; LNI=Large Negative Impact, may or may not equate to a threat to continued viability on the Forest.

