

SNOW KING MOUNTAIN RESORT ON-MOUNTAIN IMPROVEMENTS PROJECT EIS:

DRAFT ALTERNATIVE SUMMARY REPORT

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INTRODUCTION

This report summarizes the alternatives to be considered in the *Draft Environmental Impact Statement (DEIS): Snow King Mountain Resort On-mountain Improvements Project*. Alternatives were developed on the basis of scoping, input from community groups and government agencies, and internal, interdisciplinary review. This summary report is intended to brief interested parties prior to the release of the DEIS. With the release of this report, the Bridger-Teton National Forest is not currently seeking public comment. The formal 45 day comment period will begin with the release of the DEIS.

We reviewed all alternatives in accordance with Council on Environmental Quality regulations (40 CFR 1502.13 and 1502.14). Those that we determined would meet the purpose and need for action while reducing adverse environmental impacts will be addressed in detail in the DEIS. Those that did not meet these criteria will not be carried into in-depth analysis.

The four alternatives addressed in detail are addressed first, followed by alternatives considered but not carried into in-depth analysis. A list of design criteria developed to avoid or reduce adverse environmental effects concludes the report.

ALTERNATIVES ADDRESSED IN DETAIL

The following table summarizes the four alternatives analyzed in-depth in the DEIS in a comparative format, emphasizing differences among them rather than repeating similar elements. They include the no-action alternative required by the National Environmental Policy Act (NEPA) to provide a baseline for assessing environmental consequences. The figures following the table provide a visual reference for each action alternative and for glading/forest thinning and road/trail obliteration.

Table 1. Summary comparison of elements included in the four alternatives analyzed in depth.				
Proposed Improvement	<u>Alternative 1</u> No Action	<u>Alternative 2</u> Proposed Action (See Figure 1)	<u>Alternative 3</u> (See Figure 2)	<u>Alternative 4</u> (See Figure 3)
Permit Boundary Adjustment				
East Expansion	No	Yes, 67 acres.	Yes, same as Alt. 2.	Yes, same as Alts. 2 and 3.

West Expansion	No	Yes, 89 acres.	Yes, same as Alt. 2 except 1 acre less in west-side area due to shifting the southern boundary back to ridge	Yes, same as Alts. 2 and 3.
Terrain Development				
Summit Ski School/Teaching Center	No	Yes	Yes	Yes
New and Modified Ski Runs	No, existing developed terrain would remain, 135.6 acres.	Yes, 117.8 acres across ability levels. Includes runs 3–14 on the front side, 16–25 on the back side, Lift B and C terrain on the ridge, and modifications of existing Moose, Belly Roll, Upper Exhibition, and Bearcat runs. New total 253.4 acres.	Yes, same as Alt. 2.	Yes, same as Alts. 2 and 3 except runs 3 and 8–12 on the front side would be dropped and runs 4, 5, and 7 on the front side would be gladed rather than cleared to protect historic landscape. Runs 1, 2, and 15 would be added on the front side to offset the resulting loss in trail capacity in balance with the new gondola. Total new terrain 122.2 acres, bringing area total to 257.8 acres.
Grading of Existing Runs	No	Yes, grading to smooth terrain irregularities at six locations on the front side, totaling 5.5 acres.	Yes, same as Alt. 2.	Yes, same as Alt. 2.
Glading (See Figure 4)	No	Yes, about 35 acres.	Yes, same as Alt. 2.	Yes, same as Alts. 2 and 3 but with 4.1 more acres due to glading rather than clearing runs 4, 5, and 7. Total 40.1 acres.
Summit Access Road/Skiway				
Summit Gondola Access Road	No, existing access road would remain in place.	Yes	Yes	Yes

Lifts				
Replace Summit Lift	No, existing chairlift would remain in place.	Yes, bottom terminal in Phil Baux Park and top terminal near current location.	Yes, but bottom terminal shifted to current Cougar bottom terminal site, top terminal near current location.	Yes, same as Alt. 3.
Back-side Quad Lift	No	Yes	Yes	Yes
Teaching Center Conveyor Lifts	No	Yes	Yes	Yes
Back-side Surface Tow	No	Yes	Yes	Yes
Removal of Cougar Lift	No	No	Yes	Yes
Facilities				
Summit Building	No, existing summit structures would remain in place.	Yes	Yes	Yes
Removal of Panorama House	No	Yes	Yes	Yes
Removal of Observation Deck	No	Yes	Yes	Yes
Removal of Existing Summit Ski Patrol Shack	No	Yes	Yes	Yes
Ski Patrol Building at Top of Cougar Lift	No	Yes	No	No
Yurt Camp	No	Yes	Yes	Yes
Wedding Venue	No	Yes	Yes	Yes
Snow King Historical Interpretive Center	No	No	Yes	Yes
Night Skiing				
Expanded Night Skiing	No, existing coverage of 73.8 acres would remain, covering all existing runs below Slow Trail.	Yes, an additional 27.3 acres, covering Flying Squirrel, Moose, upper Elk, and summit terrain, bringing total to 101.1.	Yes, same as Alt. 2.	Yes, same as Alts. 2 and 3.
Snowmaking Coverage				

Additional Snowmaking	No, existing coverage would remain, approximately 90 acres, including all existing runs below Slow Trail and Elk run to the summit.	Yes, 147.1 acres covering all remaining existing runs, except the S Chutes, and all new runs developed or modified under this alternative, bringing total to 237.1 acres.	Yes, same as Alt. 2.	Yes, 135.7 acres, covering all runs developed or modified under this alternative except runs 1, 2, 4, 5, 7, and upper 15, bringing total to 225.7 acres.
Summer Activities				
Zip Line	No	Yes, paralleling Summit gondola, landing in Phil Baux Park.	Yes, except landing at Rafferty mid-station. Straight and three-segment options.	Yes, same as Alt. 3.
Mountain Bike Trails	No, existing trails would remain in place.	Yes, approximately 6.5 miles on front side with access from Summit gondola and a 110-acre mountain bike zone on back side, accessed from Summit gondola and Lift A.	Yes, same as Alt. 2, but without the black (expert) trail off the summit.	Yes, but moved to front side, with 4.4 miles accessed from Rafferty lift and no back-side mountain bike zone.
Hiking Trails	No, existing trails would remain in place.	Yes, improved 0.6-mile Stairway Trail and new 1.5-mile trail in the Bearcat Glades area.	Yes, same as Alt. 2 except new hiking trail realigned and shortened to 1.2 miles.	Yes, same as Alt. 3.
Forest Stand Thinning for Wildland/Urban Interface and Defensible Space (See Figure 4)	No	No	Yes, 178 acres (includes 6.2 acres that overlap proposed glading).	Yes, same as Alt. 3.
Obliteration of Existing Service Roads and User-created Trails (See Figure 5)	No	Yes, 1.1 miles of roads, including all but the top section of Elkhorn Trail and an unnamed service road and hiking trail on the lower front side, made unnecessary by the proposed summit access road/beginner skiway.	Yes, with an additional 0.9 miles of roads/trails, including Slow Trail and Fast Trail, made unnecessary by removal of Cougar lift.	Yes, same as Alt. 3.

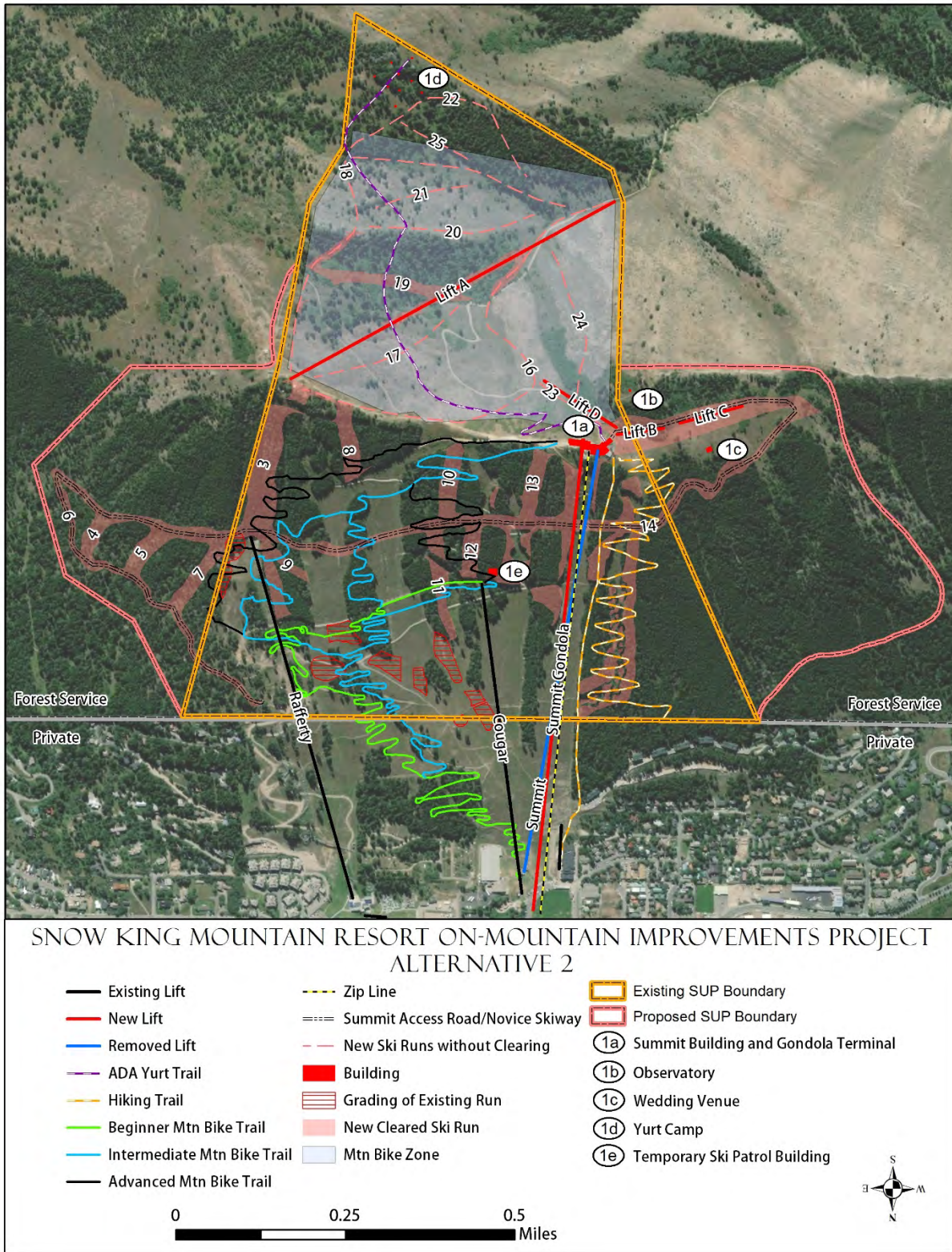


Figure 1. Alternative 2 – Proposed Action (Recreational Opportunity Emphasis)

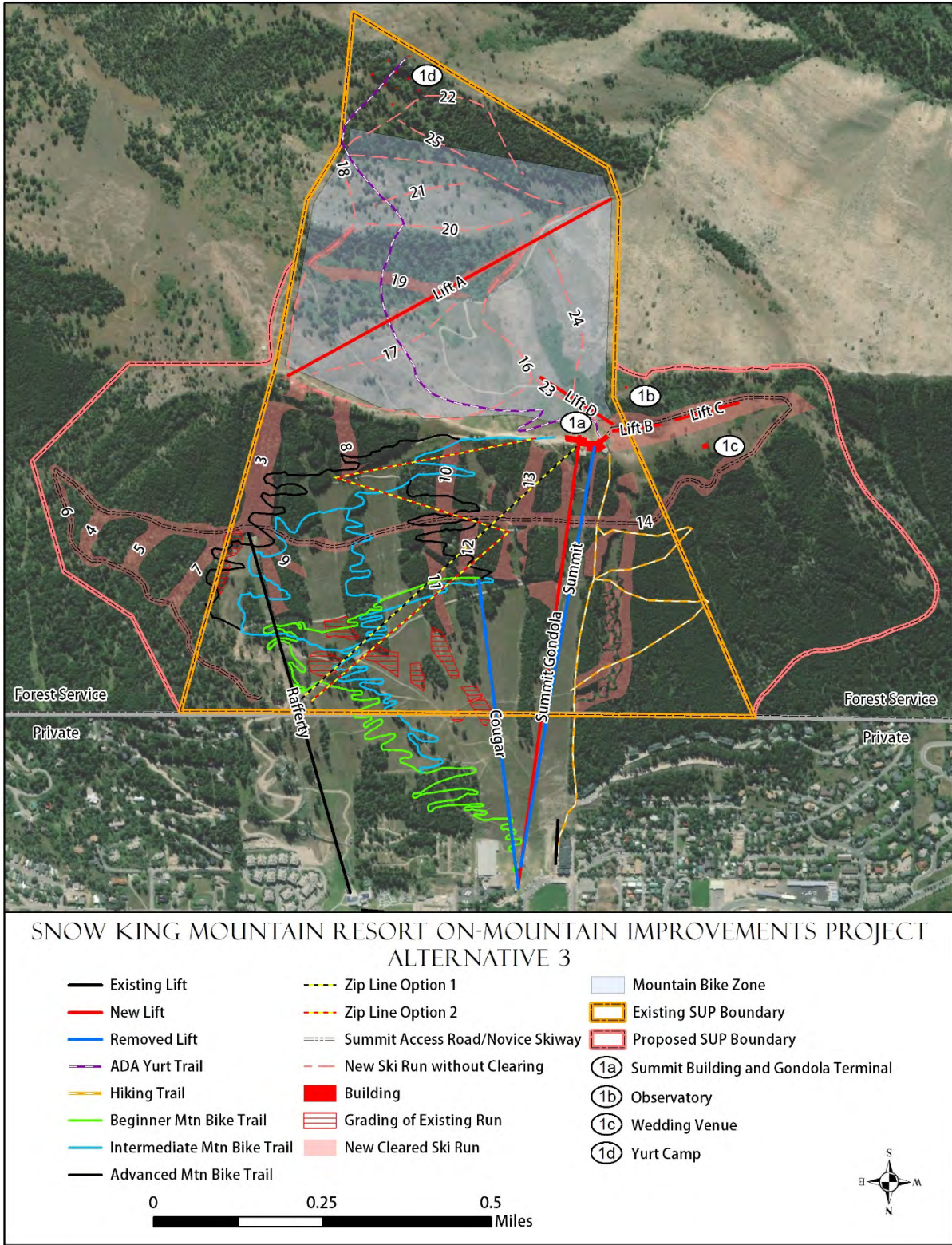


Figure 2. Alternative 3 – Balanced Recreational Opportunity and Resource Protection.

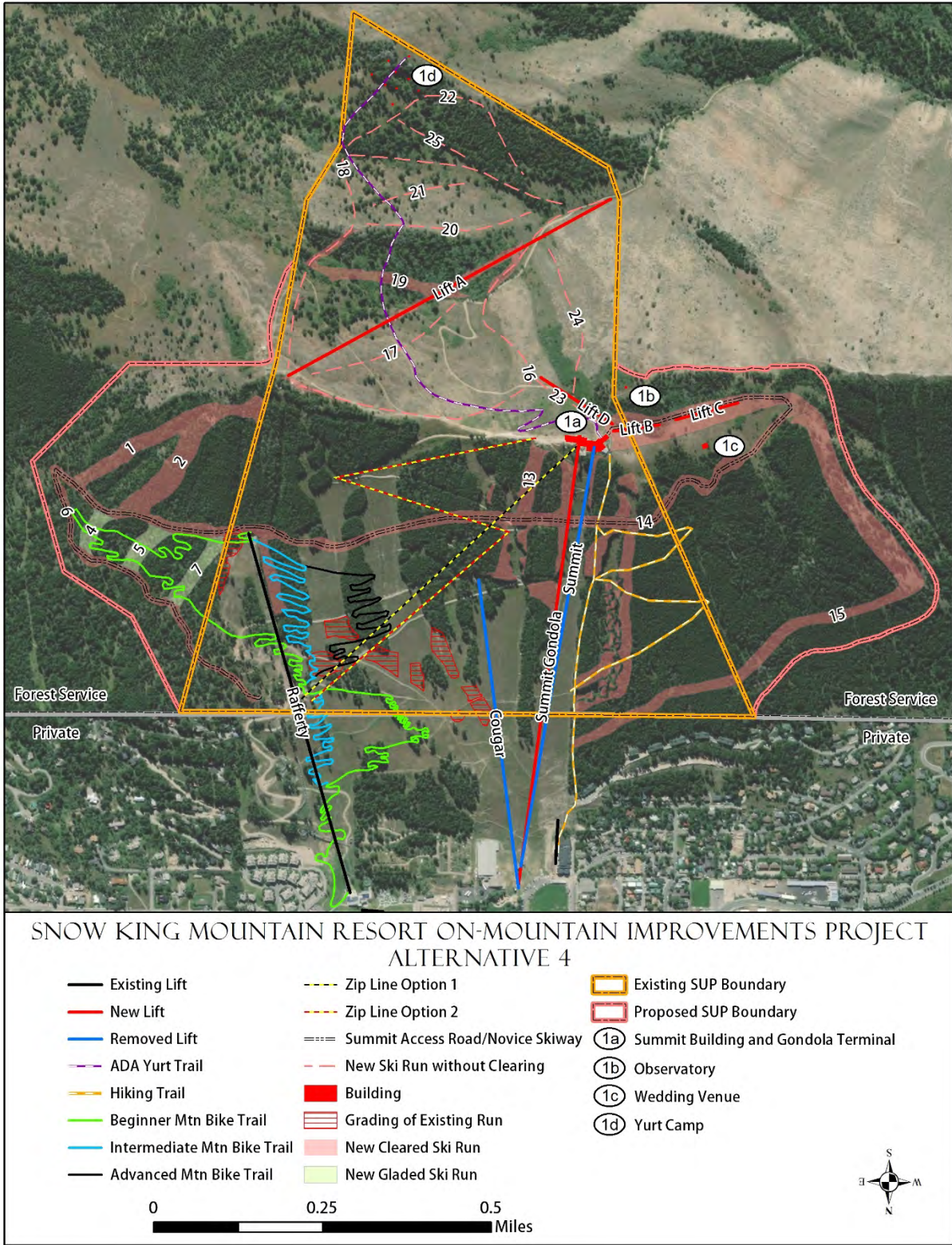


Figure 3. Alternative 4 – Resource Protection Emphasis.

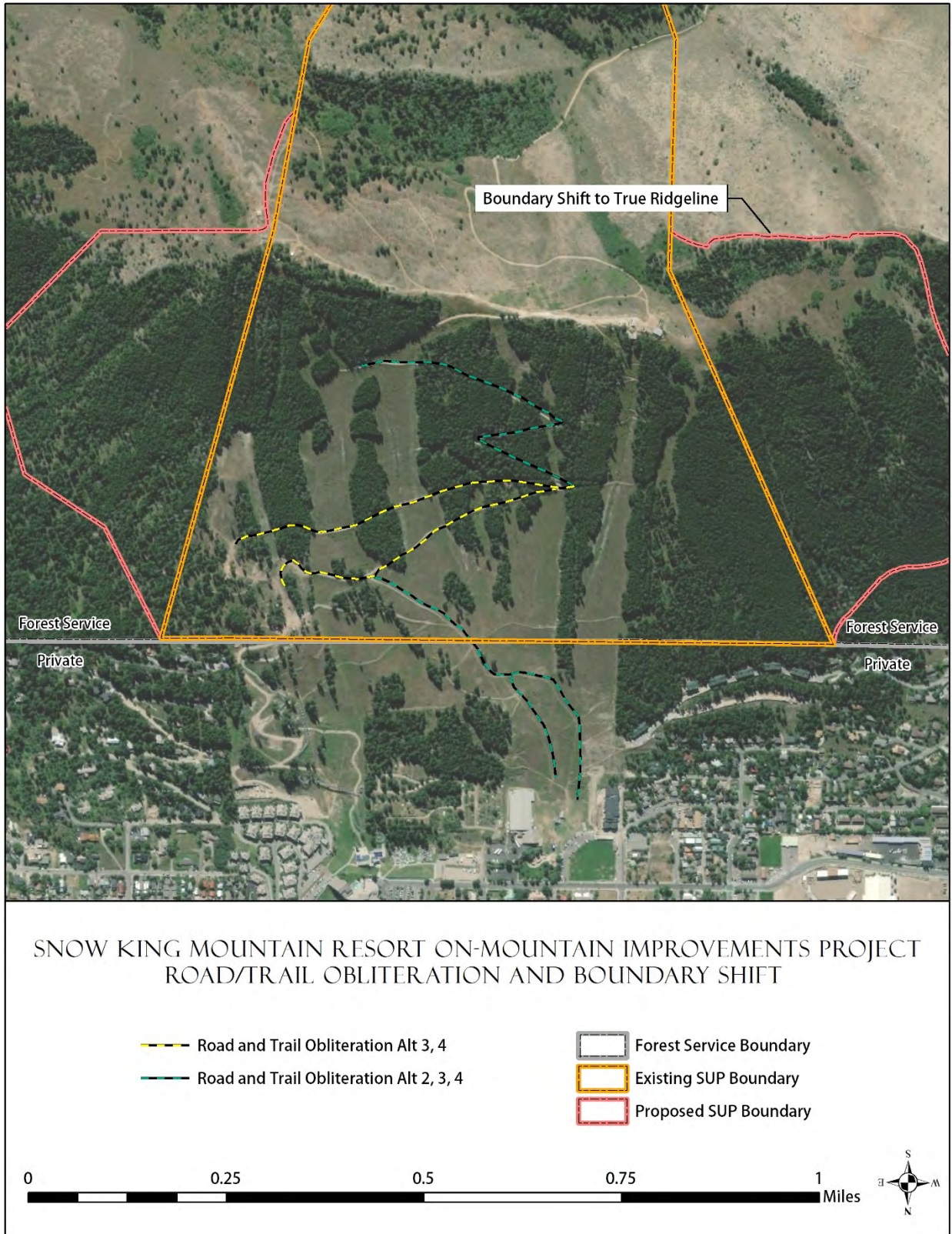


Figure 5. Road and trail obliteration.

DESIGN CRITERIA

Design criteria are measures to avoid or reduce adverse environmental effects and apply to alternatives 2, 3 and 4. Some are standard practice and identified prior to NEPA review. This analysis incorporates a number of design criteria developed on the basis of experience at Snow King and other ski areas. Reducing soil erosion and adverse effects on water quality, protecting wildlife habitat and other native vegetation, maintaining visual quality, ensuring appropriate access to facilities, and protecting buried heritage resources are the concerns addressed by the following design criteria. They are considered to be in place in the analysis of environmental consequences discussed in Chapter 3. Other design criteria may be identified through the analysis of environmental effects. These will be added to the list presented in the Draft EIS.

Erosion Control

1. Snow King ski area will prepare a Storm Water Pollution Prevention Plan (SWPPP) that will apply to all authorized elements. The SWPPP is a condition of Wyoming's Wyoming Pollutant Discharge Elimination System Permit and will include appropriate BMPs for erosion control, sediment control, site stabilization, operational controls, and provisions for maintenance and inspection.
2. The SWPPP will include appropriate BMPs from *National Best Management Practices for Water-Quality Management on National Forest System Lands. Volume 1: National Core BMP Technical Guide* (Forest Service 2012a), and *Ski Area BMPs (Best Management Practices) Guidelines for Planning, Erosion Control, and Reclamation* (Forest Service 2001). Pertinent watershed BMPs are discussed in section 3.4.

Vegetation Management

3. Soil disturbance will be minimized, and existing topsoil will be conserved for replacement.
4. Where possible, native vegetation will be retained.
5. In cleared and graded areas, mechanized equipment may be used to fell and remove trees. Disposal will be in accordance with applicable Forest Service permit requirements.
6. Slash created by tree removal will be disposed of either through utilization, burning, chipping, mastication, lopping and scattering, or removal from the site within a specified timeframe. Disposal will be in accordance with applicable Forest Service and state permit requirements.
7. Snow King will follow Forest Service policy (FSM 2070) and use genetically appropriate native materials for any rehabilitation and restoration. A qualified Forest Service botanist will be involved in development, review, and/or approval of plant materials selected for use in site rehabilitation and restoration.
8. All construction equipment and vehicles used will be cleaned and certified free of noxious weeds and their seeds prior to entrance onto the Bridger-Teton. This restriction will include equipment and vehicles intended for both on- and off-road use, whether they are owned, leased, or borrowed by either contractors or subcontractors.
9. Any fill material proposed for the project, including any imported topsoil, will come from an on-site or certified weed-free location.
10. Any straw bales, chips, or other imported mulch used in conjunction with construction or rehabilitation activities will come from a certified weed-free source.
11. Prior to conducting thinning or glading operations, Snow King will consult with the Forest Service to obtain a prescription in order to address forest health issues such as disease or insect infestation.

Wildlife Protection

12. Do not clear, cut, burn, drive on, or park equipment on vegetation that may harbor nesting birds during the breeding season. If this is not possible, survey for nesting birds no more than 10 days prior to commencing work. If no nests are found, project activities may proceed. If nests are found, contact the Forest Service permit administrator.

Scenic Integrity

13. Permanent structures will be designed and built in compliance with the Forest Service's *Built Environment Image Guide* (<https://www.fs.fed.us/recreation/programs/beig/>). Ensuring that architectural style, building materials, size, and color are consistent and meet the adopted scenery objectives. Compliance will be confirmed through Forest Service engineering review prior to construction.
14. The edges of cleared ski runs will be feathered to appear more like natural openings in forest cover, flowing with the topography and blending with the natural vegetation.
15. Lift towers will be acid dipped to reduce reflectivity and visual impact.
16. New construction will comply with pertinent stipulations of Teton County or Town of Jackson, as appropriate, land development regulations or other regulations regarding dark sky maintenance and scenic values.
17. All roads and trails identified for obliteration that lie below the upper leg of the proposed summit access road/skiway will be obliterated within 1 year following completion of the proposed summit access road/skiway.
18. The first segment of Elkhorn Trail above the upper leg of the proposed summit access road/skiway will be obliterated within 1 year following completion of Lift D.

Accessibility

19. All buildings will be designed and constructed in accordance with the *Accessibility Guidebook for Ski Areas Operating on Public Lands – 2012 Update* (Forest Service 2012b). Compliance will be confirmed through Forest Service engineering review prior to construction.

Undiscovered Heritage Resources

20. If any previously unidentified prehistoric or historic cultural resources are identified or encountered at any time during construction, efforts shall be made to protect the resource(s) until the Forest Service permit administrator is notified and the Forest Service fulfills its consultation requirements, including consultation with the appropriate Tribal representatives.
21. If unmarked human remains are encountered at any time during construction, all work in the vicinity of the find shall cease, the County Sheriff shall be notified, the remains shall be protected in place, and the Forest Service permit administrator shall be notified immediately to begin proper notification and consultation procedures with the Wyoming State Historic Preservation Office, Native American Tribes, and other local officials as needed (e.g., County Coroner) to determine to what time period and ethnic group the skeletal material may be ascribed and the appropriate treatment.
22. If any previously unidentified Traditional Cultural Places or sacred sites are identified or encountered at any time during construction, efforts shall be made to protect the resource until the Forest Service permit administrator is notified and the Forest Service fulfills its consultation requirements, including consultation with the appropriate Tribal representatives.

ALTERNATIVES CONSIDERED BUT NOT ANALYZED IN DEPTH

The following alternatives were suggested in scoping comments but will not be carried into in-depth analysis for the reasons noted. It is important to note that, in accordance with our NEPA regulations (FSH 1909.15, sec. 14.4), these alternatives are part of the range of alternatives considered in this analysis.

No Boundary Adjustment or Limited Boundary Adjustment Alternatives

Numerous scoping commenters requested an alternative that precluded any boundary adjustment or alternatives that dropped the south or west adjustment. These included “net-zero” alternatives and detailed “balanced” and “wildlife” alternatives suggested by the Jackson Hole Conservation Alliance.

These alternatives were considered but not carried into in-depth analysis because of the fundamental purpose and need for the proposed action, which can be outlined as follows:

- The ski area needs high-quality beginner and intermediate terrain to remain viable;
- The only suitable location for developing sufficient terrain of this type is the summit and the back side of Snow King Mountain;
- The lift serving this terrain must be easily downloadable to get beginner skiers to and from the summit;
- Given the distance between this new terrain and base-area skier services, new service facilities are required on the summit;
- Construction and maintenance of those facilities requires an access road and an “easy way down” from the summit for beginner skiers in the event of a lift failure is a necessity. The access road and beginner skiway have similar design requirements and are logically collocated;
- The ski area has comprehensively identified and assessed options for the necessary access road/skiway, and the proposed alignment was identified as the only viable option; and finally,
- Industry wide, mountain resorts are developing summer recreation options in response to visitor expectations, climate change, and generation of sufficient operating income, and Snow King is no exception.

In terms of a no-adjustment or limited adjustment alternative, the east and west boundary adjustments are necessary to accommodate the access road/skiway, which would otherwise have to switchback continuously up the front side, within current permit boundaries, causing significant impacts in terms of soil disturbance, habitat fragmentation, skier safety, and visual quality. Beyond that, as a result of the continuous switchbacks it would not function well as either an access road or a beginner skiway.

The southern addition, which involves land already within Snow King’s special use permit boundary, is necessary to provide intermediate terrain – the next step up for beginners using the summit terrain. The main reason commenters cited for an alternative with no southern addition was concern over impacts on specialized wildlife habitat, particularly deer and elk winter and fawning/calving habitat and wildlife migration routes. However, initial investigations indicated that while specialized habitat does occur in the vicinity, the actual area proposed for development does not include any. The EIS does address potential impacts on specialized habitats in the area, but we concluded that was not an issue warranting a no-southern-expansion alternative.

In short, the suggested no-boundary-adjustment or limited-adjustment alternatives were not carried into in-depth analysis because they do not meet the purpose and need for action in terms of providing lower-level ski terrain and summit egress and, in the case of the southern addition, there is no alternative-driving issue.

Access Road Alternatives

No New Road

Several commenters suggested an alternative with no new road, generally in conjunction with improving the existing road and down-sizing the summit building. These alternatives were not carried into in-depth analysis because, in addition to being inconsistent with purpose and need as outlined above, the existing road does not meet the need for an “easy way down” from the summit or from the top of Rafferty lift and is too steep for construction traffic.

Use of Leek’s Canyon Road

Many commenters suggested using the existing Leek’s Canyon road, with improvements as necessary, to access the summit. This alternative was not carried into in-depth analysis because the Leek’s Canyon road does not meet the need for an “easy way down” from the summit to the base area and because it crosses private land not owned by Snow King and not under the jurisdiction of the USFS, so use could not be ensured.

Other Alignments

One commenter suggested extending Slow Trail up to Scott’s Ridge. This alternative was not carried into in-depth analysis. We considered this alternative, but due to the topography an alignment at less than 10 percent grade, required for a beginner skiway, could not be achieved.

Some commenters suggested an alignment within the current permit boundary, including options identified in past master plans. These options were not carried into in-depth analysis because, as noted above and in the scoping notice, we assessed such alternatives and concluded that alternative routes within the existing permit boundary did not provide appropriate grades for both construction access and a beginner skiway. Beyond that, they would generate the adverse environmental effects noted above.

One commenter asked for an alternative that included limiting uses of the access road/skiway and identification of avalanche control measures to be used where it crosses new terrain. This alternative was not carried into in-depth analysis because the proposed action already limits motorized vehicle use of the proposed access road/skiway to the purposes outlined in the scoping notice. The EIS does address avalanche hazard.

Some commenters suggested using Leek’s Canyon Road for construction and improving the existing front-side road as a skiway. This alternative was not carried into in-depth analysis because, as discussed above, the existing road does not meet the need for an “easy way down” from the summit or from the top of Rafferty lift.

Skiiing between Switchbacks

Commenters suggested authorizing the proposed summit access road/skiway but not allowing skiing between the switchbacks in the east and west boundary adjustment areas. This alternative was not carried into in-depth analysis because closing this terrain would create substantial boundary management issues and because the proposed runs in the eastern area would provide much of the needed lower intermediate ski terrain necessary to meet purpose and need.

Gondola Alternatives

Most of the gondola alternatives identified through scoping are addressed by the preferred alternative’s removal of the Cougar lift and relocation of the bottom gondola terminal to the current location of the Cougar lift bottom terminal. Other alternatives suggested were as follows.

One commenter suggested including a mid-station on the gondola to provide easy access to the lower slopes. This alternative was not carried into in-depth analysis because, given the steepness of the slope, the amount of earthmoving necessary to construct a mid-station would be prohibitive.

Some commenters suggested a high-speed quad, perhaps with covered chairs, rather than a gondola. This alternative was not carried into in-depth analysis because a high-speed quad would not accommodate non-skiing riders, diverse weather, and night use as well as a gondola, and these are important functions of the proposed lift.

Other commenters suggested a tram rather than a gondola. This alternative was not carried into in-depth analysis because no clear benefits were cited or are evident to us, and trams typically require longer wait times, have lower capacity, and cost more.

Lift A Alternatives

Commenters suggested a shorter T-bar lift, without snowmaking, used only when natural snow was sufficient, with existing roads providing a return route to the “Saddle.” This alternative was not carried into in-depth analysis because a T-bar would not accommodate mountain bikes, and it would not provide access to the desired beginner and intermediate terrain. The need for snowmaking is addressed in the description of the proposed action.

Commenters also suggested not building Lift A and allowing only human-powered activities on the back side. This alternative was not carried into in-depth analysis because it would not provide the lower-level ski terrain necessary to meet purpose and need.

Mountain Bike Trail Alternatives

Commenters suggested an alternative mountain bike trail system beginning at the Rafferty mid-station. This alternative was not carried into in-depth analysis because the mid-station area is already highly developed and heavily used due to the siting of the ropes course, alpine slide, and mountain coaster, and because we believe the resulting mountain bike trail system would be too short to be a viable attraction.

Zip Line Alternatives

Commenters suggested alternative zip line alignments, specifically adjacent to the proposed gondola on the east side, and adjacent to the Rafferty alignment. In negotiations with the Town of Jackson, Snow King agreed to avoid western base area entirely, precluding the alignment east of the gondola. The terrain traversed by the Rafferty alignment is not suitable for a single-span zip line due to topography. There would not be sufficient ground clearance along the middle of the alignment.

Beginner Area Alternatives

Some commenters suggested locating the beginner area in Rafferty pod or elsewhere on the lower front side rather than on the summit, particularly because of concerns about wind, other inclement weather, and snow accumulation at the summit. Examples include the Rafferty Area, the Turnpike run, or vacant land behind the Snow King Resort Hotel. These alternatives were not carried into in-depth analysis because the summit area offers more appropriate topography on the wide, gently sloped area west of the summit, a longer season with good snow conditions due to elevation, more warmth and sun exposure, and better separation from more advanced skiers than lower-elevation, front-side options.

Summit Building Alternatives

Some commenters suggested a smaller summit building, including an upgraded Panorama House. These alternatives were not carried into in-depth analysis because they are not consistent with the rationale for the

proposed facility as presented in the proposed action description, and because of the small size and deteriorated condition of the Panorama House.

Commenters also suggested that a park be provided at the summit building site, with picnic tables. This use would be consistent with proposed functions for the summit building and would not require additional infrastructure. As a result, this suggestion was not carried into in-depth analysis.

Planetarium Alternative

One commenter suggested an alternative planetarium site on East or West Gros Ventre Butte. This alternative was not carried into in-depth analysis because we did not believe that these locations would complement or be supported by proposed development on the summit of Snow King.

Wildlife Protection Alternatives

Obliteration of Leek's Canyon Road

Some commenters suggested decommissioning and obliterating the portion of Leek's Canyon Road that is on the National Forest to reduce the likelihood of skiers leaving the ski area and traveling down canyon, disturbing wintering wildlife and finding no legal egress at the bottom. This alternative was not carried into in-depth analysis because the road serves on-going uses, particularly providing access to an important communications site on the ridge. The site operator has a road easement across private and National Forest land.

Fencing Wildlife Closure Boundaries

Also to protect wintering wildlife, some commenters suggested installing permanent fences where the ski area permit is in close proximity to established wildlife closure areas. This alternative was not carried into in-depth analysis because hard fencing is not a normal Forest Service practice when there are alternative ways to control access. Permitted ski areas typically use rope lines, signage, and ski patrol to keep skiers away from closed areas, and we believe these measures will provide sufficient protection in this situation.

Lynx Alternative

The U.S. Fish and Wildlife Service spelled out an alternative based on reducing potential effects on Canada lynx:

Due to the potential impacts to lynx and lynx habitat as a result of implementation of the proposed recreation activities, we recommend the EIS include at least one alternative implementing the following the NRLMD human use guidelines for developed recreation: HU G1 (maintaining inter-trail islands), HU G2 (providing lynx nocturnal foraging opportunities), HU G3 (lynx movement and habitat effectiveness), and HU G10 (maintaining security habitat when expanding ski areas and trails). Adopting these guidelines would ensure the proposed activities are designed to minimize the fragmentation of lynx foraging and denning habitat. Reducing the number of new graded/cleared areas, ski runs, bike trails, hiking trails, and buildings within currently contiguous lynx foraging and denning habitats would also reduce the fragmentation of lynx habitat. Alternatively, these Project-related activities could be moved to areas that do not contain lynx habitat. In addition, we recommend the Forest minimize the footprint of new lighted, night ski areas, especially in or adjacent to blocks of contiguous lynx habitat to give lynx the opportunity to forage at night. By implementing these measures, the Forest will appreciably reduce the impacts to lynx, lynx denning and foraging habitat, as well as, designated lynx critical habitat within in the Project area.

The EIS and associated biological assessment address lynx impacts in accordance with established lynx management protocols, and Northern Rockies Lynx Management Direction (NRLMD) is addressed as

appropriate regardless of the alternative. We appreciate this information but do not believe that a lynx-specific alternative is necessary to incorporate it .

Terrain Park Expansion

Commenters suggested expanding the existing terrain park into the Rafferty and Old Man's Flats areas. This alternative was not carried into in-depth analysis because neither Snow King's proposal nor internal agency review indicated a need for such expansion, and the commenters did not provide any rationale for the suggestion.

Alternative Management

Some commenters suggested that the Town take over management of the resort and design their own, taxpayer-funded improvements. This alternative was not carried into in-depth analysis because Snow King operates on National Forest land, under Forest Service special use permit, issued to the current permittee. As a result, this alternative is outside the scope of this EIS.