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Department of
Agriculture

Forest
Service

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Environmental Assessment

Deer Creek Road Realignment and Riparian Restoration Project

**Ketchum Ranger District, Sawtooth National Forest
Blaine County, ID**

Township 2N, Range 16E, Section 12; and Range 17 E,
Sections 6 and 7 B.M.

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CHAPTER 1 - PURPOSE AND NEED FOR ACTION

Background

Deer Creek is a major drainage located on the southwest portion of the Ketchum Ranger District on the Sawtooth National Forest. It consists of narrow valley bottoms with perennial creeks that are surrounded on either side by steeper upland slopes. The area is identified as Management Prescription Category (MPC) 4.2 - *Roaded Recreation* in the Revised Sawtooth Forest Land and Resource Management Plan (Sawtooth Forest Plan, 2012) (Figure 1). Lands within this management prescription category primarily have uses emphasizing dispersed and developed recreation, including both motorized and non-motorized recreation opportunities. Multiple trailheads, numerous designated dispersed camp sites and an extensive road and trail network currently exist in the drainage.

The Deer Creek Watershed was identified as a forest-wide priority for wildlife habitat restoration in the 2012 Sawtooth Wildlife Conservation Strategy. As such, the Sawtooth National Forest (SNF) developed an integrated watershed restoration project intended to improve forest health, enhance wildlife and fish habitat, reduce the potential for uncharacteristic fire behavior near private lands and communities, and provide sustainable recreation opportunities in the Deer Creek area. An environmental assessment (EA) was completed and a decision notice was authorized on July 15, 2013.

Three weeks after the decision notice was authorized, the Beaver Creek Fire ignited and burned 93,132 acres of national forest lands; 69% of the Deer Creek drainage was burned in this fire. Severe rain events in September of 2013 triggered substantial debris flows in the burned area that resulted in major sedimentation release into the main Deer Creek floodplain, damming of the natural river channel, which forced water flows onto the roadway, and damage to recreational trails and facilities. These events created a large scale change of condition in the watershed, greatly affecting fish and wildlife habitat, stream channel integrity, existing road and recreation resources and public access within the drainage. The drainage was mostly closed to the public from 2013-2015. Access was restored to the public during the summer of 2015; however significant road integrity and water quality concerns remain.

Purpose and Need for Action

The Deer Creek Road travels within the narrow floodplain of Deer Creek throughout most of its length in the drainage. A particular section of road within the drainage has been historically problematic. Here, the road crosses Deer Creek three times in less than half a mile distance, constricting the natural flow of the channel and contributing to degraded water quality conditions (*Figure 1*). The natural braiding of the creek and heavy beaver activity along this section requires frequent road maintenance to prevent creek shifts and flooding water from damaging the road and inhibiting vehicle and public access to recreation opportunities further up the drainage. In 2013, substantial post-fire debris flows blocked the creek channel, forcing Deer Creek to reroute, washing-out a large section of the existing Deer Creek Road and damaging bridge infrastructure (*Photo 1*). These events once again highlighted the Forest's challenges with maintaining the Deer Creek Road in this current floodplain location.

Deer Creek Road Realignment Project

Ketchum Ranger District
Sawtooth National Forest



January 2016

 Project Area
 Floodplain Restoration

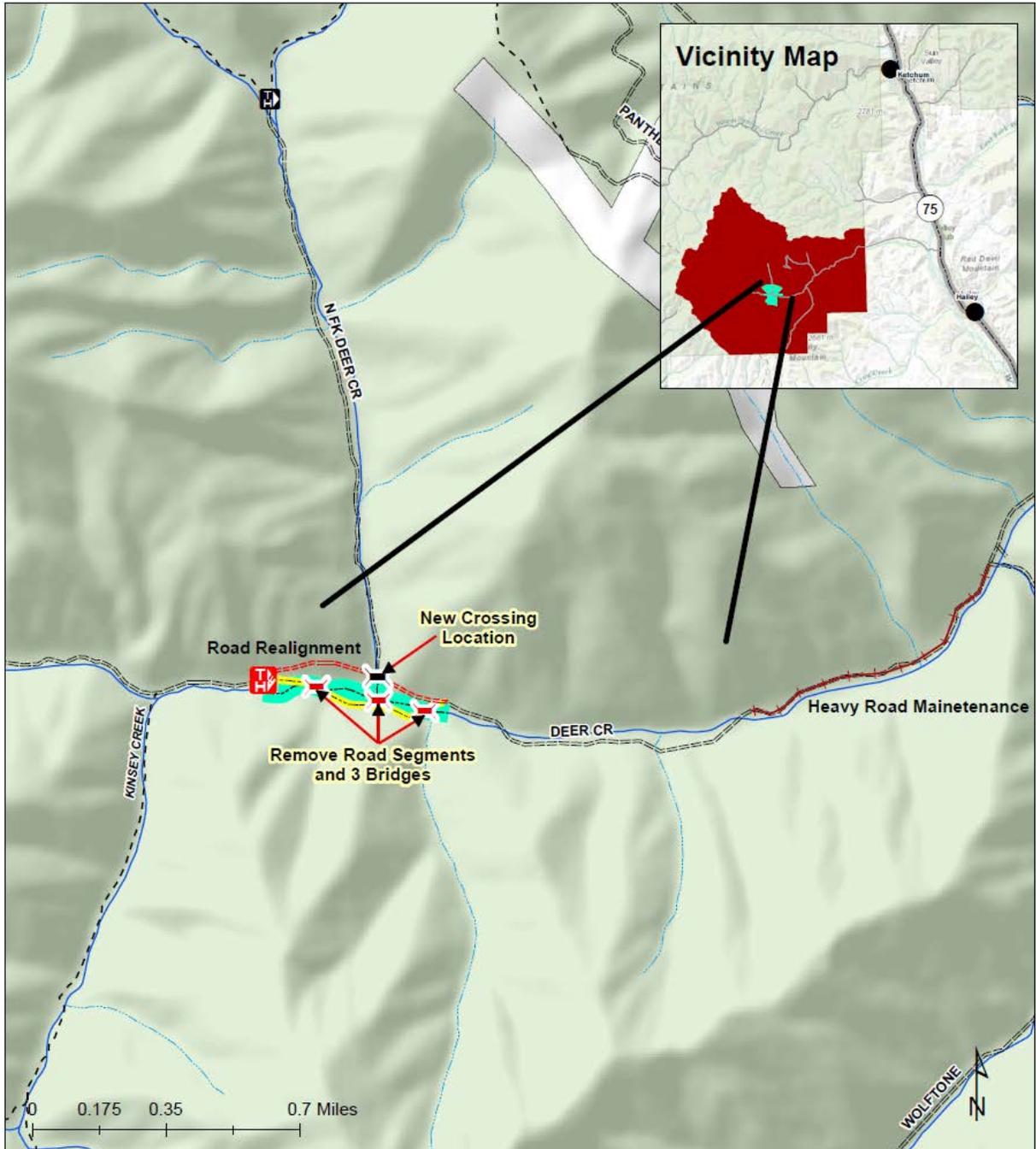


Figure 1. Deer Creek Road Realignment and Riparian Restoration Project Map.



Photo 1 – Section of the Deer Creek Road (FS 097) within the project area that was severely damaged when a large debris flow blocked the creek channel and realigned this portion of Deer Creek along the existing road alignment (Spring 2014, Ketchum RD, Sawtooth NF).

The purpose of the project is to:

- Restore floodplain and riparian function and condition
- Improve water quality and fisheries habitat
- Provide sustainable recreation and public access in the Deer Creek drainage
- Maintaining existing recreation opportunities in the Deer Creek Watershed, consistent with the Sawtooth Forest Plan direction (Recreation Opportunity Spectrum/MPC 4.2)

Proposal Development

This project was initiated in November 2015 based on the purpose and need described above. The District used an interdisciplinary (ID) approach that integrates physical, biological and other resource areas to identify management opportunities in the analysis area.

The project was first posted to the Sawtooth National Forest Schedule of Proposed Actions in November 2015 and a news release and initial letter describing the proposal was sent out on November 20, 2015. On January 29, 2016, a Notice of Proposed Action was sent to individuals and organizations, including State regulatory agencies, Tribes, 5B Recreation Coalition members, private land stakeholders and other interested parties. On February 3, 2016, a legal notice announcing the start of a 30-day public comment period was published in the Mountain Express Newspaper, Ketchum, ID.

The project proposal is consistent with forest-wide standards and guidelines, management area direction for the Big Wood River Management Area (MA 4), and for management prescription category 4.2 (Roaded Recreation).

Issues

The ID Team did not identify any key issues internally or from public comments that would lead to the development of substantive alternatives. Non-key issues that are further described in Chapter 3 and for which modification and project design features are defined are:

- Potential for cheatgrass and noxious weed spread
- Potential for short-term sedimentation effects to water quality
- Potential for degradation to the scenic environment

CHAPTER 2 – ACTION ALTERNATIVES

Alternative 1 - No Action

The No Action Alternative provides a baseline against which impacts of the various action alternatives can be measured and compared. Under this alternative, the specific management activities to realign the main Deer Creek Road, remove the three bridges and existing road footprint, or to restore floodplain function proposed by the Deer Creek Road Realignment would not occur. Ongoing and permitted uses on National Forest system lands would continue within the project area. The Deer Creek road would remain in its current location. The 2015 maintenance and road reconstruction that restored public access to the Deer Creek drainage was a temporary construction solution. It is likely maintenance requirements of this existing problematic road section, would continue at existing or increased levels. Motorized public access may again be limited or restricted in the drainage in the future due to road failure or damage to road infrastructure stemming from high creek flows, debris flows or other similar occurrences.

The Sawtooth Forest Plan guides management on the Forest and the Deer Creek watershed primarily falls within MPC 4.2,- *Roaded Recreation Emphasis* (Figure 2). Ongoing Forest management would not be affected by this alternative, such as noxious weed treatments, routine road and trail maintenance activities, and other current Forest Plan management objectives identified in Table 1. Management activities previously approved by other environmental analyses and decision documents would also continue to be implemented. This includes actions identified in the 2016 Deer Creek Post Fire Restoration Project, including trail reconstruction, conversion of road segments to trail, re-establishing and re-building trailheads in the North Fork Deer Creek and main Deer Creek, restoration of floodplain areas in the drainage, re-establishing dispersed camp sites in the lower drainage and other passive restoration components; the 2008 Sawtooth National Forest Travel Plan Decision, which includes establishing an OHV loop trail (Wolftone-Kinsey) in the Deer Creek drainage that would travel from Wolftone Creek to Kinsey Creek and connecting along the main Deer Creek Road; and the 2013 Deer Creek Restoration Project which authorized construction of this Wolftone-Kinsey OHV loop trail, and other recreation and resource improvement projects in the drainage. Figure 3 is the No Action Alternative Activities Map and displays ongoing management and existing forest recreation resources in the Deer Creek Watershed.

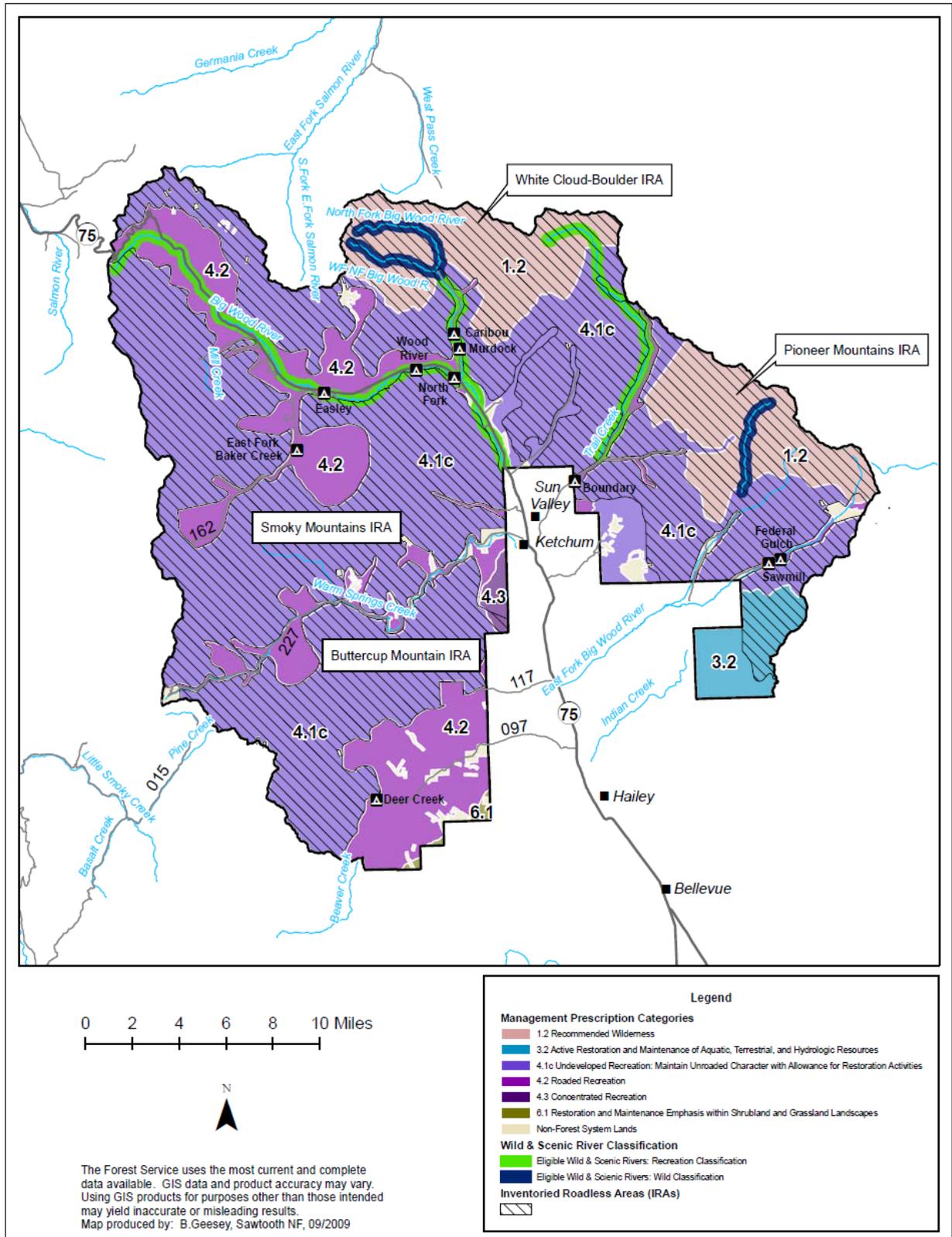


Figure 2. Management Area 4, Big Wood River Location Map, with description of Management Prescription Categories.

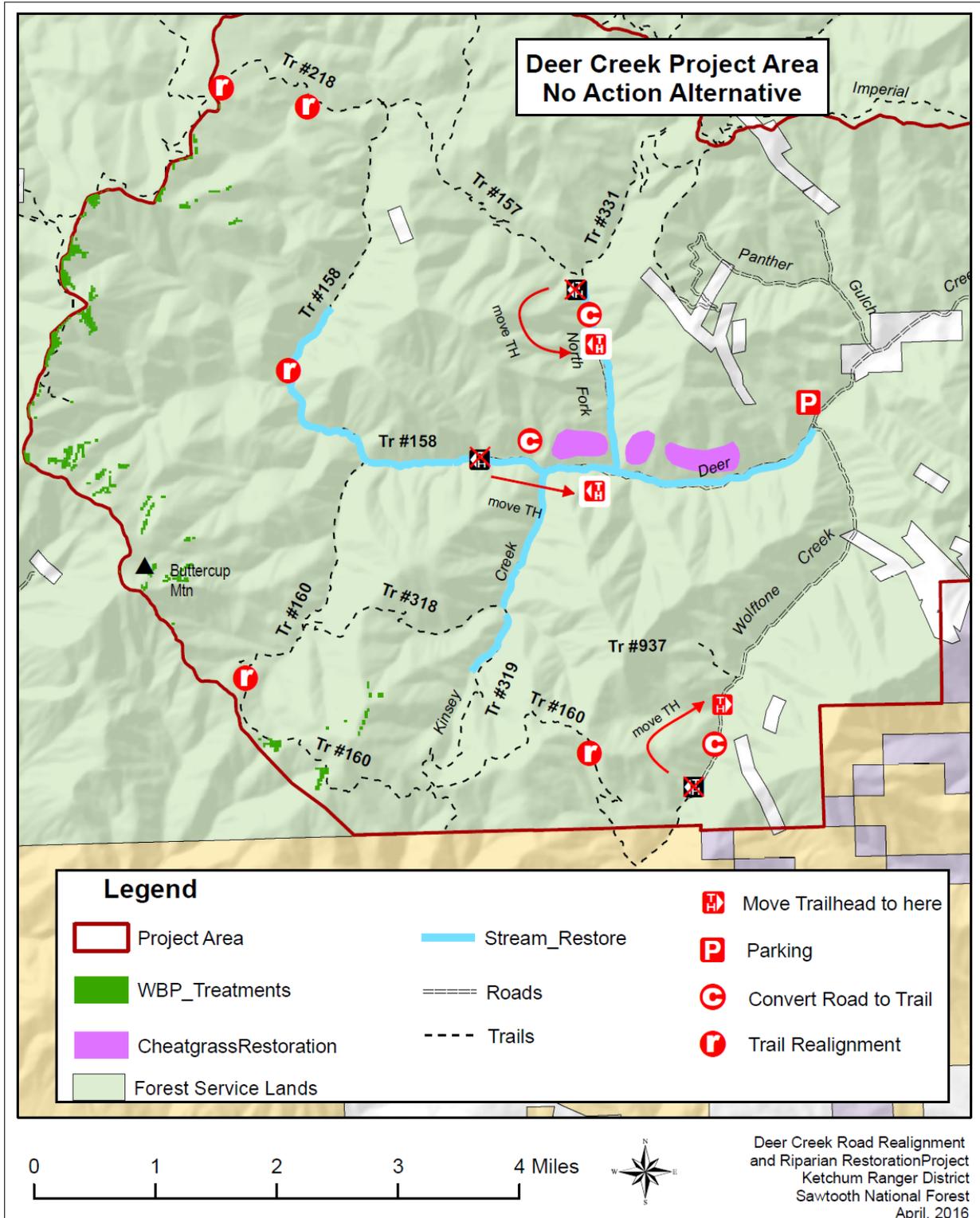


Figure 3. No Action Alternative Activities Map.

Table 1. Examples of Forest Plan Direction for the Deer Creek Area.

Vegetation	Objective	0448	Restore structure and native species composition, as described in Appendix A, in the Alpine Meadows, Dry Meadows, and Mountain Big Sagebrush vegetation groups in the Deer Creek, Warm Springs Creek, Trail Creek, Greenhorn Gulch, and East Fork Big Wood River drainages where these groups have been altered.
Timberland Resources	Objective	0498	Provide for commercial harvest opportunities associated with restoration activities to reduce fire hazard in Baker Creek, Warm Springs drainage, Trail Creek, Spruce Creek Summer Home area, Galena Lodge area, and Deer Creek drainage.
Fire Management	Objective	04119	Identify areas appropriate for Wildland Fire. Use wildland fire to restore or maintain desired vegetative conditions and to reduce fuel loadings except in Sun Valley-Trail, Elkhorn Creek, Lake Creek, Eagle Creek, Fox-Leroux, Adams-Big Wood, Triumph-Milligan, Easley-Headquarters outside SNRA boundary, east portion Barr Gulch-Rooks, Warfield-West Fork Warm Springs, Greenhorn Creek, Deer-Quigley, Wolfstone-North Fork Deer Subwatersheds. (Modified as part of the 2012 WCS amendment)
Wildlife Resources	Objective	0457	Coordinate seasonal road closures with Idaho Department of Fish and Game to reduce elk mortality and disturbance in the Cove Creek, Warm Springs, East Fork Baker Creek, and Deer Creek areas

Alternative 2 - Proposed Action

The Proposed Action was developed to specifically address the Purpose and Need for the project. The Ketchum Ranger District proposes to implement the actions described below.

A. Road Realignment

The Sawtooth National Forest proposes to realign a section of the Deer Creek Road as part of the post-fire restoration treatments to occur in the Deer Creek drainage on the Ketchum Ranger District. The project would improve water quality and provide sustainable access to the drainage by realigning 3650 ft. of road onto the south facing slope above the floodplain, removing three bridge crossings over Deer Creek, installing one crossing (culvert or bridge) at the North Fork Creek and removing 0.5 mile of the existing Deer Creek Road from the riparian floodplain (**Figure 1**). The new road segment would proceed onto the south-facing upland slope approximately 0.3 miles east of the North Fork Deer Creek Road, just prior to the location where the road currently turns to the south to cross Deer Creek. Here the new road alignment would fork; the right fork traveling north and descending the slope to connect to the existing North Fork Deer Creek Road and left fork continuing to travel to the west, cross the North Fork Deer Creek, and travel near the toe of the south-facing slope approximately 0.2 miles until it finally connects to the end road terminus at the existing Deer Creek day-use area and trailhead (**Figure 4**).

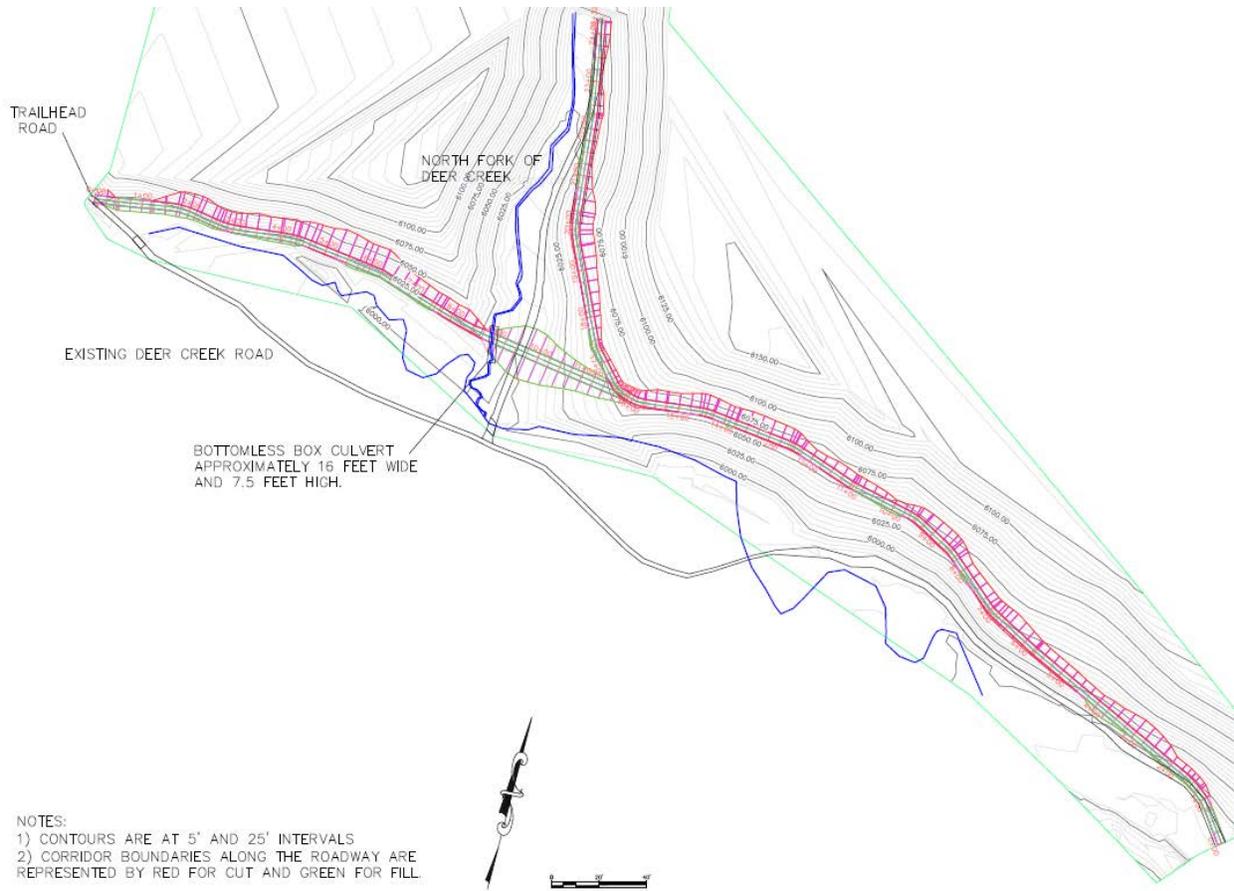


Figure 4. Deer Creek Road Realignment route configuration and design.

The upland slope where the new road segment would be aligned has an average slope of 40 percent and requires a full bench cut for design integrity and road stability. The road cut would range from 30-50 feet in width, depending on slope angle, with an average cut width of 40 feet (*Figure 5*).

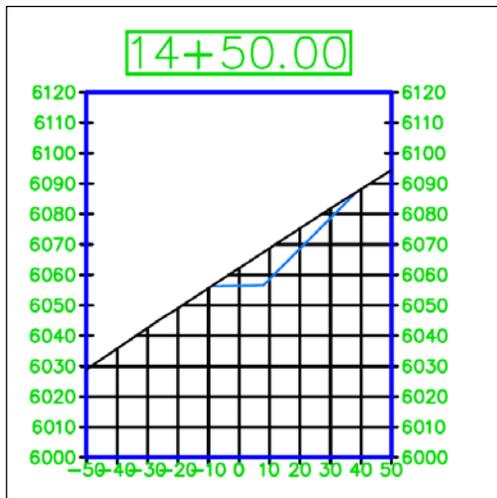


Figure 5. Side view of the average road cut required for the new Deer Creek road realignment.

By utilizing the full bench cut design and removing all material from the roadbed construction site, instead of using a cut and fill road design, there is a greatly reduced potential for soil movement and erosion down into the creek and floodplain. The full bench cut design will be used as much as possible however there will need to be some through fill design for the section of road that descends to the crossing. The new stream crossing on the North Fork Deer Creek would be a bottomless culvert or a bridge and would extend beyond the bankfull width of the channel. It may be necessary to temporarily divert the creek to install the bottomless culvert or bridge for the crossing, which would occur during the late summer/fall season when stream flows are at their minimum. The following steps outline the process if a temporary diversion is required:

1. Pre-build culvert prior to diverting creek. This allows for quick installation, minimizing diversion time.
2. Place fish avoidance structures in creek, coffer dam the upper portion and use a pump to divert the stream or into the diversion channel.
3. Excavate the footings one on each side, add a small amount of rock chip material in the bottom of the footing excavation to help smooth the bottom of the hole, place footings and backfill. (This step will likely require a few creek crossings to complete.)
4. Attach built culvert to footings and place riprap (if needed) to hide the concrete footings.
5. Put creek back into original channel and backfill the culvert.
6. Rehabilitate the diversion channel (if needed).

The rock materials removed from the new full bench cut would be hauled eastward toward the Forest boundary and could be used to build up other sections of Deer Creek Road to the east that require heavy road maintenance (*Figure 1*). Additionally, along this heavy road maintenance section, in sections where the current roadway is affecting the stream channel, riparian zone, or floodplain and the road could be moved to a more upland location without requiring a hillside roadcut, the Forest may realign up to one additional mile of road segments (*Figure 1*) using those rock materials.

Revegetation of upland areas along the road alignment would occur to maintain biodiversity and scenic beauty of the surrounding plant communities and to further stabilize disturbed slopes. Seedling planting and hydro- or broadcast seeding using native grass, forb, and shrub species could be utilized to revegetate disturbed areas. Soil augmentation such as the addition of fertilizer and/or mulch may be used. Weed-free straw or wood cellulose fiber mulches could be used to minimize rain splash erosion. If necessary, wattles, natural fiber mats, or temporary drainpipe could be used protect the site from erosion due to surface water flow. Revegetation techniques would include an integrated weed management strategy. Control tactics, such as manual or chemical treatments, may be used in conjunction with seeding well-adapted and competitive grasses, forbs, and legumes to accelerate plant community recovery.

B. Riparian Restoration

Following the road realignment completion, riparian and floodplain restoration would occur, including: obliteration of the replaced roadway, native revegetation, installation of large woody debris to capture and store sediment in the riparian zone, stream channel restoration and floodplain reconnection, and facilitation of passive restoration by beavers.

Road obliteration activities include removal of three bridges and abutments, as well as removal of road surface and roadbed materials to take the floodplain back down to natural grade. Activities also include installing erosion control measures such as native revegetation, use of coir logs, jute mats or other natural materials, as needed, to help stabilize the disturbed areas and promote natural recovery. Re-establishment of the stream channel may involve earth-moving, installation of native woody materials, log jam construction, creation of side channels, and other habitat restoration techniques. In some areas, restoration may also be allowed to occur naturally, dependent on the habitat needs, opportunities and conditions in the watershed once the road has been moved. Restoration of the riparian zone may involve planting rehabilitated areas with native materials, such as seedlings, willow cuttings, or broad cast seed.

Heavy equipment, including an excavator, back hoe and dump truck, would be used to implement road alignment, remove existing road and bridges, and complete floodplain and channel restoration. Road construction may be completed via a contract, while removal and restoration of the existing road segment and bridge crossings would be completed by the Forest's construction and maintenance crew.

Realigning the road out of the floodplain and onto the upland slope would greatly decrease the sediment release into Deer Creek over the long-term, improving water quality and restoring the natural channel flow, riparian floodplain, and fish habitat. Implementation of this project is intended to begin in the summer of 2016, coinciding with other post-fire restoration treatments.

Project Design Features and Best Management Practices (BMPs)

Soils/Water/Riparian/Aquatics (SWRA)

- Riparian Conservation Areas (RCAs) are delineated as directed in Appendix B of the Forest Plan. For the Project Area, the RCA is delineated as follows: for forested perennial streams the buffer is flood prone width or two site potential tree heights (150-foot slope distance), whichever is greatest; for forested intermittent streams the buffer is flood-prone width or one site potential tree height (75-foot slope distance), whichever is greatest; for any non-forested streams the buffer is the extent of the flood prone width or riparian vegetation (whichever is greatest).
- Provide an Aquatic Management Zone (AMZ) buffer of suitable width between the road's edge and the stream channel to ensure that no sediment is mobilized from the roadway into the stream channel during storm events. For this project, the minimum suitable buffer width is site-specific and dependent on roadfill gradients and width, road surface gradient, and the stability of the roadcut. The minimum buffer distance

will be calculated and designated by the aquatic biologist during the final road alignment surveys.

- Design the road surface drainage system to intercept, collect, and remove water from the road surface and surrounding slopes in a manner that minimizes concentrated flows in ditches, culverts and over fill slopes and road surfaces. Use a distance interval between drainage features that is suitable for the road material, gradient, and expected traffic levels.
- Where drainage culverts are needed, ensure that the concentrated flows will not cause hillslope erosion or gullies downslope toward the floodplain and stream channel. Provide a sufficient buffer distance at the outfall of road drainage structures for water to infiltrate before it is able to reach the waterbody.
- Leave existing rooted trees or shrubs at the toe of the road's fillslope or benchcut to help stabilize the road edge.
- If there are any excess and unsuitable materials removed from the hillslope and road cut, those materials will be deposited and stabilized only in pre-designated waste rock sites.
- Locate stream crossings where the channel is narrow, straight and uniform, and has relatively flat terrain, to the extent practicable. Where lateral channel instability exists, design the road crossing large enough to account for natural channel adjustments and possible channel shifts over the design life of the structure.
- Design and install crossings to sustain bank full dimensions of width, depth, and slope and maintain streambank resiliency and continuity through the structure.
- Align any culverts with the natural stream channel and orient the crossing perpendicular to the channel, to the extent practicable.
- Design the stream crossing structures to have sufficient capacity to convey peak annual flows and flood flows without appreciably altering streamflow and channel characteristics.
- Fuel and chemical storage will be located outside of the RCA.
- Trees or snags that are felled within RCAs would be left unless determined by the District Fisheries Biologist/Hydrologist to not to be necessary for achieving soil, water, riparian, and aquatic desired conditions (as per Forest Plan guidance.)
- Heavy equipment (excavator or backhoe) used to excavate fill and remove culverts from effected creeks and floodplains within the project area would not be operated in the wetted creek (with the exception of the bucket). The machinery may have to cross the creek channel one or more times in order to access the far side of the stream crossing site.
- The project would be performed in late summer or fall to minimize the amount of water flowing in the creek through the site.
- To reduce sedimentation and turbidity associated with removal of the culvert and fill, cofferdams (in the form of sand or gravel bags, tarps, and/or straw bales) would be installed in North Fork Deer Creek upstream and downstream of the culvert to dewater the stream channel, with streamflow routed around the excavation site with hoses, pipes, and/or pumps.
- Prior to excavation, blocknets will be used to restrict fish access to the worksite, and fish at the site will be netted and moved upstream to prevent mortality.

- The road decommissioning work, including the removal of bridges or culverts where practicable, will follow the Best Management Practices outlined in the Programmatic Biological Assessment/Biological Evaluation for Stream Crossings in Idaho (USFS and BLM 2011).
- To prevent streambank erosion and streambed disturbance, minimize the number of stream crossings by heavy equipment and minimize ground disturbance within the RCAs.
- Where there is potential for increased streambank erosion and sediment deposition into the active stream channel, use of erosion control materials (eg. silt fencing, straw wattles, coir logs) will be required.
- Prior to culvert removal, cofferdams or other erosion structures shall be constructed to isolate work areas from flowing water on fish-bearing streams. This should minimize sediment delivery and stream turbidity and prevent injury to aquatic organisms. Immediately prior to cofferdam construction and equipment entry into the stream, fish passage will be blocked with nets, then aquatic organisms in the project area will be netted and placed upstream of the work area to minimize direct injury.
- Fish passage shall be provided at all proposed and reconstructed stream crossings of existing and potential fish-bearing streams unless protection of pure-strain native fish enclaves from competition, genetic contamination, or predation by exotic fishes is determined to be an overriding management concern.
- To accommodate floods, including associated bedload and debris, new culverts, replacement culverts, and other stream crossings shall be designed to accommodate a 100-year flood recurrence interval unless site-specific analysis using calculated risk tools or another method, determines a more appropriate recurrence interval.
- Mechanical equipment should be inspected to ensure that it is free of leaks and clean of contaminants such as cleaning agents, motor oil and hydraulic fluids to prevent soil or water contamination.
- Equipment refueling will occur outside of the riparian zone in an upland location. Refueling within the RCA will be allowed only in pullouts on the opposite side of the road away from the stream away from flowing water. Spill containment kits with absorbent pads (capable of absorbing petroleum products) will be kept on hand in case a spill occurs.
- Equipment staging and parking areas should be located outside the riparian zone in weed-free sites, unless no other alternative exists.
- In excavation areas adjacent to flowing or standing water (including streams, wetlands or side channels), sediment filtering devices (ie. silt filter fence, wattles, weed free straw bales, etc.) shall be used to limit delivery of disturbed soils and fill material into the creeks. These should be placed between the work area and flowing water to intercept sediments that might be flushed/spread from the work site.
- To avoid release of contaminated soils into the stream, do not allow road surface or roadbed materials to enter the stream during maintenance and decommissioning actions.
- Excavation and other equipment used in the proposed action will not ford or travel in any wetted stream channel except as necessary to complete the proposed actions.
- Following disturbance of any riparian or streambank vegetation, native plantings and/or seeding will be used to re-establish riparian vegetation and provide long-term

bank stabilization. A Sawtooth National Forest botanist will be consulted to identify appropriate seed mixtures for use.

- Where reasonable and practical location alternatives exist, new recreation facilities and trails should be located outside of RCAs. When new recreation facilities and trails must be located in RCAs, they shall be developed such that degrading effects to RCAs are mitigated.
- Fish passage shall be provided at all proposed and reconstructed stream crossings of existing and potential fish-bearing streams unless protection of pure-strain native fish enclaves from competition, genetic contamination, or predation by exotic fishes is determined to be an overriding management concern.
- Where reasonable and practical location alternatives exist, new recreation facilities and trails should be located outside of RCAs. When new recreation facilities and trails must be located in RCAs, they shall be developed such that degrading effects to RCAs are mitigated.
- Pump intake screens shall meet National Marine Fisheries Service (NMFS) screening criteria (NMFS 1996). For example they will have openings not exceeding 3/32-inch diameter and a surface area proportionate to the pump intake capacity. The objective is to provide a positive barrier to fish entrainment and maintain a velocity of no more than 0.4 feet per second at the surface of the intake screen to avoid impingement.

Scenic Environment and Visual Resources

- Ensure revegetation of all disturbed areas immediately or within one year of project completion.
- Develop cut slopes from road development to mimic natural topographic patterns from the characteristic landscape (e.g. natural undulations common to the native slope should be incorporated into the finished grading for the road cut).
- Where slope cuts exceed 3:1, work with the Forest landscape architect to develop slope stabilization techniques including, but not limited to, dry-stack rockery or pinned soil matting to allow slopes to ‘hold’ and establish vegetation.
- Remove and stage topsoil and vegetative material from initial excavation to place back on disturbed slopes for growing medium and seed source.
- Stumps within 100’ of travel routes (roads) will be cut flush (to w/in 4”) of ground and cuts will be angled away from travel routes. Stumps from 100-300’ will be cut to within 8” of the ground or as close as possible to the ground.

Noxious Weeds and Invasive Plants

- Only approved treatments and herbicides will be used to treat noxious weeds. Treatments would comply with the “*Biological Assessment and Biological Evaluation of Effects from Noxious and Invasive Weed Management Program on Fisheries, Terrestrial Wildlife and Rare Plant Species, Fairfield Ranger and Ketchum Ranger Districts, and Sawtooth National Recreation Area, Sawtooth National Forest, April 6, 2012*”
- To prevent invasion/expansion of noxious weeds, earth-disturbing equipment shall be high pressure washed to remove all visible plant parts, dirt, and material that may carry noxious weed seeds, and/or invasive life forms, prior to entry into the project

area, after working in noxious weed areas before traveling to an uninfested area and upon leaving the project area, as warranted.

- As needed to prevent erosion and minimize the risk of invasion or expansion of noxious weeds, reseed or revegetate areas where the soil has been exposed by ground-disturbing activity using native plant materials or a Forest Service botanist-approved native seed mix.
- New and existing populations of noxious weeds within and adjacent to the project areas would be avoided or inventoried and treated under the District's noxious weed program prior to project implementation.
- Gravel or borrow material source sites will be identified prior to implementation. Sites shall be noxious weed free or if noxious weed species are present, an effective treatment and monitoring mitigation measures would be fulfilled.
- Staging areas, when required, will be located in previously disturbed areas that are noxious weed free. Rehabilitation will occur following completion where/as necessary.
- Materials such as hay, straw, or mulch that are used for rehabilitation and reclamation activities shall be free of noxious weed seeds.
- Ongoing inventory, monitoring and treatments would begin prior to Deer Creek Watershed Project implementations and continue throughout the implementation period and for five years following project completions.

Wildlife

- Loss of large trees or snags (>24" DBH) (i.e. Legacy Trees) would be avoided during trailhead and trail layout.
- No projects involving vegetation removal would occur between May 1 and August 1 to avoid disturbance to TES/MIS wildlife species nesting and denning, migratory bird nesting, elk calving and deer fawning, except if surveys conducted by District Wildlife Biologists show that none of these species would be disturbed by the proposed activities.
- New trail layout would avoid known MIS/TES wildlife dens/nests or raptor nests.

Recreation/Public Safety

- Notify public of road construction and possible hazards prior to implementation through official press release.
- Post warning and/or closure signs In the Deer Creek drainage during road construction to inform the public of construction operations and truck traffic hazards.
- Notify affected outfitters and the general public of trail and road closures that would occur during big game hunting seasons.

Alternatives Considered But Dismissed From Further Analysis

The NEPA regulations require that agencies should "vigorously explore and objectively evaluate all reasonable alternatives" to the proposed action. Alternatives that would not be reasonable, either because they do not meet the purpose and need or because of other considerations (e.g. not

address a significant issue), may be eliminated from detailed study. A brief discussion of these alternatives and the reasons for their dismissal is given.

Alternative 3

Relocate the Main Deer Creek Trailhead to Panther Gulch Area (including: Eliminating North Fork Deer Creek Trailhead and Deer Creek Picnic Site/Day Use Area; Converting Deer Creek Road to OHV Trail within the Existing Alignment; Converting North Fork Deer Creek Road to a Multiple-use Single Track Trail).

The Deer Creek Watershed on the Ketchum Ranger District is designated as Management Prescription Category (MPC) 4.2, *Roaded Recreation Emphasis*, in the Sawtooth National Forest Land and Resource Management Plan (2003, revised 2012). Lands within this management prescription category primarily have uses emphasizing dispersed and developed recreation, including both motorized and non-motorized recreation opportunities. Multiple trailheads, numerous designated dispersed camp sites and an extensive road and trail network currently exist in the drainage.

Rationale for Dismissal

1. Does Project Meet Purpose and Need

Alternative 3 would not fully meet the purpose and need of the project. Alternative 3 would partially restore floodplain and riparian function and condition. In the North Fork Deer Creek drainage, the entire length of the North Fork Deer Creek Road would be removed and restored, allowing for the natural flow of the creek in this area. However, along the main Deer Creek channel only a portion of the Deer Creek Road would be removed and restored in this Alternative. In this area, only roughly half the tread width of the Deer Creek Road would be eliminated from the floodplain and at least two of the existing bridges would not be removed. The existing road alignment and bridges would be retained in order to fulfill the District's commitment from the 2008 Travel Planning Decision, in which the Forest agreed to create the Wolfstone-Kinsey OHV Loop Trail. As a result of this commitment, the Forest would maintain a 70 inch width along the length of the main Deer Creek Road alignment for OHV users along the Wolfstone-Kinsey OHV Loop Trail. Additionally, at least two of the bridges would remain to allow OHV travel at creek crossing locations along Deer Creek.

Alternative 3 would improve water quality and fisheries habitat from the existing condition, especially in the North Fork Deer Creek where the entire length of the existing road would be removed and converted to single track multiple use trail. However, restoration and water quality improvement of the main Deer Creek drainage and floodplain would not be complete or result in a natural channel flow through an unrestricted floodplain since a 70 inch tread-width OHV trail and at least two bridges would need to be retained in the existing alignment, which travels through the floodplain.

In addition, Alternative 3 would not maintain existing recreation opportunities in the Deer Creek Watershed, consistent with the Sawtooth Forest Plan direction (ROS/MPC 4.2). Under this alternative approximately eight designated dispersed campsites and four

miles of Forest roads would be closed and decommissioned. The existing network of single-track trails used for hiking, horseback riding and mountain biking in the Deer Creek drainage would need to be accessed via the three mile OHV route in the lower basin, adding additional mileage and changing the current user experience.

2. Other Factors

Trailhead Relocation Feasibility

The Deer Creek watershed is characterized by steep slopes and a narrow floodplain. If the existing Deer Creek and North Fork Deer Creek Roads were decommissioned above Wolfstone road, road access from the east would remain and connect to the existing Forest Road 102 Wolfstone Road. A new trailhead would need to be established near Panther Gulch. This new trailhead site would be replacing two existing trailheads and would need to include parking for both passenger vehicles and vehicles with trailers. A site of at least 1.0 acre in size would be required to accommodate this need.

A preliminary analysis of the Deer Creek drainage from Wolfstone Creek east to Twin Bridges Creek (project record) did not identify a location of Forest Service land that would accommodate a new trailhead. Private land within this vicinity and that could possibly accommodate a trailhead was also reviewed. One location near Panther Gulch and another near Jolly Sailor Gulch could possibly accommodate a trailhead of this size. Inquiries indicated the private land owner would be willing to explore land exchange opportunities for the entire 197 acre parcel (project record). A land exchange would require several years of review, negotiation and extensive analysis, with outcomes remaining uncertain. Therefore this option is considered outside the scope of the analysis and was considered but eliminated from further analysis.

Past Decisions

In 2008, the Ketchum District Ranger made a decision to approve “Designation of the Wolfstone–Kinsey Creek Loop to an OHV loop”. Under this decision the existing single-track motorized trail would be converted to an OHV trail, approximately 60-80 inches in width, suitable for OHV use. The loop trail would utilize the existing Forest system road in the drainage, both the main Deer Creek Road (FR 097), from the intersection with Kinsey Creek east to the Wolfstone intersection, and the Wolfstone Road (FR 102). The designation of the 2008 Motorized Vehicle Use Map had extensive public input with over 300 comments received. The conversion of the Wolfstone–Kinsey Creek Loop was fully analyzed and disclosed in the Environmental Assessment. Because this project had so much public input and is in conformance with our Forest Plan direction, the 2008 decision will remain. In 2013, the Ketchum District Ranger made a decision to approve the Deer Creek Watershed Project which authorized the implementation and construction of this OHV loop trail and construction began in the summer of 2015.

For these many reasons, this Alternative was eliminated from detailed study.

Alternative 4

Relocate the Main Deer Creek Trailhead to Panther Gulch Area (including: Eliminating North Fork Deer Creek Trailhead and Deer Creek Picnic Site/Day Use Area; Restoring Deer Creek Floodplain, Establishing OHV Trail from New Panther Gulch Trailhead to Kinsey Creek Along Upland Alignment; Removing Three Bridges Along Deer Creek; Installing OHV Bridge at North Fork Deer Creek; Converting North Fork Deer Creek Road to a Multiple-use Single Track Trail).

Rationale for Dismissal

1. Does Project Meet Purpose and Need

Alternative 4 is very similar to Alternative 3 and would also not fully meet the purpose and need of the project. Alternative 4 would restore floodplain and riparian function and condition by removing the Deer Creek and North Fork Deer Creek roads from the floodplain. However, in the 2008 Travel Planning Decision, the Forest committed to creating the Wolfstone-Kinsey OHV Loop Trail. Therefore, the Forest would need to build a 70 inch width OHV trail in an upland alignment (similar to what is being proposed for the Deer Creek Road Realignment) in the Deer Creek drainage from the Panther Gulch area west to Kinsey Creek in order to completed the Wolfstone-Kinsey OHV Loop Trail. Additionally a new bridge would be required at the North Fork Deer Creek along this alignment. Alternative 4 would improve water quality and fisheries habitat in the drainage.

Alternative 4 would not maintain existing recreation opportunities in the Deer Creek Watershed, consistent with the Sawtooth Forest Plan direction (ROS/MPC 4.2). Under this alternative approximately 8 designated dispersed campsites and 4 miles of Forest roads would be closed and decommissioned. Additionally, the existing network of single-track trails used for hiking, horseback riding and mountain biking in the Deer Creek drainage would need to be accessed via the three mile OHV route in the lower basin, adding additional mileage and changing the current user experience.

2. Other Factors

Trailhead Relocation Feasibility and Past Decisions

Refer to discussion under Alternative 3 above; same rationale for Alternative 4.

For these reasons, this Alternative was eliminated from detailed study.

CHAPTER 3 – ENVIRONMENTAL CONSEQUENCES

Non-Key Issue 1: Noxious and Invasive Plants

Noxious weeds and invasive non-native plants pose serious threats to biodiversity, the integrity and health of native plant communities, and wildlife habitat. Noxious weeds, primarily spotted

knapweed, and invasive cheatgrass occur near and within the Deer Creek Road Realignment and Riparian Restoration Project Area. Tools, equipment, vehicles, animals, clothing, boots, and project materials moved between worksites can become potential vectors for the spread of invasive plants (Cal-IPC 2012, Taylor et al 2011). Last confirmed noxious weed treatments administered by the Ketchum RD in this vicinity occurred during the summer of 2015 (*Range Management and Noxious Weeds Report*, project record).

Ground disturbance provides suitable areas for noxious weed and invasive plant species to colonize, and ongoing use of these areas may spread these non-native plants into currently unoccupied areas. Design criteria and best management practices are incorporated to the proposed action (see Ch. 2). These, along with ongoing, annual treatments on the District, help reduce and contain the spread of these noxious and invasive plant species.

Non-Key Issue 2: Water Quality and Sediment Delivery

Current Condition

Along the existing road corridors, several segments of the main Deer Creek road and North Fork road are in the active floodplain. Some sections are located within riparian zones located at or below floodplain elevation, which affects floodplain, stream channel and riparian functions. In these sections of the RCA, there is insufficient buffer to protect the stream from road impacts. A buffer is needed to effectively filter sediments and nutrients that are mobilized from the roadway due to roadbed erosion and ground disturbance. Elevated levels of sediment runoff and deposition will increase turbidity, may increase substrate embeddedness, and can change nutrient and dissolved oxygen concentrations, affecting water quality and stream habitat conditions. The current maintenance activities at road/channel crossings, which are undertaken to keep the stream from damaging roads and bridges, have effects on stream channel complexity, floodplain hydrology and streambank stability.

Under the current condition, which includes the existing Deer Creek Road alignment within the floodplain, an increase in sediment delivery due to reduced streambank stability will continue to result in reduced aquatic habitat quality and overall integrity of the RCAs in the Deer Creek watershed. The existing bridge road crossings on Deer Creek would remain at risk from future flooding events, debris flows and movement of large wood in the creek. The Deer Creek road from the current day use site to east of North Fork junction will continue to affect local riparian habitat conditions and streambank stability and continue to have localized, seasonal effects on sediment deposition, water quality and in-stream habitat conditions. Persistent problems with erosion of the road and inundation from beaver activity would continue, especially during spring melt and storm events. The No Action Alternative would be consistent with Forest Plan Standards, but **would not promote the active restoration of aquatic and riparian conditions towards desired conditions identified in the Forest Plan** (*Aquatic Specialist Report, E. Phillips*, project record).

Beneficial effects of the Proposed Action

Under the proposed action, the road realignment and subsequent floodplain restoration should meaningfully improve water quality and aquatic habitat conditions in the project area and Deer

Creek drainage. There may be some localized, temporary to short-term negative effects on aquatic conditions, but with adherence to the BMPs (derived from USDA 2012) and project design criteria described in the Proposed Action (see Ch. 2), these negative effects should be temporary and would be outweighed by the overall project benefits to aquatic resources (*Aquatic Specialist Report, E. Phillips, project record*).

The relocation of the roads away from the stream channel and out of the riparian zones will improve riparian functions and reduce erosion and sedimentation impacts. The decommissioning and obliteration of old roadbeds to a more natural floodplain contour and native revegetation should decrease floodplain erosion and sedimentation. This will include fill removal, grading, soil decompaction and native revegetation, and will reduce sedimentation and runoff into Deer Creek and North Fork Deer Creek in the long-term. The realignment of the road up onto the hillside will also include removal of three bridges and replacement of one bridge with one bottomless culvert. This will reduce maintenance needs, including a current and anticipated future need to remove woody debris jams from the floodplain above the bridges to prevent bridge failure. By removing the bridges and road from the floodplain, the stream will be able to adjust itself to a more natural course without ongoing management.

Negative Direct Effects of the Propose Action

Fish surveys conducted in 2014 and 2015 adjacent to the action area found zero fish or amphibians present. Therefore, the risk of direct effects these aquatic species is expected to be minimal. The proposed actions could have direct effects on fish if any are in the action area or immediately downstream during in-stream work. These direct effects could be the result of the heavy machinery working in the stream channel, vehicles fording the creeks, physical removal of the culverts will dislodge substrates and could flush them downstream, and placement of substrate materials in the active channel to restore channel complexity could affect benthic invertebrates, temporarily increase turbidity and disturb fish. Therefore, the project incorporates several BMPs and mitigation measures into the proposed action to minimize the likelihood of any direct effects on fish and other aquatic species. These are described in Ch.2 of the EA as well as in the Aquatics Specialist Report (E. Phillips 2016).

Negative Indirect Effects of the Proposed Action

The action to physically remove bridges, install a bottomless culvert on North Fork, obliterate the roadway from the floodplain, realign the stream channel into a more complex, natural configuration, install large wood and log jams, and other active channel restoration will have short-term negative effects on water quality, including turbidity and flushing of nutrients downstream. These activities require physical disturbance of the existing streambanks and restoration of the banks and channel. These restoration actions will cause a short-term degradation of localized streambank stability and channel structure until the system stabilizes and the restoration takes effect. These effects on aquatic habitat conditions and water quality will be mitigated using several BMPs and mitigation measures (see Ch. 2) to protect water quality and fish habitat. Because the goal of this phase of the project is stream and riparian habitat restoration, the long-term benefits of streambank restoration and fish passage improvements should outweigh the short-term negative effects of the action on water quality and in-stream habitats.

Road realignment onto the hillside will create temporary to short-term soil disturbances that can increase erosion, sediment movement and loss. However, in the long-term, the road redesign and realignment into the uplands should reduce chronic erosion, restore more natural floodplain hydrology, improve infiltration rates and improve stream habitat stability in this section of Deer Creek and North Fork Deer Creek.

There should be no significant cumulative effects on aquatic habitats, water quality, or aquatic R4 Sensitive Species under the Proposed Action alternative. The long term effect on water quality and sedimentation would be an **improvement from the existing condition**. (See *Aquatic Specialist Report, E. Phillips*, project record).

Non-Key Issue 3: Scenic Environment

The National Forest - Visual Management System has been used by the Forest Service since the early 1970s and provides the basis for describing acceptable degrees of landscape alteration within the Sawtooth National Forest (SNF). This system describes a range of desired conditions; but more importantly provides a means of assessing the potential visual effect of various proposals, relative to prescribed management objectives found within our current Forest Plan. Natural landscape features and viewer sensitivity (both physical numbers and concern for the environment) help to establish visual management objectives for any given area. All public lands within the SNF were first inventoried in the early 1980s. This Visual Management System has been routinely used on the SNF to evaluate proposed activities and determine visual compatibility since that time.

Project-level VQO Analysis

A VQO mapping error has been detected that occurred when VQOs were originally mapped at the Forest Level. A project-level VQO analysis has determined there to be an inconsistency with the mapped VQO of *Retention* for this area. The adopted Forest-level VQO designation process failed to consider existing recreational developments when it applied VQOs to the Sawtooth NF in the early 1980s. As a result, these VQO data deficiencies are therefore specifically identified as opportunities become available, typically during project-level analysis such as this. Because Forest VQOs were mapped at a Forest level, guidance provided in the Visual Management System allows that VQOs may be modified at a project level to reflect on-the-ground conditions. The appropriate VQO for a developed recreation road corridor of this level is *Partial Retention*, due to the consistent presence of pre-existing recreational developments throughout the road corridor – defined as the area within ¼ mile of the road/travel route. As a result, the correct/accurate VQO for this area is *Partial Retention*. A more involved District and/or Forest-wide effort will be undertaken in the future to correct these and other previously noted VQO data deficiencies elsewhere per Forest Plan direction SCOB01 – Implement the Scenery Management System.

In order to ensure the project meets the Visual Quality Objective – several scenery-specific project design features have been developed to ensure scenery resource objectives are met – in combination with other project design features. (See Ch. 2).

Based on a comparison of the natural site characteristics, existing landscape dominance elements (form, line, color, texture), the physical proximity of forest users to the project area, Forest user viewer sensitivity, and the degree of landscape alteration created by the project proposal, if implemented as proposed with inclusion of the above scenery-specific design features (see Ch. 2), this project will meet the adopted Sawtooth National Forest Land and Resource Management Plan corrected Visual Quality Objective of *Partial Retention (Visual Evaluation Specialist Report, M. Phillips, project record)*.

Federal, State, and Local Laws

These actions are consistent with the Sawtooth National Forest Land and Resource Management Plan (*revised, 2012*) and shows consideration of “best available science”. The proposed actions are in compliance with the forest standards and guidelines and is consistent with all pertinent direction found in the plan.

Endangered Species Act- The Endangered Species Act requires that federal activities not jeopardize the continued existence of any species federally listed or proposed as threatened or endangered, or result in adverse modification to such species’ designated critical habitat.

Information on potentially occurring threatened, endangered, or sensitive (TES) species or their habitat was reviewed from district occurrence records, the U.S. Fish & Wildlife Service (USFWS) Information for Planning and Conservation database and site-specific surveys.

The Deer Creek Watershed Project was authorized in July 2013. A biological assessment and evaluation was completed for that project that evaluated the effects to species that occur or have habitat within the Deer Creek drainage and concurrence was received from the USFWS for this action on June 7, 2013 (project record). This project tiers to and lies within the range of effects identified in that analysis and remains consistent with the concurrence of determination of effects to species that was received. This project also tiers to and lies within the range of effects identified in that analysis and remains consistent with the concurrence of determination of effects Forest Service - Region 4 (R4) Sensitive species

Additional checklists and analyses were completed for plants, terrestrial wildlife, and fisheries species to account for activities that were not described in the 2013 Deer Creek Watershed Project. Checklist, worksheets and technical reports for this project are located in the Project Record. A summary is provided below:

Plants: It was determined that the proposed action would have no effect to *Spiranthes diluvialis* Sheviak Ute Ladies’-tresses Orchid, an ESA Threatened species, or whitebark pine, an ESA Candidate species. A Determination of Effects table is included in vegetation technical report (*Vegetation Specialist Report, D. Taylor, project record*).

The Vegetation Specialist Report had the following determinations for R4 Watch List and Sensitive Plant species. The Proposed Action may impact habitat for *Allium validum* Tall Swamp Onion, *Astragalus leptaleus* Park milkvetch, *Drosera intermedia* Spoon-leaved sundew, *Epipactis gigantea* Giant helleborine orchid, *Helodium blandowii* Blandow's

helodium, *Primula incana* Silvery/Jones' primrose, and *Salix farriae* Farr's willow but would not likely contribute to a trend towards Federal Listing or cause a loss of viability to the population or species.

Additionally, the Proposed Action may impact habitat for *Botrychium lineare* Slender Moonwort, *Botrychium simplex* Least moonwort grapefern, *Bryum calobryoides* Bryum moss, *Noccaea idahoensis* var. *aileeniae* Stanley Thlaspi, *Phacelia minutissima* Least phacelia, *Pyrrocoma insecticruris* Wholeleaf goldenweed/Bugleg Haplopappus but would not likely contribute to a trend towards Federal Listing or cause a loss of viability to the population or species.

Fisheries: No TES aquatic species occur in the Deer Creek watershed or in the project area. Two FS Sensitive aquatic species may be present in action area, Wood River sculpin and Columbia spotted frog. Some components of project will have no effect while others may have long-term beneficial effects on sensitive aquatic species' and habitats. (*Aquatic Specialist Report, E. Phillips*, project record).

Wildlife: It was determined the proposed action would have no effect to Canada lynx. In addition, the proposed actions would have no impact to any FS terrestrial sensitive wildlife species. [Refer to the *ESA Section 7 "No Effect" Determination Worksheet for effects to Canada lynx (ESA listed Threatened species)*, D. Skinner, project record].

Clean Water Act- Section 404 of the Clean Water Act requires a permit from the U.S. Army Corps of Engineers (USACE) before dredged or fill material may be discharged into the waters of the United States. Before the permit is issued, the USACE ensures that the proposed project has taken steps to avoid wetland impacts, or minimize potential impacts on wetlands. This permit is an essential part of protecting wetlands.

A portion of the proposed work will occur in the floodplain, and there are also wetlands in the action area. The purpose of the project is riparian restoration and improved watershed conditions. Activities would provide long-term benefits to aquatic resources. Any negative effects would be localized, temporary or short-term and will be mitigated with BMPs and project design criteria. The project will maintain water quality to support Beneficial Uses, consistent with the State of Idaho Department of Environmental Quality 303d standards (IDEQ2011). All necessary permits and authorizations will be obtained prior to implementation, including a Joint Application Section 404 Permit from the State of Idaho and Army Corps of Engineers, as well as coverage under the Stream Channel Protection Act Memorandum of Understanding with the Idaho Department of Water Resources (*Aquatic Specialist Report, E. Phillips*, project record).

Cultural Resources- A cultural/heritage resources survey of the project area was conducted in 2012 and 2015, and it was determined that the project will have no effect on any significant Native American religious or cultural resources, and will not impact archaeological sites, historic properties or areas. (Idaho SHPO Concurrence, April 9, 2013 and September 5, 2015; project record).

CHAPTER 4 – CONSULTATION AND COORDINATION

Preparers and Contributors

Table 2. Sawtooth National Forest Team Members and Contributors

Name	Area of Expertise
Kurt Nelson	District Ranger – Ketchum Ranger District, Sawtooth NF
Bobbi Filbert	Project Leader/Writer-Editor
Erika Phillips	Fisheries Biologist
Zach Poff	Recreation Program Manager
Matt Phillips	Landscape Architect
Deb Taylor	Botanist
David Skinner	Wildlife Biologist
Robert Garcia	Range Program Manager
Kevin Duchow	Engineer
Bret Guisto	Cultural Resources

The Forest Service consulted the following Federal, State, and local agencies, and Tribes during the development of this environmental assessment:

FEDERAL, STATE, AND LOCAL AGENCIES:

US Fish and Wildlife Service

US Army Corps of Engineers

Idaho Department of Fish and Wildlife

Idaho Department of Parks and Recreation

Blaine County Commissioners

Blaine County Recreation District

Trout Unlimited

Idaho Conservation League

5B Restoration Coalition

TRIBES:

Shoshone-Bannock Tribes

Shoshone Paiute Tribes of Duck Valley

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