Stove Springs CCC Road
Environmental Assessment # DOI-BLM-OR-L040-2013-24-EA

PROJECT TYPE: Road easement acquisition, construction/relinquishment of road easement, and road decommissioning.

PROJECT LOCATION: East of Bonanza, Oregon. Private inholdings in T38S, R14E, S29, 30, Lost River sub-Basin (4th field), Gerber Reservoir watershed (5th field). (See attached map)

BLM OFFICE: Klamath Falls Resource Area, Lakeview District

LEASE/SERIAL/CASE FILE #: The Bureau of Land Management (BLM) owns an exclusive road easement (#OROR 56920) in the project area through private inholdings.

I. INTRODUCTION

The goal of this riparian and meadow rehabilitation project is to restore hydrologic function and stream connectivity by relocating a BLM easement road out of a wet meadow riparian area and constructing a new road segment in an adjacent upland area. This would eliminate several stream and riparian area crossings. This segment of the Stove Springs CCC Road is located on private inholdings adjacent to BLM lands in the Gerber Reservoir watershed, east of Bonanza. The current road alignment was built by the Civilian Conservation Corps (CCC) in the 1930s and has since resulted in road inundation and erosion of the roadbed due to aggradation of the meadow. The Wyden Amendment (Public Law 109-54, Section 434) authorizes the BLM to enter into cooperative agreements to benefit resources within watersheds on BLM lands.

This project would not result in any change to BLM or public egress or ingress. The project would assist both landowner and BLM (easement owner) in achieving the joint objective of reduced sediment and nutrient loading in Barnes Creek and Gerber Reservoir, known to support shortnose suckers, an endangered fish species listed under the Endangered Species Act (see Aquatic Species and ESA Consultation Sections).

Purpose and Need for Action

The purpose of the project is to accomplish watershed restoration and road relocation activities in cooperation with a private landowner. There is a need to relocate a segment of the existing BLM Exclusive Easement for Timber Access, Case # OROR 56920, for the following joint objectives:

- Achieve Klamath Falls Resource Area (KFRA) 1995 Resource Management Plan (RMP) transportation management standards and objectives (USDI-BLM 1995)

- Meet BLM water quality management goals by implementing RMP Road Best Management Practices (BMPs). See section VII of this environmental assessment (EA)

High intensity storm events in recent years have resulted in road inundation and overtopping of culverts on the road. This portion of the road receives maintenance every other year. Recent inundation has resulted from aggradation of the meadow over time. BLM has a need to reduce unnecessary road maintenance costs, reduce the number of stream crossings, and decrease the water quality and sediment impacts associated with roads located close to streams. To achieve

these objectives, BLM will need to acquire a new road easement at the location of the new road alignment on private holdings and relinquish the existing road easement. The existing road segment in the stream and meadow would need to be decommissioned and rehabilitated to achieve water quality and habitat objectives.

Conformance with Applicable Land Use Plan

This project has been designed to comply with the land use allocations, management direction, and objectives of the 1995 Klamath Falls Resource Area Resource Management Plan (1995 KFRA RMP). The project design and recommendations for implementation are contained in the ROD/RMP and a number of other supporting documents including:

• Final Environmental Impact Statement, Vegetation Treatment on BLM Lands in Thirteen Western States (1991).
• Standards for Land Health for Lands Administered by the Bureau of Land Management in the States of Oregon and Washington (1998)
• Clean Water Act of 1972 (as amended in 1977 and 1987)
•The Wyden Amendment (Public Law 109-54, Section 434) authorizes the BLM to enter into cooperative agreements to benefit resources within watersheds on BLM lands. Agreements may be with willing Federal, Tribal, State, and local governments, private and nonprofit entities, and landowners to conduct activities on public or private lands for the purpose of protection, restoration, and enhancement of fish and wildlife habitat and other resources.

Public Involvement

A scoping letter requesting comments on the proposal was mailed to 70 adjacent landowners, agencies, and interested parties on May 29, 2013. No comments were received.

II. ALTERNATIVES INCLUDING THE PROPOSED ACTION

Alternative 1 – Proposed Action

1. Acquisition of new easement at the proposed new road location.
2. Road construction of approximately 0.6 miles (3170 feet) in acquired easement location in upland habitat with one stream crossing structure and drainage structures that meet the following BLM road specifications:

- Clearing width up to 40 Feet
- Subgrade width 20 Feet
- Ditch width 2-5 Feet
- Final surface width 14 Feet
- Base coarse 4” lift of cinder (28 Cubic yards/Station)
- Surface coarse 4” lift of cinder or crushed aggregate (25 Cubic yards/Station)
- Total area: 0. 6 miles =3170 feet. (3170 ft x 40 foot clearing width = 2.9 acres), not including turnouts.

3. Rehabilitation of existing easement by removal of existing road bed and surfacing, filling of cutbanks, ditches, and culvert removal. Site rehabilitation includes erosion control, planting, reseeding with native perennial grasses and forbs in disturbed areas, and reconstruction of historic stream flow paths.

4. Relinquishment of a segment of the existing BLM easement in part located in T.38 S., R.14 E., Section 29, SW1/4, W.M. This section of the Easement, approximately 0.6 miles, will be relinquished to the landowner of record.

Alternative 2 – No Action
This alternative would consist of continuation of the current situation.

Other Alternatives Considered But Dropped From Analysis

Build up Existing Road Bed to prevent washing out of road bed. Because the meadow is above the elevation grade of the road in several places, water collects and flows over the road surface during rain and snow melt events. This would solve the problem of the road being below the grade of the meadow, however this would not meet the restoration and maintenance objectives since the stream path would still need to cross the road multiple times, requiring the installation and resetting and installing multiple large culverts. Additionally, this would require maintenance of a ditch and straightening of the stream channel, which would continue to be a source of sediment and channel instability. Therefore, while this approach could be engineered to convey water efficiently through the meadow, landowner and BLM objectives for achieving and stream channel and meadow restoration would not be met, and it would not meet the purpose and need for the project.

III. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

Watershed –Affected Environment
The proposed project is within the Gerber Reservoir watershed in the Lost River Sub-basin. The unnamed stream that flows through the meadow flows into Barnes Creek, a tributary to Gerber Reservoir. Gerber reservoir is included on the 2006 Oregon DEQ 303(d) list of water quality-impaired waterbodies for nutrients, which is influenced by sediments. The current road alignment, with three stream crossings, contributes sediment to the meadow an unnamed stream, Barnes Creek, and Gerber Reservoir. The aggradation of the meadow causes frequent inundation and erosion of the roadbed, leading to the need for seven culverts and a trench along the 0.6 miles of road in order to try to properly drain the area. Periodic flooding events are contributing sediment to the meadow and stream and deterioration of downstream water quality.

Watershed – Environmental Consequences

Alternative 1 – Proposed Action
Alternative 1 would restore hydrologic function by allowing the stream to flow unobstructed through the meadow. The decommissioning and rehabilitation of the road would improve the water quality and reduce sediment impacts to the meadow and downstream water sources (an unnamed stream, Barnes Creek, and Gerber Reservoir) associated with the current road. Relocating the road away from the meadow would reduce the number of stream crossings from three to one. The reduction of stream crossings and elimination of frequent inundation and erosion of the road bed would reduce the number of culverts and decrease road maintenance expenses. Compacted and disturbed areas would be de-compacted and erosion control measures implemented including mulching, seeding, and biodegradeable geotextiles.

Watershed discharge estimates were made for the 163-acre drainage area of the sole, resulting stream crossing using the Oregon Water Resources Department's peak flow estimation tool. This is a web-based tool that incorporates prediction equations from Cooper 2006. The crossing would be designed to pass the estimated peak flow of 16.2 cfs for the 100-year flood (Table 1.)

Table 1. Results of Peak Flow Estimation Tool Using Equations from Cooper 2006

Return Period (Years)	Peak Flow (cfs)	95 % Confidence Limits	
		Lower cfs	Upper cfs
2	6.3	2.1	19.2
5	8.8	3.6	21.4
10	10.5	4.6	24.1
20	12.3	5.5	27.5
25	12.8	5.6	29.3
50	14.5	6.3	33.6
100	16.2	6.7	39.0
500	19.8	7.1	55.3
1000	21.4	7.1	64.6

New road construction and rehabilitation of the old road and stream channel will cause short-term sedimentation due to soil disturbance. Adherence to the Road and Stream restoration BMPs listed in Section VII will minimize sedimentation effects on water quality and aquatic habitat values. Long-term effects will range beneficial to negligible since BMPs will allow for revegetation and natural unobstructed drainage processes to occur.

Alternative 2 – No Action

No Action would result in continued water quality impairment and sediment delivery to the contributes sediment to the meadow , and an unnamed stream, Barnes Creek, and Gerber Reservoir The three stream crossings would persist in requiring the use of the current seven culverts. Unnecessary road maintenance costs would continue due to frequent inundation and erosion of the roadbed and the culverts.

Soils – Affected Environment

Within the project area, the *2001 Interim Soil Survey of the Gerber Block* identified three upland soil map units consisting of Norcross, Dranket, and Schnipps as the dominant soil types (see Table 2). Norcross soils are present in all of the three map units. They display very cobbly to extremely cobbly ashy loam surfaces over shrink-swell clay subsoils. Typically, Norcross soils are about 20 inches deep. The Dranket soil types are similar to Norcross except they are slightly deeper to an impervious layer and contain less ash. Schnipps soils are the deepest of the dominant soil types and contain less clay in the subsoil than Norcross or Dranket. Table 2 displays the three map units and a few select unit characteristics.

Table 2. Soil Map Units in the Stove Springs CCC Road Realignment Project Area

Soil Map Unit	Slopes	Soil depth (inches)	Natural drainage class	Runoff potential	Potential source of roadfill
300A- Norcross very cobbly loam	0-10%	20	Well drained	High	Poor
310A--Norcross, extremely cobbly-Dranket-Norcross complex	0-10%	20-25	Well drained	High	Poor
510B--Schnipps-Norcross complex	2-15%	20-49	Well drained	High to Very High	Fair-Poor

The soil survey indicates the existing roadway crosses soil map units 310A and 510B. Field verification in 2013 by BLM staff, however, confirms the road is located within a riparian zone that corresponds more closely to map unit 615A. This unit consists of poorly drained soils of meadows and drainage ways. The existing road design and location through this area of poorly drained soils does not allow sufficient drainage of the road surface, or provide adequate stream crossing. Periodic flooding events are contributing to soil movement and deterioration of water quality.

The proposed road realignment would traverse all three soil map units. Soils in the area of the proposed realignment are all in upland landscape positions, and are consistent with the soil survey mapped units.

Soils – Environmental Consequences

Alternative 1-Proposed Action

Under Alternative 1, the proposed action, slightly more than one acre of ground would be disturbed to enable construction of the new road segment. Although road construction creates a permanent removal of land from productivity, the beneficial effects of realigning the road would offset the adverse impacts of new road construction. The new road would be relocated to an upland landscape position, incorporating adequate drainage into the design. The riparian area and the soils within that zone would no longer be adversely impacted by the roadway and associated road maintenance activities. Hydrologic function and soil productivity within the riparian area would improve in the area currently impacted by the existing road. Road realignment from the riparian area into the uplands would be consistent with the 1995 KFRA ROD/RMP, which recommends avoiding fragile groundwater sites when planning roads, and locating the roads on well-drained soil types.

Within the realignment area, the soils are rated “high to very high” for potential runoff.

Alternative 2 – No Action

If no action is taken, the existing road would remain within the riparian zone. Meadow and drainage way function would continue to be adversely impacted by the roadbed. Erosion would continue to occur within the riparian area. Conversely, soil disturbances resulting from construction of the new road would not occur.

Vegetation – Affected Environment

The surrounding area of Gerber Road and the CCC Road contain several populations of a rare carnivorous plant, the Fringed campion, *Silene nuda* ssp. *insectivora*. This species is on List 4 from the Oregon Biodiversity Information Center (ORBIC), which “contains taxa of concern which are not currently threatened or endangered. This list includes taxa which are very rare but are currently secure, as well as taxa which are declining in numbers or habitat, but are still too common to be proposed as threatened or endangered.” *Silene nuda* ssp. *insectivora* only occurs in Klamath and Lake Counties of Oregon, and has been recently removed from the special status species list. The existing road that would be decommissioned runs through a wet meadow, which is habitat for this rare plant species. No populations of this species were found during springtime surveys in 2013.

Parts of the area where the proposed new road would be constructed contain sparse populations of the invasive annual grass, *Ventenata dubia*. The ventenata exists near the wet meadow and extends southward into BLM land. Ventenata is beginning to replace native perennial grasses and forbs along roadsides and in upland sagebrush habitat in the western United States. In addition to having minimal forage value for livestock and wildlife, ventenata is also undesirable because its shallow root system may cause the soil to be more prone to erosion. Over time, decline of productivity and land value occurs. Also, the existing road has roadside populations of cheatgrass, *Bromus tectorum*. Most of the area where the proposed road will be constructed contains a healthy sagebrush community of plants with native bunch grasses and several species of forbs.

Vegetation – Environmental Consequences

Alternative 1 – Proposed Action
Under Alternative 1, the existing road would be removed and the wet meadow will be restored and habitat for vernally-dependent plant species would be improved. This includes habitat for the rare plant *Silene nuda* ssp. *insectivora*. The proposed road construction would not impact any special status species populations because none were found in surveys.

The existing road removal and rehab of wet meadow may leave approximately 3 acres of disturbed land open for invasion by noxious weeds. Cheatgrass was found along roadsides of the existing road location, and it is likely to invade in disturbed areas left by road removal. Ventenata was also found nearby, and may also likely invade disturbed areas. The proposed road location has a sparse population of ventenata near the wet meadow that has the potential to invade all areas left with disturbance. Ventenata will likely grow along the proposed roadside and the road could act as a potential conduit for seed dispersal. Reseeding with native perennial grasses and forbs in disturbed areas would be beneficial to the recovery of disturbed vegetation.

Alternative 2 – No Action
Under Alternative 2, no action would take place and the current habitat condition for vernally dependent plants will remain the same. Noxious weed dispersal would remain the same; populations of invasive plants will expand from their current locations at a slower rate than in Alternative 1, due to lack of disturbance.

Wildlife - Affected Environment

The existing road that would be decommissioned and restored runs within, along, and through a wet drainage. The road crosses the stream in several locations. The drainage floor is essentially a wet meadow with almost complete coverage of grasses, sedges, rushes and other low herbaceous plants. There are scattered willow clumps present in the drainage and along the road in places. Healthy, functioning, riparian areas and wet meadow habitats are known to be centers of biological diversity, and are very rare habitat types in the arid landscapes of the desert west. The existing road currently occupies approximately 3 acres of ground that would otherwise be in this wet meadow habitat type.

The upland habitat where the new road is proposed is presently in a low sage and big sage steppe habitat type with abundant surface rock between the sage plants. Because of the general lack of moisture, and the abundance of surface rock, herbaceous vegetation is sparse between the sage

plants and consists mostly of forbs. This "sage-scabrock" habitat type occurs in great abundance in the immediate area of the proposed project and across the arid west in general.

No special status wildlife species are known or suspected to occur either on the existing road ROW that would be restored, or on the adjacent private lands where the new road is proposed. There is no known or suspected special status species habitat present at either location. Special status species surveys are not necessary and have not been conducted.

Birds of conservation concern from the U.S. Fish and Wildlife Bird Conservation Region (BCR) list of 2008 that may be in the area and that are known to use the habitat types present include: sage sparrow, brewer's sparrow, loggerhead shrike, willow flycatcher.

Wildlife - Environmental Consequences

Alternative 1 – Proposed Action
This alternative would essentially trade three acres of a locally and regionally abundant habitat type (mixed sage scab-rock) for the restoration of three acres of a locally and regionally scarce habitat type (riparian area and wet meadow). Habitat quantity for a variety of species known to use riparian wet meadow habitat type would be increased by three acres, and habitat quality of the entire meadow would be increased by removal of the road and its associated disturbance of the meadow habitat. The loss of three acres of sage scab rock habitat is insignificant to wildlife in the area.

The overall effect of this project is expected to be beneficial to wildlife in general and would have no effect on any special status or BCR species populations.

Alternative 2 - No Action
Under the No Action Alternative, the benefits of restoration of three acres of wet meadow would not accrue, and three acres of sage scab rock habitat would not be lost. This alternative is not expected to have any effect on special status or BCR list species populations.

Aquatic Species – Affected Environment
The Stove Springs drainage consists of a small complex of spring-fed channels. It is currently considered non-fishbearing. The drainage flows into Barnes Creek on private land, which has been channelized and essentially acts as a conveyance for irrigation water. Barnes Creek is however fishbearing and is at least seasonally occupied by fish and other aquatic species, including the Endangered Species Act (ESA) listed shortnose sucker (See Table 3 and Table 4). The adfluvial shortnose sucker actively migrates into and spawns in tributaries of Gerber Reservoir, including Barnes Creek in April to early May (USFWS 2007). Although, adult sucker numbers in Barnes Creek are lower than other tributaries including Barnes Valley, Long Branch, Ben Hall and Pitch Log Creeks (BLM, 2013). Sucker larvae emerge sometime between May to early June and passively move downstream to lakes for rearing (Cooperman and Markle 2003). For additional information regarding the shortnose sucker and Critical Habitat, see the ESA Consultation Section.

Barnes Creek flows into Gerber Reservoir which is regulated by Gerber Dam mainly for irrigation and is subject to extreme drawdown during dry years. Gerber Reservoir contains a diverse assemblage of aquatic species, most of which are listed in Tables 3 and 4.

Surveys conducted by Department of Interior personnel have documented a variety of aquatic species including shortnose sucker, Klamath largescale sucker, redband trout, Klamath speckled dace, tui chub, blue chub, lamprey, sculpin (Table 3), and a suite of non-native fish (Table 4) in these waterbodies (BLM, 2009).

Table 3. Native Fish Species Potentially Affected by the Proposed Action in the Analysis Area

Common Name	Scientific Name	BLM Status	Documented
Shortnose Sucker	*Chasmistes brevirostris*	Federally Endangered*	Gerber Reservoir, Barnes Creek
Klamath Largescale Sucker	*Catostomus snyderi*	None	Gerber Reservoir, Barnes Creek
Redband Trout	*Oncorhynchus mykiss*	None	Historically in Gerber Reservoir
Klamath Speckled Dace	*Rhynichthys osculus klamathensis*	None	Barnes Creek
Tui Chub	*Gila bicolor*	None	Gerber Reservoir, Barnes Creek
Blue Chub	*Gila coerulea*	None	Gerber Reservoir
Lamprey	*Lampetra sp.*	None	Gerber Reservoir
Sculpin	*Cottus sp.*	None	Gerber Reservoir
*Federally Endangered – Those species listed under the Endangered Species Act as Endangered			

Table 4. Non-native Fish Species Potentially Affected by the Proposed Action in Analysis Area

Common Name	Scientific Name	Status	Documented
Largemouth Bass	*Micropterus salmoides*	Gamefish	Gerber Reservoir
Yellow Perch	*Perca flavescens*	Gamefish	Gerber Reservoir
Pumpkinseed Sunfish	*Lepomis gibbosus*	Gamefish	Gerber Reservoir
White Crappie	*Pomoxis annularis*	Gamefish	Gerber Reservoir
Black Crappie	*Pomoxis nigromaculatus*	Gamefish	Gerber Reservoir
Brown Bullhead	*Ameiurus nebulosus*	Gamefish	Gerber Reservoir
Fathead Minnow	*Pimephales promelas*	Invasive	Gerber Reservoir, Barnes Creek

The upland habitat where the new road is proposed is presently in a low sage and big sage steppe habitat type with abundant surface rock between the shrubs. It crosses one intermittent drainage, however, there is no habitat for aquatic species and therefore no foreseeable impact to aquatic species or habitat if Road and other BMPs designed to minimize sedimentation listed in Section VII are adhered to.

Aquatic Species – Environmental Consequences

Alternative 1 – Proposed Action

The Stove Springs drainage within the analysis area is not currently considered fish-bearing by the BLM. Due to the extremely altered condition of the channel and meadow, and the streams intermittent nature, it likely provides very little suitable habitat for aquatic species. As stated in the Watershed Section, the altered stream channel delivers sediment to Barnes Creek and therefore Gerber Reservoir. Sedimentation negatively affects water quality and spawning habitat for some aquatic species, especially during peak flow events. The proposed project would result in the decommissioning/obliteration of the current road, removal of all road material and culverts, and restoration of the stream channel, floodplain and meadow. This would create a

short-term pulse of sediment contribution to Barnes Creek and waterbodies downstream of the project. In the long-term, sediment would be reduced to levels similar to before the road was constructed in the meadow. Construction of the new road upslope would have no measurable effect on aquatic habitat or water quality in Barnes Creek or Gerber Reservoir due to adherence of Road BMPs applicable to new road construction and maintenance. The new road construction will not be discussed further in the aquatic species or ESA consultation sections.

Decommissioning and site rehabilitation of 0.6 miles of road would also adhere to BLM road BMPs applicable to road decommissioning work listed in Section VII. Project work would be done during late summer/early fall when water levels are low, or dry and sediment delivery potential is low. ESA consultation will be completed by the USFWS. No direct impacts are predicted to shortnose suckers or Critical Habitat from the proposed project.

Alternative 2 – No Action

No Action would result in continued water quality impairment and sediment delivery to the Stove Springs drainage and therefore Barnes Creek, and Gerber Reservoir. These affects would continue to negatively impact aquatic species and their habitat. The three stream crossings would persist in requiring the use of the current seven culverts. Unnecessary road maintenance costs would continue due to frequent inundation and erosion of the roadbed and the culverts.

Livestock Grazing

The proposed project is located on private property. No BLM-administered grazing authorizations would be affected by the project.

Cultural Resources- Affected Environment

Native American use of the area spans many millennia. The region was most likely used by the Modoc or Klamath peoples. On a map showing the Modoc territory, Ray (1963) shows the Modoc encompassing the project area. Ray (1963) notes that the Modoc territory was divided into three geographic areas that were named after those who lived in those areas. Of these three areas, the Kokiwas (people of the far out country) lived within the project area.

Historic contact between the Native American tribes and Euro-Americans began around the 1820s and culminated with the Klamath Lake Treaty of 1864 in which the lands around the project area were ceded to the United States by the Klamath Tribes (Minor et al. 1979). The Klamath Tribes consists of the closely related Klamath, Modoc, and Yahooskin peoples.

Euro-American exploration within the analysis area began in 1843 when a band of “free trappers,” led by Old Bill Williams, explored the Lost River region. Euro-American settlement occurred adjacent to the project area with the promotion of free land under the 1850 Oregon Donation Land Act and the later 1862 Homestead Act. Homesteaders pursued sheep and cattle ranching. The Gerber family was the first to establish a ranch at the northern end of the Gerber Block in 1880, hence the name of the area. The Civilian Conservation Corps (CCC) improved the landscape within the analysis area for grazing in the 1930s. The CCC built roads, spring developments, stock ponds, corrals and even a telephone line. In 1935, the Gerber block became the first grazing district in Oregon and the United States (Bonanza Grazing District No.1) under the 1933 Taylor Grazing Act. In 1946, the General Land Office was merged with the Grazing

Service to create the Bureau of Land Management (Beckham 2000). The BLM has managed the area ever since.

Additional information about cultural resources in the analysis area may be found in various overviews of the history and prehistory of the region (Anderson 1994, Beckham 2000, Follansbee and Pollack 1978, Minor 1979, Ray 1963, and Spier 1930).

Cultural resources have been inventoried and will be avoided by project design.

Cultural Resources – Environmental Consequences

Alternative 1 – Proposed Action
The proposed portion of the 0.6 miles of road that would be relinquished is part of the road system known as "CCC Road" which is a road the CCC built in the 1930s as part of their range improvement efforts. While this road has been actively utilized since the 1930s the road in this project area maintains little to no integrity to the overall historic feel of the road.

Cultural resources have been inventoried and will be avoided by project design.

Alternative 2 – No Action
No sites would be impacted.

Recreation—Affected Environment

The CCC Road provides access to opportunities for dispersed recreation such as hunting, fishing, off-highway vehicle driving, camping, sightseeing, watchable wildlife viewing and mountain biking. The CCC Road provides the primary vehicle access between the developed recreation facilities of the Gerber Recreation Area and the BLM lands in the northwest corner of the Gerber block. The BLM land in the vicinity of the analysis area currently receives light dispersed recreation use during spring, summer and fall. Roads in the area that are seasonally closed or impassable due to muddy or snowy road conditions in the winter months limit winter recreation use. For additional information about recreation resources in the analysis area, reference the Gerber-Willow Valley Watershed Assessment.

Recreation—Environmental Consequences

Alternative 1 – Proposed Action
Only temporary, minimal disturbances to recreation visitors may occur during road construction and decommissioning activities. Minor, short-term disturbances to recreationists from noise, dust, and smoke associated with road work in the project area could be expected. The rerouting of the road onto well drained uplands would positively impact recreational access by lessening or eliminating wet and muddy conditions from that section of road.

Alternative 2 – No Action
With no action, the CCC road would continue to be wet and muddy seasonally which may hinder access to the area by visitors.

Visual Resources—Affected Environment

The BLM has a basic stewardship responsibility to identify and protect visual values on public lands. This is accomplished through the Visual Resource Management (VRM) program. Through this program, all BLM lands are inventoried and managed in specific VRM classes. BLM lands within the analysis area contain a variety of land forms and scenic/aesthetic qualities. All of the lands in the immediate vicinity of the analysis area are managed as VRM Class II. Under VRM Class II, lands are managed for low levels of change to the characteristic landscape. Management activities may be seen but should not attract attention of the casual observer.

Visual Resources—Environmental Consequences

Alternative 1 – Proposed Action

The Proposed road construction and decommissioning activities would have little to no negative impacts to visual resources. Thorough, successful restoration of the decommissioned road section would avoid or reduce overall impacts to an acceptable level and would maintain VRM Class II objectives.

Alternative 2 – No Action

No changes are expected to visual resources if the No Action Alternative was selected.

Hazardous Materials—Affected Environment

To qualify for protection from CERCLA liability, BLM policy states that an Environmental Site Assessment (ESA) is required when establishing or relinquishing an interest in real property. Easements are considered real property, and thus are subject to BLM policy regarding land acquisitions and federal laws relating to land disposals. In both cases, the purpose of the ESA is to identify hazardous substances, petroleum products, solid wastes, physical hazards, or other issues affecting the use of the property. The level of analysis of the ESA is determined by the likelihood of contamination present on the property in question.

Real property acquisitions are based upon BLM policy and procedures as described in Handbook H-2000-01 Pre-Acquisition Environmental Site Assessments. Land acquisitions where the likelihood of contamination is low may complete a Pre-Acquisition Liability Survey (PALS) level ESA prior to acquiring an interest in the real property. If the PALS, past uses or other evidence indicates there is a potential for or identification of contaminants onsite, a Phase I ESA will be performed. Phase I ESAs present a more intensive level of analysis than the PALS.

Guidance for real property disposals is provided in BLM Handbook H 2000-02 Environmental Site Assessments for Disposal of Real Property. Handbook 2000-02 describes an ESA process intended to comply with the “Notice” requirements of CERCLA 120(h) and 40 CFR Part 373; and the “Disclosure” requirements of the BLM policy to recognize environmental conditions, solid waste, physical hazards, and other issues that affect use of the property or that could impose liability on the conveyee. Similar to the PALS process, an Initial Assessment level of analysis may be performed on property identified for disposal if the likelihood of contamination is low but potential of human intrusion may have resulted in onsite contamination. If an IA indicates no contamination on the site, a Phase I ESA is not required.

Due to the nature of the Stove Springs road realignment project, it was determined that a PALS ESA for acquisition and an IA analysis of the disposed property would provide sufficient levels of analysis. Should the PALS and/or AI indicate there is a potential for contamination or the presence of hazardous substances, petroleum products, solid wastes, physical hazards, or other issues affecting the use of the property, a Phase I ESA would be required.

In accordance with CFR 312.20, a PALS level ESA requires interviews, record reviews, and site reconnaissance be conducted or updated within 180 days of and prior to the date of an acquisition of the subject property. Likewise, for the disposal of the property in question, the Initial Assessment must be completed within 12 months prior to the date of the disposal. To avoid multiple iterations of the acquisition and disposal reports, the PALS and IA will be completed at a time later in the process. Any potential environmental issues or liabilities would be identified and addressed prior to acquisition of the new and disposal of the existing road easements.

IV. OTHER RESOURCES

Resource values that are either not present in the project area, or would not be affected by any of the proposed alternatives are: floodplains, wilderness study areas (WSAs), areas of critical environmental concern (ACECs), research natural areas (RNAs), paleontological resources, prime or unique farmlands, wild and scenic rivers, lands, air quality, and minerals (modify as appropriate). There are no known hazardous waste sites in the analysis area. For either alternative, no direct or indirect disproportionately high or adverse human health or environmental effects to minority or low income populations are expected to result from implementation of the proposed action or the alternatives.

V. CONSULTATION AND COORDINATION

Endangered Species Act (ESA) Consultation

The shortnose sucker (*Chasmistes brevirostris*) was listed as endangered in 1988 under the ESA (USDI FWS, 1988). This species inhabits lakes and streams in the Klamath Basin and were once abundant in the Lost River watershed, Upper Klamath Lake, and its tributaries. Gerber Reservoir and its tributaries were identified as Unit 2 in the Designated Critical Habitat determination rule for shortnose suckers. This is the only major habitat area inhabited by shortnose suckers, but not Lost River suckers (USFWS, 2011). The Oregon portion of Designated Critical Habitat Unit 2 includes the waters of Gerber Reservoir below the full pool reservoir line, and a large portion of the Dry Prairie, Ben Hall, Barnes, Barnes Valley, Pitchlog and Long Branch Creeks (within bankfull of designated stream segments) (USFWS, 2011). Miller Creek is not part of the Designated Critical Habitat Unit 2, but is currently considered occupied by the shortnose sucker.

The U.S. Fish and Wildlife Service Partners Program (USFWS) is a contributing partner to this project. In April 2013, BLM met with the USFWS regarding aquatic threatened or endangered species. Both agencies agreed that the USFWS would cover the ESA consultation for effects of the proposed action on shortnose sucker and associated Critical Habitat through intra-agency consultation (see USFWS Intra-agency Consultation in the project record).

No other listed species or designated critical habitat occurs within the project area or would be affected from the proposed project. Therefore, a "No Effect" determination was made for all other listed species and designated critical habitat.

Tribal Consultation

Tribal consultation has been on-going with The Klamath Tribes since February of 2013. The tribe is supportive of making road systems safer for the public and restoring watersheds.

LIST OF PREPARERS

Preparers	Resource Responsibility
Andy Hamilton	Project Lead
Chelsea Aquino	Hydrology, Water Quality, Riparian
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Johanna Blanchard	Botany- Noxious Weeds, Special Status Plant Species
Matt Broyles	Wildlife
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Brian McCarty	Roads/Engineering
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Agencies/Groups/Individuals Contacted

U. S. Forest Service, Bureau of Reclamation, U.S. Fish and Wildlife Service, The Klamath Tribes, Adjacent landowners, Grazing permittees, and other interested groups and individuals.

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VII. BEST MANAGEMENT PRACTICES

Road Best Management Practices (BMPs)

The KFRA RMP (1995) was updated in 2011 to improve BMPs in order to reduce sediment delivery from BLM roads in Oregon, as per Instruction Memorandum No. OR-2011-074. The complete list can be viewed on the BLM website at:
http://www.blm.gov/or/districts/lakeview/plans/files/BMPPlanMaintMemo1995_120109.pdf
The following Road BMPs are applicable to this project.

New Road Construction

Locate temporary and permanent roads and landings on stable locations, e.g., ridge tops, stable benches or flats, and gentle-to-moderate side slopes. Minimize construction on steep slopes, slide areas and high landslide hazard locations.

Locate temporary and permanent road construction or improvement to minimize the number of stream crossings.

Avoid locating roads and landings in wetlands, riparian management areas, floodplains and waters of the state. Avoid locating landings in areas that can contribute to dry draws and swales.

Design road cut and fill slopes with stable angles, to minimize erosion and prevent slope failure.

Design roads to the minimum width needed for the intended use as referenced in BLM Manual 9113.

Construct road fills to prevent fill failure using inorganic material, compaction, buttressing, sub-surface drainage, rock facing or other effective means.

Design culverts, bridges, and other stream crossings for the 100-year flood event including allowance for bed load and anticipated floatable debris.

Minimize fill volumes at permanent and temporary stream crossings by restricting width and height of fill to amounts needed for safe travel and adequate cover for culverts. For deep fills (generally greater than 15 feet deep) incorporate additional design criteria (e.g., rock blankets, buttressing, bioengineering techniques) to reduce the susceptibility of fill failures.

Locate stream crossing culverts on well defined, unobstructed, and straight reaches of stream. Locate these crossings as close to perpendicular to the streamflow as stream allows. When structure cannot be aligned perpendicular, provide inlet and outlet structures that protect fill and minimize bank erosion. Choose crossings that have well defined stream channels with erosion resistant bed and banks.

On new construction, install culverts at the natural stream grade.

Use stream crossing protection techniques to allow flood water and debris to flow over the top of the road prism without the loss of the fill or diversion of streamflow. This protection could include hardening crossings, armoring fills, dipping grades, oversizing culverts, hardening inlets and outlets, and lowering the fill height.

Place instream grade control structures above or below the crossing structure, if necessary, to prevent stream headcutting, culvert undermining and downstream sedimentation. Employ bioengineering measures (e.g., large wood for gradient control) to protect the stability of the streambed and banks.

Prevent culvert plugging and failure in areas of active debris movement with measures such as beveled culvert inlets, flared inlets, wingwalls, over-sized culverts, trash racks or slotted risers.

Use permanent low water fords in debris-flow susceptible streams (e.g., concrete, well anchored concrete mats, etc.).

Design roads crossing low-lying areas so that water does not pond on the upslope side of the road. Provide cross drains at short intervals to ensure free drainage.

Use no-fill structures (e.g., portable mats, temporary bridges, or improved hardened crossings) for temporary stream crossings. When not practicable, design temporary stream crossings with the least amount of fill and construct with coarse material to facilitate removal upon completion.

Install underdrain structures when roads cross or expose springs, seeps, or or wet areas rather than allowing intercepted water to flow downgradient in ditchlines.

Effectively drain the road surface by using crowning, insloping or outsloping , grade reversals (rolling dips) and waterbars or a combination of these methods. Avoid concentrated discharge onto fill slopes unless the fill slopes are stable and erosion proofed.

Outslope temporary and permanent low volume roads to provide surface drainage on road gradients up to 6% unless there is a traffic hazard from the road shape.

Consider using broad-based drainage dips and/or lead-off ditches in lieu of cross drains for low volume roads. Locate these surface water drainage measures where they won't drain into wetlands, riparian management areas, floodplains and waters of the state.

Avoid use of outside road berms unless designed to protect road fills. If road berms are used, breach to accommodate drainage where fill slopes are stable.

Construct variable road grades and alignments (e.g., roll the grade, grade breaks) which limit water concentration, velocity, flow distance and associated stream power.

Design stream crossings to prevent diversion of water from streams into downgrade road ditches or down road surfaces.

Disconnect the road runoff to the stream channel by outsloping the road approach. If outsloping is not possible, use runoff control, erosion control and sediment containment measures. These may include using additional cross drain culverts, ditch lining, and catchment basins. Minimize ditch flow conveyance to stream through cross drain placement above stream crossing.

Locate cross drains to prevent or minimize runoff and sediment conveyance to wetlands, riparian management areas, floodplains and waters of the state. Implement sediment reduction techniques such as settling basins, brush filters, sediment fences and check dams to prevent or minimize sediment conveyance.

Space cross drain culverts at intervals sufficient to prevent water volume concentration and accelerated ditch erosion. At a minimum, space cross drains at intervals referred to in the BLM Road Design Handbook 9113-1, Illustration 11 -"Spacing for Drainage Laterals". Increase cross drain frequency through erodible soils, steep grades, and unstable areas.

Choose cross drain culvert diameter and type according to predicted ditch flow, debris and bedload passage expected from the ditch. Minimum diameter is 18 inches.

Locate surface water drainage measures (e.g., cross drain culverts, rolling dips, water bars) where water flow will be released on convex slopes or other stable and non-erosive areas that will absorb road drainage and prevent sediment flows from reaching wetlands, riparian management areas, floodplains and waters of the state. Where possible locate surface water drainage structures above road segments with steeper downhill grade.

Discharge cross drain culverts at ground level on non-erodible material.

Skew cross drain culverts 45 to 60 degrees from the ditchline as referenced in BLM Road Design Handbook 9113-1 and provide pipe gradient slightly greater than ditch gradient to reduce erosion at cross drain inlet.

Use slotted risers, over-sized culverts or build catch basins where floatable debris or sediments may plug cross drain culverts.

Locate waste disposal areas outside wetlands, riparian management areas, floodplains and unstable areas to minimize risk of sediment delivery to waters of the state. Apply surface erosion control prior to the wet season. Prevent overloading areas which may become unstable. Confine pioneer roads to the construction limits of the permanent roadway to reduce the amount of area disturbed and avoid deposition in wetlands, riparian management areas, floodplains and waters of the state. Install temporary drainage, erosion, and sediment control structures. Storm proof or close pioneer roads prior to the onset of the wet season.

Provide for unobstructed flow at culvert inlets and within ditch lines during and upon completion of road construction prior to the wet season.

Use temporary sediment control measures (e.g., check dams, silt fencing, bark bags, filter strips and mulch) to slow runoff and contain sediment from road construction areas. Remove any

accumulated sediment and the control measures when work or haul is complete. When long term structrual sediment control measures are incorporated into the final erosion control plan, remove any accumulated sediment to retain capacity of the control measure.

Conduct all nonemergency in-water work during the ODFW instream work window.

Limit activities and access points of mechanized equipment to streambank areas or temporary platforms when installing or removing structures. Keep equipment activity in the stream channel to an absolute minimum.

Install stream crossing structures before heavy equipment moves beyond the crossing area. Remove temporary crossing structures promptly after use. Follow practices under the Closure/Decommissioning section for removing stream crossing drainage structures and reestablishing the natural drainage.

Harden low water ford approaches with durable materials. Provide cross drainage on approaches. Locate equipment washing sites in areas with no potential for runoff into wetlands, riparian management areas, floodplains and waters of the state. Do not use solvents or detergents to clean equipment on site.

Limit road and landing construction, reconstruction, or renovation activities to the dry season. Keep erosion control measures concurrent with ground disturbance to allow immediate stormproofing.

Apply native seed and certified weed free mulch to cut and fill slopes, ditchlines, and waste disposal sites with the potential for sediment delivery to wetlands, riparian management areas, floodplains and waters of the state. Apply upon completion of construction and as early as possible to increase germination and growth. Reseed if necessary to accomplish erosion control. Place sediment-trapping materials or structures such as straw bales, jute netting, or sediment basins at the base of newly constructed fill or side slopes where sediment could be transported to waters of the state. Keep materials away from culvert outlets.

Use biotechnical stabilization and soil bioengineering techniques to control bank erosion (e.g., commercially produced matting and blankets, live plants or cuttings, dead plant material, rock or other inert structure).

Suspend ground-disturbing activity if projected forecasted rain will saturate soils to the extent that there is potential for movement of sediment from the road to wetlands, floodplains and waters of the state. Cover or temporarily stabilize exposed soils during work suspension. Upon completion of ground disturbing activities, immediately stabilize fill material over stream crossing structures. Measures could include but not limited to erosion control blankets and mats, soil binders, soil tackifiers, slash placement.

Apply water or approved road surface stabilizers/dust control additives to reduce surfacing material loss and buildup of fine sediment that can enter into wetlands, floodplains and waters of

the state. Prevent entry of road surface stabilizers/dust control additives into waters of the state during application.

Road Obliteration and Stream Crossing Removal

Do not sidecast loose ditch or surface material where it can enter wetlands, riparian management areas, floodplains and waters of the state.

Place excavated material from removed stream crossings on stable ground outside of wetlands, riparian management areas, floodplains and waters of the state. In some cases material could be used for recontouring old road cuts or be spread across roadbed and treated to prevent erosion.

Reestablish stream crossings to the natural stream gradient. Excavate sideslopes back to the natural bank profile. Reestablish natural channel width and floodplain.
On each side of a stream crossing, construct waterbars or cross ditches that will remain maintenance free.

Following culvert removal and prior to the wet season, apply erosion control and sediment trapping measures (e.g., seeding, mulching, straw bales, jute netting, native vegetative cuttings) where sediment can be delivered into wetlands, riparian management areas, floodplains and waters of the state.

Implement decompaction measures, including ripping or subsoiling to an effective depth. Treat compacted areas including the roadbed, landings, construction areas, and spoils sites.

After decompacting the road surface, pull back unstable road fill and either end-haul or recontour to the natural slopes.

Applying gravel lifts or asphalt road surfacing at stream crossing approaches, and cleaning and armoring.

Stream Restoration and Streambank Stabilization

Construct geomorphically appropriate stream channels and floodplains within a watershed and reach context.

Design actions to restore floodplain characteristics—elevation, width, gradient, length, and roughness—in a manner that closely mimics, to the extent possible, those that would naturally occur at that stream and valley type.

To the greatest degree possible, remove non-native fill material from the channel and floodplain to an upland site.

When necessary, loosen compacted soils once overburden material is removed. Overburden or fill comprised of native materials, which originated from the project area, may be used within the floodplain.

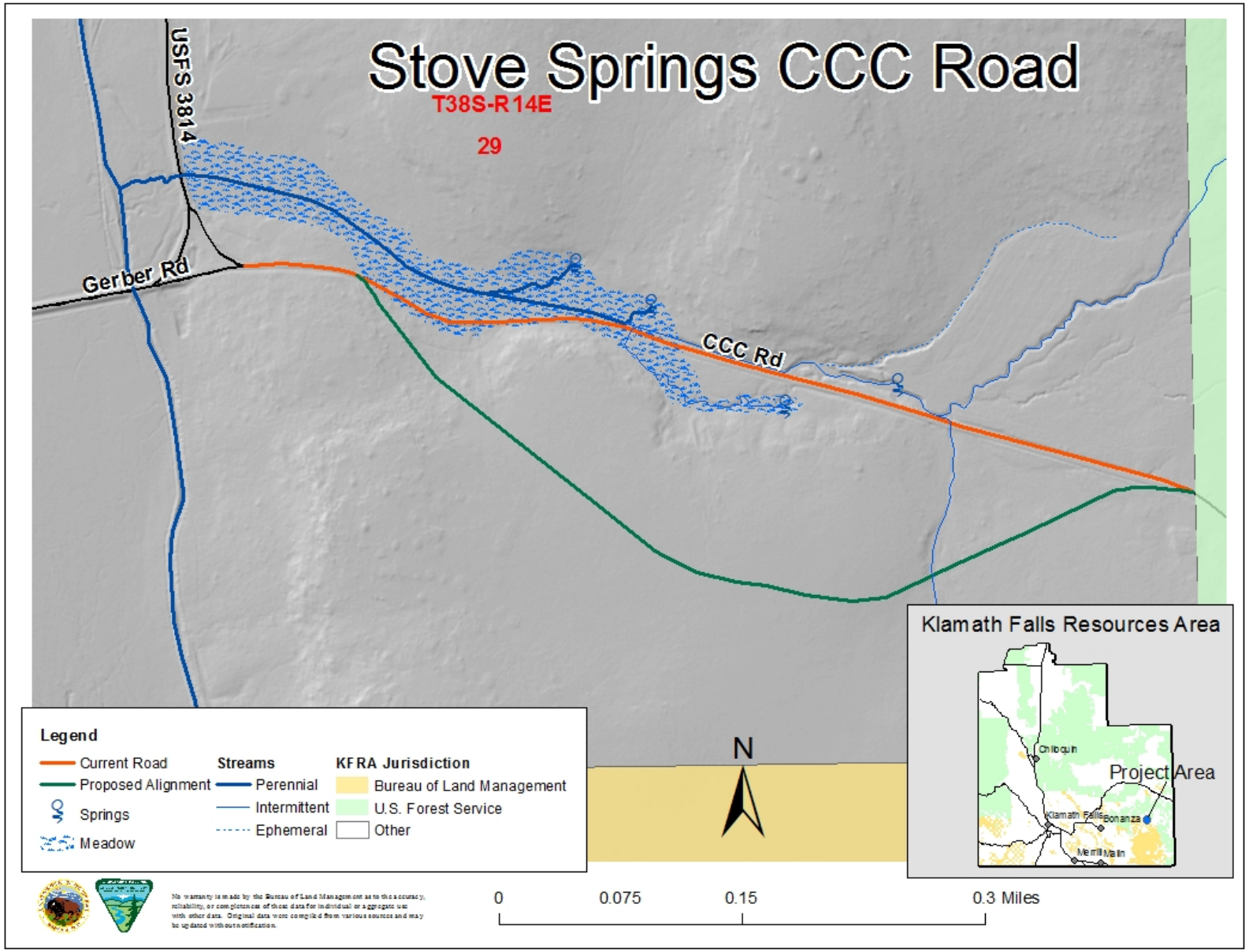
Without changing the location of the bank toe, restore damaged streambanks to a natural slope and profile suitable for establishment of riparian vegetation. This may include sloping of unconsolidated bank material to a stable angle of repose or the use of benches in consolidated, cohesive soils.

Include LW to the extent it would naturally occur. If possible, LW should have untrimmed root wads.

Use a diverse assemblage of vegetation species native to the action area or region, including trees, shrubs, and herbaceous species. Vegetation, such as willow, sedge and rush mats, may be gathered from abandoned floodplains, stream channels, etc.

Manage livestock access as necessary to achieve riparian vegetation restoration on disturbed areas.

Conduct post-construction monitoring and treatment or removal of invasive plants until native plant species are well established.


Stove Springs CCC Road
T38S-R14E
29
USFS 3814
Gerber Rd
CCC Rd
Legend
Current Road
Proposed Alignment
Springs
Meadow
Streams
Perennial
Intermittent
Ephemeral
KFRA Jurisdiction
Bureau of Land Management
U.S. Forest Service
Other
N
Klamath Falls Resources Area
Chiloquin
Project Area
Klamath Falls
Bonanza
Merrill
Malin
0
0.075
0.15
0.3 Miles