SNOWMASS SKI AREA
SNOWMASS SKI TRAIL ENHANCEMENTS AND HIGH ALPINE LIFT REPLACEMENT ENVIRONMENTAL ASSESSMENT

FINAL DECISION NOTICE AND FINDING OF NO SIGNIFICANT IMPACT

APRIL 2015

USDA Forest Service
White River National Forest
Aspen-Sopris Ranger District

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AND
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USDA Forest Service, Rocky Mountain Region
White River National Forest
Aspen-Sopris Ranger District
Pitkin County, Colorado

April 2015

INTRODUCTION/BACKGROUND

This Decision Notice documents my decision and rationale for approving the proposed projects on the Aspen-Sopris Ranger District, White River National Forest (WRNF). The Project Area is located within Snowmass Ski Area (Snowmass), Pitkin County, Colorado. My decision is based on and supported by the December 2014 *Snowmass Ski Trail Enhancements and High Alpine Lift Replacement Environmental Assessment* (EA).

Snowmass operates under a special use permit (SUP) administered by the WRNF's Aspen-Sopris Ranger District. The *2002 White River National Forest Land and Resource Management Plan* (Forest Plan) provides general standards and guidelines for the operation of Snowmass regarding its activities and operations on National Forest System (NFS) lands. The SUP and associated summer and winter operating plans, as well as other resource management documents, provide more specific guidance for annual winter and summer ski area operations and projects. The projects are consistent with the Snowmass Mountain Master Plan, as amended.

PURPOSE AND NEED FOR ACTION

The purpose of the proposed projects is to address existing constraints and conditions and further improve the skiing experience at Snowmass. The projects would meet the following needs:

1. Improve guest circulation in the High Alpine lift pod

The existing High Alpine lift is a fixed-grip, two-person lift and is more than 35 years old. It has exceeded its functional capability and does not meet current guest expectations with respect to lift ride time. The existing location of the top and bottom lift terminals do not adequately and efficiently serve

surrounding terrain including *Upper Green Cabin* trail. There is a need for a lift alignment and lift technology that better meets the needs of guests in the High Alpine lift pod, improves access to *Upper Green Cabin*, and improves circulation for skiers moving between the *Cirque* area and the *Hanging Valley Wall* area.

2. Improve the reliability of snow conditions on Green Cabin trail

Unreliable snow coverage between the *Big Burn* area and *Green Cabin* trail creates skier circulation challenges and limits ways guests can ski within this area. With a realignment of the High Alpine lift, there is a need for reliable snow conditions on *Green Cabin* to meet anticipated skier densities and use.

3. Expand the variety of gladed terrain offerings for multiple ability levels

The existing gladed terrain at Snowmass is primarily classified at an expert ability level. There is need for intermediate and advanced ability level gladed terrain to provide a gladed ski experience for a variety of ability levels.

4. Address skier circulation issues in the Elk Camp area

Trail congestion frequently occurs in the *Elk Camp* area. For those higher ability level guests traveling through *Elk Camp* to the *Alpine Springs* area, the congestion and high skier densities of this area detracts from the guest experience and can cause skier conflicts. There is a need for reduced congestion in the *Elk Camp* area and alternate means for guests to more directly access the *Alpine Springs* or *Base Village* areas.

5. Facilitate the movement of novice skiers between the *Elk Camp Meadows* and base areas

Novice skiers using the *Elk Camp Meadows* area are typically not sufficiently skilled to ski or ride the steeper pitches on *Lower Funnel* trail and typically ride the gondola to *Assay Hill* for their first experience on Level 3 teaching terrain. There is a need for improved access for Level 3 ski school students between the *Elk Camp Meadows* and *Base Village* areas.

DECISION AND REASONS FOR THE DECISION

After thoroughly considering the Purpose and Need for Action, issues, range of alternatives and analyses presented in the EA, as well as public comments that were received, **I am approving Alternative 2 – the Proposed Action**. Project Design Criteria (PDC) identified in Table 2-3 of the EA have been carried forward. Final PDC are included in **Appendix A** of this document, and are hereby required as part of this decision.

Alternative 2 will include replacement and realignment of the High Alpine lift, snowmaking on 26 acres of the *Green Cabin* and *Trestle* trails, six glading projects totaling 84 acres, and construction of the *Elk*

Camp Lower Bypass and *Level 3* trails. The attached figure identifies components of the selected alternative.

ALTERNATIVE 2 DESCRIPTION

The selected alternative includes the following:

High Alpine Lift Replacement/Realignment

The existing fixed-grip, two-person, High Alpine lift will be replaced with a detachable-grip, four-person lift. Chairs will be spaced so as to maintain the existing uphill capacity of the lift—1,200 persons per hour. The bottom terminal is proposed on *Upper Green Cabin* trail, approximately 1,000 linear feet downhill and northwest of the High Alpine Restaurant. The top terminal will be located approximately 500 linear feet uphill and southwest of the existing High Alpine lift top terminal. Clearing distances from each side of the lift centerline will be feathered to minimize the straight-line appearance from the lift line clearing.

Construction and maintenance access to the top terminal will be provided via an existing road (approximately 5,700 linear feet) and a proposed road spur (approximately 900 linear feet) that generally follows *Upper Green Cabin*. The existing road which services the top terminal location will be improved (including rock removal and limited grading) to a width of 12 feet to allow for service access by vehicles no larger than pick-up trucks and ATVs. Major top terminal lift components will be transported to the summit via bulldozer directly up *Upper Green Cabin*. To access the proposed bottom terminal location, the abandoned road down *Green Cabin* will be improved and realigned (approximately 1,500 linear feet), essentially creating a new road segment.

Snowmaking

Snowmaking will be installed on *Green Cabin* from the Sheer Bliss Pond to the top terminal of the Alpine Springs lift, and on *Trestle* from the point where the Big Burn lift crosses *Trestle* to the intersection of *Trestle* and *Green Cabin*. Snowmaking guns will not be located on the bridge on *Trestle*, but snowmaking on either side would be used to supply snow coverage for the bridge. The water line will be insulated and suspended below the bridge. In total, snowmaking will cover approximately 26 acres of terrain. Approximately 8,400 feet of water, air, and electrical lines will be installed to facilitate this snowmaking.

Glading Projects

Six areas of gladed skiing projects, totaling approximately 84 acres, will be implemented. Approximately 30 to 40 percent of tree basal area will be cleared from gladed areas; however, some areas are naturally gladed and will require little tree removal. Glading will be conducted in a way that opens skiable lines while maintaining the age and species class diversity of existing tree stands.

Sneaky's Glade

Sneaky's Glade is an intermediate gladed area near the western operational boundary of the ski area. The upper section of this glade will be thinned. The project will result in approximately 14 acres of glading.

Freefall/Glissade Glade

Freefall/Glissade Glade is an advanced gladed area on the skier's right side of *Garrett Gulch*. The area between *Freefall* and *Glissade* will be gladed to improve the transition from the bottom of *Freefall* to the top of *Glissade*. This project will result in approximately 9 acres of glading.

Reidar's Glade

Reidar's Glade is an advanced gladed area on the skier's right side of the lower portion of *Reidar's Run*. Additional clearing will occur within this natural glade to expand the overall glade skiing opportunities in this area. This project will result in approximately 29 acres of glading.

Castle Glade

Castle Glade is an expert gladed area between *Baby Ruth* and *Hanging Valley Glade*. This project will result in approximately 9 acres of glading.

Long Shot Glade

The *Long Shot Glade* will be located on the skier's left side of *Long Shot* and will provide approximately 15 acres of intermediate level gladed skiing.

Upper Green Cabin Glade

The *Upper Green Cabin Glade* will be located on the skier's left side of *Upper Green Cabin* and will provide approximately 8 acres of intermediate level gladed skiing.

Developed Trails

Elk Camp Lower Bypass Trail

The proposed *Elk Camp Lower Bypass* trail will connect *Turkey Trot* with *Adam's Avenue*. The *Elk Camp Lower Bypass* will diverge from *Turkey Trot* to the left immediately south of Rayburn's Pond and intersect *Adam's Avenue* on the west side of *Funnel*. The proposed trail will reduce congestion around the Elk Camp Restaurant and the Elk Camp lift loading area by allowing advanced skiers to bypass this area and return more directly to the *Alpine Springs* or *Base Village* areas. This trail will circumvent a long flat area near *Elk Camp*. In addition to eliminating this flat section, the trail will reduce the total length of the trip between *Hanging Valley Wall* and the Alpine Springs lift by more than 0.3 mile.

Level 3 Trail

A new trail will be constructed between *Funnel* and *Naked Lady* to facilitate movement of Level 3 ski school students from *Elk Camp Meadows* to the *Base Village* area by avoiding steeper pitches on *Lower Funnel*. The trail will use existing portions of *Funnel Bypass*, *Funnel*, and *No Name*. From *No Name*, the trail will traverse approximately 500 feet of terrain to the existing lower portion of *Naked Lady*. The trail will average 30 feet wide.

RATIONALE FOR MY DECISION

In reaching my decision I relied heavily upon an Interdisciplinary (ID) Team comprised of Forest Service resource specialists who analyzed the effects of the two alternatives documented in the EA. I considered the following issues and concerns: anticipated effects to recreation, scenery, wildlife, vegetation, soil resources, and watersheds. I also understand that certain resources were not carried forward in detailed analysis for the EA; however, those resources were considered by the ID Team and determined to be eliminated from detailed analysis with rationale. I also reviewed the PDC included in the EA, incorporated additional PDC, reviewed public comments during scoping and on the EA, and considered how the selected alternative would respond to the stated Purpose and Need.

In reviewing the qualitative and quantitative effects on the human and biological environment presented in the EA, I find they have been adequately addressed and disclosed. I considered impacts to the full range of resources affecting the human, biological, and physical environments. I have reviewed the potential direct, indirect, and cumulative impacts. Specifically, I have considered impacts to Canada lynx, water yield and depletions, other listed wildlife species, and wetlands within project areas. Through the NEPA process, the ID Team worked with the proponent to modify and refine several elements of the Proposed Action, including adjustments to the bottom terminal of the proposed High Alpine lift to avoid impacts to wetlands and adjusting the proposed glading area of Sneaky's Glade to reduce habitat disturbance to Canada lynx. Through the application of appropriate PDC identified to minimize impacts to the resources of concern, I feel confident that potential impacts have been thoroughly assessed and disclosed.

Overall, I believe my decision will improve the experience of guests to the Forest within the Snowmass SUP area in conjunction with the stated environmental impacts.

Project Design Criteria

The EA presents PDC in Chapter 2, Table 2-3, which have been incorporated into the selected alternative. My decision includes the PDC as described in the EA, along with additional PDC, which are included in **Appendix A** of this Decision Notice. Failure to comply with the required PDC will constitute a breach of the project approval and could temporarily suspend construction and/or operations on the facilities approved by this decision.

The selected alternative, along with my decision to require PDC, meets all applicable laws, regulations, and policies. With the application of PDC, the project will not result in any unacceptable effects to NFS lands.

Snowmass is required to prepare and submit for Forest Service approval several documents -- prior to beginning any approved construction activities. For example:

- Engineering evaluation of the Sheer Bliss Pond by a professional engineer licensed in the state of Colorado
- Project construction and grading plans
- Pre-construction erosion control/drainage management plans
- Noxious weeds annual monitoring report (for three years post-construction)
- Post-construction revegetation and rehabilitation plans

OTHER ALTERNATIVES CONSIDERED

The No Action Alternative and the Proposed Action were the only alternatives analyzed in detail in the EA; however, multiple alternatives and design components were considered early in the NEPA process. These alternatives included: not replacing the High Alpine lift, replacing the High Alpine lift in its current alignment with newer fixed-grip technology, and not improving additional, proposed gladed terrain areas. Each concept was thoroughly considered by the Forest Service (Aspen Skiing Company was consulted, as necessary) and, for various operational, recreational, and environmental factors, none were carried forward into detailed analysis.

PUBLIC INVOLVEMENT

In August 2014 a scoping notice was mailed to approximately 45 community residents and released to the public, initiating a 30-day comment period. The 12 comment letters received during scoping were utilized by the ID Team to identify substantive issues and to consider potential alternatives to the Proposed Action. After reviewing public comments, as well as internal concerns raised by Forest Service specialists, a list of issues was assembled, which helped guide subsequent analysis. Issues are identified in Chapter 1 of the EA.

In December 2014 the EA was released for public review and comment. In response to the EA, a total of seven comment letters were received. The substantive comments included in those comment letters form the basis for the Response to Comments, which was included with the draft Decision Notice.

FINDING OF NO SIGNIFICANT IMPACT

After reviewing the EA, I have determined that the selected alternative will not, individually or cumulatively, significantly affect the quality of the human, biological, or physical environment. The provisions of 40 CFR 1508.27 indicate that project significance must be judged in terms of both *context* and *intensity*. Based on a review of these provisions, I have determined that an environmental impact statement is not required. I base my findings on the following definitions of *context* and *intensity*:

CONTEXT

The significance of an action must be analyzed in several contexts and varies with the setting. In the case of site-specific actions, significance depends more on the effects in the locale rather than the world as a whole. Both short- and long-term effects are relevant.

The direct and indirect effects analysis contained in the EA focuses on the Snowmass project area, and extends further for cumulative effects analysis, depending on the resource. An initial screen was conducted to ensure that the selected alternative is consistent with the 2002 Forest Plan. The EA does not indicate that anything in the selected alternative would lead to a precedent at the local, regional, or national level.

INTENSITY

Intensity is a measure of the severity, extent, or quantity of effects, and is based on information from the effects analysis of this EA and the references in the project file. I have determined that the ID Team considered the effects of this project appropriately and thoroughly with an analysis that is responsive to concerns and issues raised by the public. They considered the environmental effects using relevant scientific information and their knowledge of site-specific conditions gained from field visits. My finding of no significant impact is based on the intensity of effects using the ten factors identified in 40 CFR 1508.27(b).

1. Consideration of both beneficial and adverse impacts.

I have considered both the beneficial and adverse impacts associated with the selected alternative as presented in the EA and this Decision Notice. The selected alternative will provide recreational benefits to users of the WRNF and will improve recreation opportunities on NFS lands. Any adverse impacts to recreation, scenery, wildlife, vegetation, soil resources, or watersheds are thoroughly documented in Chapter 3 of the EA and are determined to be non-significant. Other issues and resources were not included in detailed analysis in the EA due to a lack of anticipated impacts, or because the resource was thoroughly analyzed through previous analyses and the conditions had not changed. My finding of no significant environmental effects is not biased by beneficial effects of the action.

2. Consideration of the effects on public health and safety.

Although there are inherent risks associated with lift-served alpine skiing, the selected alternative does not significantly affect public health or safety.

3. Consideration of the unique characteristics of the geographic area.

Cultural resources were initially to be included for detailed analysis due to the possibility that ground disturbance related to construction of the proposed ski trail enhancements and lift replacement/realignment could impact archeological sites. However, a search of previous archaeological inventories and an investigation of new archaeological sites determined that no cultural resources exist within the project area.

On NFS lands, Alternative 2 would directly impact approximately 50 acres of lynx habitat. The project will result in a loss of lynx winter foraging habitat and may affect, but is not likely to adversely affect the Canada lynx. It is expected that this amount of habitat loss will not preclude lynx movement and foraging capability across the ski area, nor across the Lynx Analysis Unit. The selected alternative is consistent with all applicable lynx-related provisions of the Southern Rockies Lynx Management Direction and the associated FEIS/ROD, as well as with Section 7(d) of the Endangered Species Act.

The selected alternative would result in approximately 0.15 acre of type-conversion impacts to wetlands due to construction of the *Elk Camp Lower Bypass* and *Level 3* trails and approximately 170 square feet of temporary wetland impacts due to the installation of *Green Cabin* snowmaking infrastructure. Impacts to wetlands from ground vehicles, tree cutting in glades, and timber removal will be avoided and minimized through PDC.

The Snowmass SUP area borders the Maroon Bells-Snowmass Wilderness, but it was determined that no significant impacts to congressionally-designated wilderness areas would occur. No other unique geographic areas, park lands, prime farmlands, or wild and scenic rivers would be affected by the selected alternative.

4. Consideration of the degree to which the effects on the quality of the human environment are likely to be considered controversial.

The term “controversial” in this context refers to cases where substantial scientific dispute exists as to the size, nature, or effects of a major federal action on some human environmental factor rather than to public opposition of a proposed action or alternative.

No scientific dispute exists regarding the selected alternative or the analysis contained in the EA. Based on the fact that the Forest Service has analyzed and approved numerous projects of this type, the effects of this project are not considered to be controversial, nor is there scientific dispute about these effects.

5. Consideration of the degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.

This project is common at ski areas that operate on NFS lands. The analysis shows the effects are not uncertain, and do not involve unique or unknown risks. Therefore, based on the Forest Service's experience with implementing these types of activities, as well as the requirement to implement PDC to minimize effects, I have determined that there will not be significant effects on the human environment.

6. Consideration of the degree to which this action may establish a precedent for future actions with significant effects or that it represents a decision in principle about future considerations.

I determined that this decision does not establish precedence for future actions with significant risks to the environment. The selected alternative is consistent with Forest-wide and Management Area 8.25 direction, as well as the Snowmass SUP. Furthermore, the approved projects and activities are common at a developed, four-season resort such as Snowmass.

7. Consideration of the action in relation to other actions with individually insignificant but cumulatively significant impacts.

The Cumulative Effects analyses presented for each resource throughout Chapter 3 in the EA discloses past, present, and reasonably foreseeable future actions with potential to lead to effects which are cumulative in nature. Due to avoidance, project-specific PDC, and the implementation of BMPs, this analysis does not identify any cumulatively significant impacts that are anticipated to result from implementation of the selected alternative.

8. Consideration of the degree to which the action may affect listed or eligible historic places.

As indicated on page 3-3 of the EA, no eligible sites or findings are recorded within the project area; therefore, no effects to eligible heritage and cultural resources are anticipated to occur as a result of implementation of the selected alternative. Additionally, as stated in the PDC (**Appendix A**), if undocumented historic and/or prehistoric properties are discovered during ground disturbing or planning activities associated with construction, they will be treated as specified in 36 CFR 800.11 concerning Properties Discovered During Implementation of an Undertaking.

9. Consideration of the degree to which the action may adversely affect an endangered or threatened species or its critical habitat.

There would be no effect to any threatened, endangered, or proposed species, with one exception. For Canada lynx, the determination is "may affect, not likely to adversely affect."

On NFS land, the selected alternative would result in the permanent loss of approximately 50.7 acres of lynx habitat, including 24.5 acres of denning habitat, 8.3 acres of winter forage habitat, and 17.9 acres of

other habitat. This equates to approximately 0.14 percent of the Snowmass Lynx Analysis Unit (LAU) being converted to unsuitable habitat. This amount of habitat loss will not preclude lynx movement and foraging capability across the ski area, nor across the LAU. The selected alternative is consistent with all applicable lynx-related provisions of the Southern Rockies Lynx Management Direction and the associated FEIS/ROD, as well as with Section 7(d) of the Endangered Species Act.

10. Consideration of whether the action violated federal, state, or local laws or requirements imposed for the protection of the environment.

I have reviewed in the EA, the Biological Assessment/Biological Evaluation/Management Indicator Species reports, and the project file and have determined that no federal, state, or local laws, regulations, or requirements for protection of the environment will be violated with implementation of the selected alternative.

CONSISTENCY WITH OTHER LAWS AND REGULATIONS

This decision is consistent with the 2002 WRNF Forest Plan as required by the National Forest Management Act and all other laws, regulations, and policies that govern Forest Service actions. The project was designed to conform to the Forest Plan and all other laws, regulations, and policies. Site-specific PDC (**Appendix A**) and Forest Plan standards and guidelines will be applied, as appropriate, to meet Forest Plan goals and desired conditions.

IMPLEMENTATION DATE

No objections were filed during the objection process pursuant to 36 CFR 218. This decision may be implemented immediately upon signing of this Decision Notice.

CONTACT

For additional information concerning this decision or the Forest Service objection process, contact:

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Scott G. Fitzwilliams
Forest Supervisor
White River National Forest Supervisor

April 21, 2015
Date

ASPEN SNOWMASS

Snowmass Ski Trail Enhancements and High Alpine Lift Replacement Environmental Assessment

Figure 1: Selected Alternative

Legend

Existing:

- Lifts
- SUP Boundary
- Glades
- Snowmaking Coverage

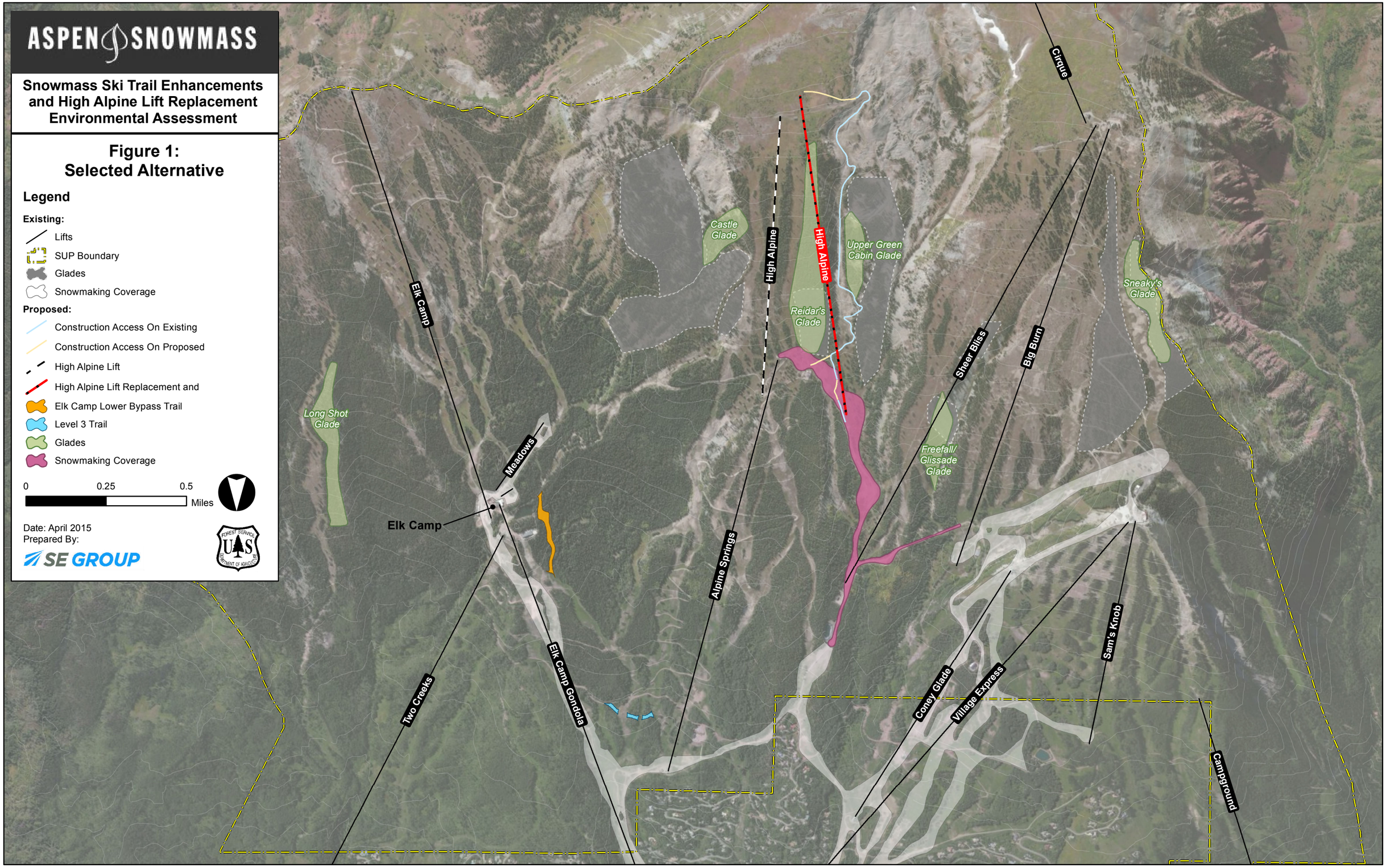
Proposed:

- Construction Access On Existing
- Construction Access On Proposed
- High Alpine Lift
- High Alpine Lift Replacement and
- Elk Camp Lower Bypass Trail
- Level 3 Trail
- Glades
- Snowmaking Coverage

0 0.25 0.5 Miles

Date: April 2015
Prepared By:

SE GROUP



APPENDIX A: PROJECT DESIGN CRITERIA AND BEST MANAGEMENT PRACTICES INCORPORATED INTO THE SELECTED ALTERNATIVE

Table A-1:
Project Design Criteria and Best Management Practices Incorporated into the Selected Alternative

GENERAL
Aspen Skiing Company (ASC) and the Town of Snowmass Village should coordinate construction efforts associated with this project so as to minimize impacts to summer guests to the area, particularly during high-use weekends.
WILDLIFE
Surveys for migratory birds and threatened, endangered, and sensitive species shall be conducted by qualified biologists prior to the construction season if construction activities are proposed to start prior to July 15.
Construction of approved projects should occur, to the extent practicable, outside the portion of the nesting period (March 1 to July 15) of migratory birds (non-Forest Service threatened, endangered, and sensitive species) when active nests are present. Construction may occur within that nesting period if surveys show no nests or altricial young present, or as otherwise approved by the Forest Service Responsible Official.
If flamulated or boreal owl nests are located within project areas, direct mortality of eggs and/or nestlings shall be avoided by conducting tree removal in nesting habitat outside of the May 21 to July 15 nesting period, or as otherwise approved by the Forest Service Responsible Official.
If olive-sided flycatcher nests are located within project areas, direct mortality of eggs and/or nestlings shall be avoided by conducting tree removal in nesting habitat outside of the June 1 to July 15 nesting period, or as otherwise approved by the Forest Service Responsible Official.
Surveys for active raptor nests and avian cavity nesting activity shall be conducted by qualified biologists prior to the construction season. To allow for successful nesting and young rearing, no project ground disturbing activities shall be allowed within a quarter-mile of active raptor nests until after July 31, or as otherwise approved by the Forest Service Responsible Official. To protect breeding adults and young raptors in avian cavity nests, a no-activity buffer of 1 acre around detected cavity trees shall be implemented until July 31, or as otherwise approved by the Forest Service Responsible Official.
To reduce the risk for human/wildlife conflicts in areas where food or trash could be present, all trash containers should be bear proof and any locations that have food products stored outside of a building should have bear proof food containers.
All construction activities should be confined to daylight hours, excluding emergencies.
Construction workers should not be allowed to bring dogs on site during construction.
No food/drink should be kept/stored in construction worker vehicles. All windows should be kept closed and doors locked on all vehicles to prevent bear entry.
Reduce sediment sources on existing and proposed trails and stream crossings to prevent impact to aquatic species.

Table A-1:
Project Design Criteria and Best Management Practices Incorporated into the Selected Alternative

CULTURAL AND HERITAGE RESOURCES
If undocumented historic and/or prehistoric properties are located during ground disturbing activities or planning activities associated with approved construction activities, all construction in the immediate vicinity would cease and they would be treated as specified in 36 CFR §800.11 concerning Properties Discovered During Implementation of an Undertaking.
NOXIOUS WEEDS
Pretreatment of existing infestations with approved herbicides within the project area should be conducted prior to project implementation. Herbicide choices and application rates for treatment are available from the District/Forest Weed Program Manager.
Ensure that prior to moving on to NFS lands all off-road equipment is free of soil, seeds, vegetative matter, or other debris that could contain or hold noxious weed seeds. "Off-road equipment" includes all construction machinery or off highway vehicles, except for trucks, service vehicles, water trucks, pickup trucks, cars, and similar vehicles. Equipment will be inspected prior to entering the Forest to see that it is free of debris.
All disturbed ground will be revegetated with native plant species. Utilize seed mix approved by the Forest Botanist and certified to be free of weed species. Seed mixes that incorporate native plant species similar to those within the project area are desirable. Any mulch used in revegetation efforts must be certified to be free of weed species. Use of wood and other non-straw fibers (i.e., coir, jute, or coconut) mulch and erosion control materials would help meet this objective.
Snowmass will employ a qualified specialist to monitor the project area for three years after completion for presence of invasive plants and successful establishment of desirable vegetation. The qualified specialist will complete an annual report to be submitted to the Forest Service by November 1 for each of the three years of required monitoring. Invasive plants should be retreated, as needed.
VEGETATION
Avoid trampling of native plant communities through designation of formal paths in heavy use areas, and other appropriate means.
Adequately mark leave trees and trail clearing limits to avoid mistakes in clearing limits during construction.
Areas cleared of vegetation alongside trails should be fully reclaimed after construction, where possible.
Implement Forest Service approved revegetation guidelines to all disturbed sites.
Effective ground cover (mulch) upon completion of ground disturbing activities would meet minimum level of the pre-treatment habitat type.
Efforts should be made to retain or transplant seedlings and saplings to other areas to maintain vegetation cover (with regards to lodgepole pine mortality).
Any Engelmann spruce that is felled must be either removed from the area or treated within one year after felling to prevent the buildup of spruce bark beetle. Treatments can include burning, burying or peeling the bark off felled Engelmann spruce.
Consider the health and windthrow potential of residual trees as the major selection factors, when possible, during the selection of trees for removal.

Table A-1:
Project Design Criteria and Best Management Practices Incorporated into the Selected Alternative

SCENIC RESOURCES
Facility and structure design, scale, color of materials, location, and orientation will be incorporated into proposed buildings and structures to meet or exceed the scenic integrity objective for this project area and the Built Environment Image Guide (BEIG) guidelines.
Facilities or structures including buildings, lift terminals and chairs need to meet reflectivity guidelines. This includes any reflective surfaces (metal, glass, plastics, or other materials with smooth surfaces), that do not blend with the natural environment. They should be covered, painted, stained, chemically treated, etched, sandblasted, corrugated, or otherwise treated to meet the solar reflectivity standards. The specific requirements for reflectivity are as follows: Facilities and structures with exteriors consisting of galvanized metal or other reflective surfaces will be treated or painted dark non-reflective colors that blend with the forest background to meet an average neutral value of 4.5 or less as measured on the Munsell neutral scale. The colors should be muted, subdued colors because they blend well with the natural color scheme. The Forest Service Handbook No. 617, "National Forest Landscape Management for Ski Areas, Volume 2, Chapter 7, refers recommended colors for ski areas on page 37 of that handbook. The colors are darker colors; greens, browns, navy blue, grays and black. Building designs will be submitted to the Forest Service for review and approval through the White River Design Process.
Follow FSM guidelines (Section 2380) and BEIG guidelines: • The scenic character will be protected through appropriate siting of buildings and the use of low-impact materials and colors (e.g., indigenous construction materials, such as stone and wood, as well as low-reflective glass and roofing materials). • Remain in context with the landscape (i.e., rustic, craftsman, and country lodge styles). • Architecture, materials, and colors should follow the Forest Service's BEIG.
Avoid straight edges where removing trees. The edges of lift lines, trails and structures, where the vegetation is removed, need to use a variable density cutting (feathering) technique applied to create a more natural edge that blends into the existing vegetative. Edges should be non-linear, and changes in tree heights along the edges of openings should be gradual rather than abrupt. Soften hard edges by selective removal of trees of different ages and heights to produce irregular corridor edges where possible.
Stumps should be cut as low as possible to the ground to avoid safety hazard and to meet scenery objectives.
Re-grade to restore a natural terrain appearance. Where there is disturbed ground for new structures include new buildings, lifts, and associated terminals, towers and foundation placements, road realignments, and water storage ponds and structures including culverts and bridges. Put any excess material back to the area with grading to avoid stockpile of material and maintain a natural appearance at transitions. Any site grading should blend disturbance into the existing topography to achieve a natural appearance and minimize cuts and fills at the transition with proposed grading and existing terrain.
Vegetation should be retained where possible to screen facilities from key viewpoints.
Vegetation should be retained to provide for a variety of species and size classes in order to perpetuate forest cover and provide a more natural appearance.
Utilities must be buried as per Forest Plan Standard.
All disturbed areas shall be revegetated after the site has been satisfactorily prepared. Seeding should be repeated until satisfactory revegetation is accomplished. Reseed with a native seed mixture using a variety of native seed grasses, wildflowers and forbs. Any seed mixes should be approved by the Forest Botanist.
All facilities including trails and signs must meet Forest Service Accessibility Guidelines. Forest Service Outdoor Recreation Accessibility Guidelines: http://www.fs.fed.us/recreation/programs/accessibilty/

Table A-1:
Project Design Criteria and Best Management Practices Incorporated into the Selected Alternative

GEOLOGY AND SOILS
During construction, maintenance and operations, stockpile mineral topsoil (A horizon) and organic soil matter (O horizon, 'duff' layer) to the extent possible.
Prior to construction, soil surveys will be completed within the disturbance area to ensure no net loss of soil organic matter.
Prior to construction, a detailed site erosion control plan will be prepared. This plan shall include the following components: • Silt fences, straw bales, straw wattles, and other standard erosion control BMPs shall be employed to contain sediment onsite. • Jute-netting or appropriate erosion-control matting on steep fill slopes (i.e., land with a slope angle of 35% or greater) will be utilized to protect soils and enhance conditions for vegetation re-establishment. Biodegradable netting (erosion control blankets and matting) should be used; netting should be free of persistent plastic/polypropylene materials. • Promptly revegetate disturbed areas. Seed mixtures and mulches will be free of noxious weeds. To prevent soil erosion, non-persistent, non-native perennials or sterile perennials may be used while native perennials become established. The Forest Service must approve the seed mixtures prior to implementation, unless previously approved seed mixes are employed.
Reclaim disturbed areas promptly when use ends to prevent resource damage and invasion of noxious weeds. Ensure proper drainage, rip compacted areas, and apply a Forest Service-approved seed mix and organic soil amendments to facilitate revegetation.
Use existing roads unless other options will produce less long-term sediment. Reconstruct for long-term soil and drainage stability.
Vegetative buffers will be maintained adjacent to intermittent or perennial drainages and wetlands, to the extent possible. Where avoidance of the vegetative buffer is not possible, disturbance will be minimized.
In all areas where grading or soil disturbance will occur, a reassessment of the quantity (depths) of soil A and/or organic ground cover would be made to ensure no net loss of this material.
Return slash and native organic litter to site, apply imported soil organic matter, and use soil fertility to restore site organic matter and nutrients.
Areas determined to have been compacted by construction activities may require mechanical subsoiling or scarification to the compacted depth to reduce bulk density and restore porosity.
When logging over the snow, conditions should allow for 1 foot of packed snow to be continuous (i.e., not patchy) and competent enough so that wheeled or tracked vehicles do not break through. When logging over frozen ground, a minimum of 3 inches of continuous frozen ground should be present.
Ground cover, as a combination of revegetation, organic amendments and mulch applications, will restore depths of soil A and/or organic ground cover.
To mitigate the loss of soil organic matter, compaction, and the associated increases in overland flow and sediment production from new ground disturbance sites, ASC will prepare a rehabilitation plan for Forest Service approval that accomplishes the following tasks: • Identification of soil mitigation sites on National Forest System lands that, when combined, are equal to or greater than the total ground disturbance footprint (e.g., road construction, trail construction, ski lift maze grading, and other ground disturbances) of the Proposed Action. • Provision of GIS shapefiles of the proposed mitigation sites that the Forest Service will compare against the bare ground digitization for Snowmass. • Application of compost or a Forest Service-approved alternative soil organic amendment to mitigation sites to increase water holding capacity and increase soil productivity of the mitigation sites. Soil amendments, erosion control materials, and seed mixes will require final approval from the Forest Service before purchasing.

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• Attention to any rills or gullies in mitigation sites through a combination of earthwork, erosion control netting and wattles, and soil amendment as described above. • Revegetation of mitigation sites with a seed mix approved by the Forest Service. The rehabilitation plan is to be submitted as part of the Summer Construction Plan in the same year project implementation is expected, and rehabilitation work is to be implemented concurrent with other ground-disturbing activities.
Prior to approved construction activities on NFS lands, ASC will prepare the following plans for Forest Service approval: • Grading • Erosion control • Pre-construction erosion control/drainage management plans • Post-construction revegetation and rehabilitation plans
Prior to implementation of the *Elk Camp Lower Bypass* trail, final geotechnical and grading specifications must be provided by a licensed professional engineer to the WRNF for review and approval by the Forest Service soils scientist and/or engineer.
Do not encroach fills or introduce soil into streams, swales, lakes, or wetlands. Install sediment waddles, sediment fencing, retention basins, or other applications before ground-disturbing activities begin. Favor applications that maintain functionality without maintenance, such as sediment retaining wattles. Service sediment retention applications before leaving the site and remove non-natural and non-biodegradable materials. Favor applications that use natural or biodegradable materials that can be left on-site.
Biomass management strategies (chipping/mastication) should adhere to the following protocol: • Based on literature review and the best available science, wood chip depth shall not exceed a maximum depth of 3 inches (7.5 cm) and should be applied at a relatively uniform thickness. Rake by hand as necessary to achieve uniform application. • Incorporate needles and/or leaves into chipped biomass to balance nutrient content of wood chips and to mimic the carbon to nitrogen (C:N) ratio of the native forest floor. Ideally, the C:N of applied biomass material should be less than 30:1. • Avoid operations with chipping/mastication equipment during periods of excess soil moisture. Use broad, sweeping turns with equipment, as practicable, to avoid rutting and displacement of soil. • Monitor for invasive weeds following operations with chipping/mastication equipment, particularly Canada thistle (Cirsium avense).
WATERSHED AND WETLANDS
Prior to initiating construction of the proposed snowmaking infrastructure, ASC will commission an engineering evaluation of the Sheer Bliss Pond by a professional engineer licensed in the state of Colorado. The purpose will be to determine the competency of the impoundment and associated infrastructure to handle the proposed use safely and in a manner that prevents future erosion and mass movements. The evaluation will include but not be limited to review of the original design, as-built surveys, the proposed operations, current site conditions and the condition of the embankment, inlet and outlet works. The report should contain recommendations, as needed, for any repairs, maintenance or upgrades to the infrastructure as well as plans for remedial site work to address existing erosion near the overflow outlet.
For grading projects greater than 1 acre, ensure that grading and erosion control plans meet the basic requirements for stormwater permitting through the State of Colorado Stormwater Management Program. Portray nearby wetlands and streams on grading plans. Also, show any BMPs or erosion control measures that would be used to protect streams and wetlands.

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For projects that involve grading, define grading limits on the ground before construction by placing wattles, sediment fence, construction fence, or other physical barrier along the perimeter of the area to be graded. Ensure that all grading is confined within the specified grading limits.
For ground-disturbing activities near perennial and intermittent streams, and ephemeral draws, minimize Connected Disturbed Area by ensuring that graded areas, roads, road ditches, and other disturbed areas drain to undisturbed soils rather than directly to streams and ephemeral draws. Manipulate drainage from disturbed areas as necessary using natural topography, rolling dips, waterbars, ditch-relief culverts, etc., to disconnect disturbed areas from streams.
For the lower terminal of the High Alpine lift, which would be located within the WIZ and adjacent to a wetland, construct a retaining wall on the west side of the lift terminal to minimize the footprint of the development within the WIZ and to protect the wetland from unintended disturbance. Grade the lift terminal site to drain away from the stream to prevent direct discharge of sediment from the disturbed area into the stream. Stockpile and re-use topsoil and/or amend soil as needed to maintain pre-disturbance levels of soil organic matter within the WIZ and to promote successful revegetation.
For the installation of snowmaking pipelines within the WIZ, including along the Spring Pitch trail, minimize the disturbance width, install sediment wattles to protect perennial and intermittent streams and stockpile trench spoils on the opposite side of the trench from the stream. Rehabilitate disturbance within the WIZ using soil amendments and biodegradable erosion control fabric to ensure successful revegetation.
Tree removal within the WIZ (Castle Glade, *Level 3* trail, Freefall/Glissade Glade): Fell trees into the inter-trail islands to improve Large Woody Debris density; however, fell trees in a way that protects vegetation in the WIZ from damage.
For logging operations, retain live and dead trees within 100 feet of perennial and intermittent streams, except within designated stream crossings. Locate all landings and skid trails at least 100 feet away from perennial and intermittent streams. Do not skid logs on sustained slopes steeper than 40%. Obliterate skid trails after operations are complete by pulling slash on skid trails; building waterbars where needed; placing barriers within skid trails to prohibit mechanized and motorized use; and seeding skid trails with approved seed mix, where necessary, to establish vegetation. A detailed plan for logging practices and methods (including disposal methods, any temporary roads, log decking locations, etc.) will be established prior to implementation in the summer construction plan.
Keep heavy equipment out of streams, swales, and lakes, except to cross at designated points, build crossings, or do restoration work, or if protected by at least 1 foot of packed snow or 2 inches of frozen soil.
Size culverts to easily pass sediment and debris transported by the stream to be crossed. Do not use culverts less than 18" in diameter to cross any stream channel.
Add or remove rocks, wood, or other material in streams or lakes only if such actions maintains or improves stream health. Avoid altering the stream bed and banks and maintain the natural character of the stream.
Clearly mark all wetlands within the vicinity of any ground disturbing activities or tree felling and ensure that all equipment operators are aware of their presence. Keep ground vehicles out of wetlands unless protected by at least 1 foot of packed snow or 2 inches of frozen soil.
For the installation of snowmaking lines, protect wetlands by locating lines to avoid crossing wetlands, cross with above-ground pipelines, or prepare a wetlands mitigation plan and obtain a 404 permit if wetlands cannot be avoided.
Within areas proposed for glading, tree cutting within wetlands is prohibited. Prior to implementation of glading areas, wetlands should be delineated and flagged.
Do not impact the soil surface of delineated wetlands due to the removal/hauling/dragging of timber from glading areas.
Outslope low standard roads to shed water rather than concentrating water on the road surface or in ditches.
Do not install culverts or conduct ground-disturbing activities near streams during spring runoff, or during periods of heavy precipitation.
Do not locate roads, trails, or other disturbed areas on slopes that show signs of instability, such as slope failure, mass movement, or slumps.

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For projects that would increase road traffic, or require road use by heavy construction equipment, apply road surfacing near stream crossings as needed to harden the road surface and minimize sediment delivery to streams.
Do not encroach fills or introduce soil into streams, swales, lakes, or wetlands. Install sediment wattles, sediment fencing, retention basins, or other applications before ground-disturbing activities begin. Favor applications that maintain functionality without maintenance, such as sediment retaining wattles. Service sediment retention applications before leaving the site and remove non-natural and non-biodegradable materials. Favor applications that use natural or biodegradable materials that can be left on-site.
Keep all debris generated by project activities out of ditches, swales, and drainage channels.
Halt construction activities during periods of heavy precipitation or when soils are muddy and prone to rutting and compaction.
FISH AND AQUATIC SPECIES
Provide ecological conditions to sustain viable populations of native and desired non-native species and to achieve objectives for MIS.
Keep vehicles and equipment out of streams, lakes, and wetlands except to cross at designated points or where protected by 1 foot of snowpack or frozen soil. Build crossings and do restoration work, where necessary.
Maintain long-term ground cover, soil structure, water budgets, and flow patterns of wetlands to sustain their ecological function.
Manage stream flows under appropriate authorities to minimize damage to fish and wildlife habitat.