

Chapter 2. Alternatives

2.1 Introduction

This chapter describes the alternatives considered for the proposed project and summarizes the environmental effects of each alternative. It is intended to present the alternatives “in comparative form, sharply defining the issues and advocating a clear basis for choice among options by the responsible official and the public (40 CFR 1502.14)”. The Forest Plan, draft Wildlife Conservation Strategy, Payette National Forest Travel Management FEIS, input from public comments, and other applicable laws, regulations, programs, and policies related to natural resource and Forest management guided development of the alternatives.

Calculations of acres, miles, treatment unit boundaries, road and other features for this analysis are based on digital mapping. Actual on-the-ground values, boundaries and locations may vary slightly from the calculated values presented in this DEIS.

2.2 Alternatives

Section 102(2) (3) of the National Environmental Policy Act (NEPA) states that all federal agencies shall, “study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflict concerning alternative uses of available resources.” An environmental impact statement (EIS) must also “rigorously explore and objectively evaluate all reasonable alternatives.” The courts have established that this direction does not mean that every conceivable alternative must be considered, but all selections and alternative discussions must permit a reasoned choice and foster informed decision-making and informed public participation.

The range of alternatives may extend beyond the limits set by Forest Plan goals and objectives under NEPA; however, the National Forest Management Act (NFMA) requires that the selected alternative fully comply with the Forest Plan unless the plan is amended in accordance with 36 CFR 219.10(f). The range of alternatives presented in this chapter was determined by evaluating external and internal comments and the purpose and need for this project.

2.2.1 Alternatives Considered but Eliminated From Detailed Study

The ID team considered but eliminated two alternatives from detailed study during this analysis. Although these alternatives contribute to the range of alternatives, they were eliminated from further consideration for the reasons described below.

1. The ID team considered an alternative that would combine more extensive watershed restoration work (as in Alternative C) with more extensive vegetative restoration actions (as in Alternative D). This alternative was eliminated because the decision maker can achieve the same results by selecting from or blending aspects of the different action alternatives.
2. The ID team considered an alternative that would maximize commodity production (timber harvest). The ID team eliminated this alternative because purely maximizing timber volume production would not be consistent with the purpose and need of the project, nor with Forest Plan standards and guidelines. In

addition, Alternative D and E are the ID team’s attempt to increase the amount of commodity resulting from restoration efforts while remaining consistent with both the purpose and need of the project, the Forest Plan, and the science in the draft Wildlife Conservation Strategy.

2.3 Alternatives Considered In Detail

The ID team developed and analyzed in detail five alternatives, including the no action alternative, for the Lost Creek-Boulder Creek Project. In the narrative for the action alternatives, current information was used by the ID team to estimate values such as number of acres treated, road miles, and timber volume. On the maps of alternatives, prescribed fire, thinning and harvest unit locations and prescriptions are also best estimates based on current information. Some adjustments may occur during project design and layout to conform to on-the-ground conditions. In all cases, adjustments would only be made to meet the intent of the Purpose and Need and the Forest Plan.

2.4 Alternative A – No Action

Alternative A is the no-action alternative. Natural disturbances and current management of the project area would continue as before. The activities proposed for this project would not be implemented.

The NEPA requires consideration of the no-action alternative in any environmental document. This alternative serves as the environmental baseline for analysis of effects. Under Alternative A, current management of the area would continue as directed in the Forest Plan, and activities proposed in this document would not be implemented. No fire and fuels treatment, road or watershed improvements, access closures, fish and wildlife improvements, or vegetation management associated with this project would occur.

Firewood gathering, fire suppression, invasive weed treatments, road and trail maintenance and other routine forest management activities not associated with this decision would continue as before. Implementation of Alternative A would not meet the purpose and need for this proposal.

2.5 Alternative B - Proposed Action

Alternative B is the proposed action. It responds in part to the purpose and need as stated in Chapter 1 of this DEIS, and incorporates the recommendations of the PFC and recreation access concerns expressed in comment letters and public meetings.

2.5.1 Alternative B Vegetation Treatments

Vegetative treatments include: Commercial and Non-commercial Vegetative Treatments, Prescribed Fire, and Associated Actions. Vegetation treatments for Alternative B are displayed in Figure 2-1.

The Forest Service proposes to thin approximately 40,000 acres with commercial (approximately 22,000 acres) and non-commercial (approximately 18,000 acres) vegetative treatments in the project area. This acreage includes the treatments designed to benefit NIDGS and treatments within Riparian RCAs (see Appendix A). Of the acres proposed for thinning, approximately 1,800 acres are commercial treatments (as described below) within RCAs.

Proposed activities were developed utilizing a combination of data derived from aerial photo interpretation and field reconnaissance. Layout of exact boundaries and treatment types would be determined based upon additional on-the-ground surveys and vegetative conditions within each stand. Based on project design features and the intent of the proposed treatments, it is anticipated that further ground verification may result in a reduction of commercial treatments and a resultant increase in non-commercial treatments. The anticipated reduction in acreage of commercial treatments from proposed to the expected implementation acreages are based on the fact that further site specific verification of RCAs, landslide prone areas, harvest systems, economic viability/feasibility of commercial treatments, existing conditions, and other factors would preclude treating some of the proposed areas. Although all acres proposed for treatment would be evaluated for treatment based on the descriptions of treatments provided below, only acres that meet the intent of the treatment descriptions, are economically feasible, and consistent with the project design features, per alternative, would be treated. Therefore, total acres of commercial treatments are anticipated to be reduced by 10-40 percent from those proposed, based on field review of proposed treatments and actual implementation of similar previous projects on the Payette National Forest. Actual treatment unit boundaries are anticipated to vary from the GIS files and maps displayed in this document. The maps provided in this document are diagrammatic; actual unit boundaries and treatment units would be determined after further on the ground verification. Limitations such as slope, RCA boundaries, acres treated per 6th field watershed, and wildlife constraints would be applied during treatment unit delineation on the ground.

Commercial Treatments

Commercial vegetative treatments have been divided into the following categories: Commercial Thin-Free Thin (CT-FT - 12,200 acres); Free-Thin/Patch Cut (FT-PC - 1,800 acres); and Commercial Thin-Mature Plantations (CT-MP - 8,100 acres). Stands would be thinned through commercial logging. Harvested trees would generally be removed with the limbs and tops attached. The limbs and tops would be utilized as biomass, or other products, where practical. Where appropriate and needed, sapling sized trees would be cut to reduce ladder fuels and promote desired advanced regeneration where necessary. Following harvest, these stands could be underburned as described in the prescribed fire section below.

Commercial thin-free thin (CT-FT) - 12,200 acres. Free thinning would allow flexibility to use different thinning methods for varying stand conditions and objectives. For this project, free thinning would be accomplished primarily by low thinning (removing trees from the lower crown classes) with some crown thinning (removing trees from the dominant and co-dominant crown classes) and occasionally sanitation cutting to improve stand health by reducing the anticipated spread of insects or disease.

These treatments would generally be completed in forested areas dominated by mature, vigorous ponderosa pine, Douglas-fir and / or western larch (*i.e.* - PVG 1, 2, 5 and portions of PVG 6 dominated by early seral species) with canopy closures greater than 35 percent.

The purpose of CT-FT treatments would be to:

- Maintain and promote large tree forest structure while restoring the desired species composition, and stand densities;
- Promote forest health, reduce competition and improve growth rates for remaining trees;

Chapter 2 – Alternatives

- Improve habitat for wildlife species that require large tree and old forest stands with low to moderate canopy cover;
- Enhance NIDGS habitat in priority areas;
- Promote regeneration of desired tree species in areas that are conducive to uneven-aged silviculture systems (uneven-aged management would be considered in the drier forest types where successful regeneration of desired species is anticipated [*i.e.*, in ponderosa pine and Douglas-fir forest types]); and/or
- Reduce potential for crown fire spread given a wildland fire.

The specifications for this treatment include:

- Seral species (aspen, western larch, ponderosa pine, and/or Douglas-fir) would be favored to leave over non-seral species (*e.g.* grand fir) and preference given to retain larger diameter trees;
 - Trees greater than 20 inches diameter breast height (DBH) would generally be given preference for retention unless there is reason to remove these trees due to forest health, safety, or operational concerns.
 - Forest health concerns include:
 - dwarf mistletoe that cannot be isolated (and would cause mid- to long-term forest health issues),
 - basal area density over 120 feet² per acre, and
 - large diameter and/or vigorous western larch and ponderosa pine with direct crown/root competition from non-seral (grand fir or Douglas-fir) trees.
 - Safety concerns include hazard trees in and/or adjacent to campgrounds, dispersed campsites, and roads/trails open to the public.
 - Operational concerns include hazard trees, skid trails, skyline corridors, landings, etc.
- In large tree size class stands (generally stands that currently have eleven or more trees per acre that are 20 inches or greater DBH), retain at least eleven, 20 inch DBH or larger trees per acre. This may require retaining large diameter trees that do not meet the description for preference, above.
- Trees greater than 20 inches DBH not meeting merchantability specifications due to damage, poor tree form or indicators of rot should generally be retained to meet wildlife objectives. Retain large diameter western larch and ponderosa pine, regardless of crown separation, unless they do not meet dwarf mistletoe and crown ratio criteria. However, do not retain these trees if the basal area would be greater than 120 square feet per acre.
- Trees free of mistletoe would be favored over infected trees. When possible, trees with mistletoe ratings of 0-3 would be favored over trees with a rating of 4-6. When trees with mistletoe ratings of 4-6 could be isolated (*i.e.* - greater than 40 feet from uninfected host trees) while addressing

mid- to long term stand objectives these infected trees would be retained to meet wildlife objectives.

- Throughout the harvest area, clumps of trees, both commercial and non-commercial sized would be retained for wildlife and visual objectives (these would generally be prioritized in areas with existing snags).
- Small openings of less than two acres would be created in areas that are dominated by grand fir, low vigor trees, or diseased trees or in areas with high potential of aspen regeneration. Where aspen are present, conifers could be removed within the aspen stand to improve the integrity of these stands. These openings should not generally exceed 10 percent of a stand.
 - Small openings of up to two acres may be utilized to stimulate aspen regeneration. In aspen patches, coniferous trees would be removed within 50 feet of the aspen patch. To be considered an aspen patch, an area must have an average spacing of less than 20 feet between stems and be larger than 1/10 acre in size.
 - Exceptions: A minimum of 5-10 trees per acre would be left in these openings, with leave tree preference given to western larch, ponderosa pine and Douglas-fir legacy trees and vigorous serals (*i.e.*, – ponderosa pine, western larch, and aspen) in the dominant and co-dominant crown classes and secondary preference given to dominant non-seral trees. Artificial regeneration may be prescribed in patches between one and two acres if no suitable seed trees are present.
- Large diameter ponderosa pine and western larch would be “day-lighted” or thinned around to reduce ladder fuels and competition for resources. This would generally be accomplished by following the general marking guides. However, if these trees occur in the uncut patches left to limit the size of the created regeneration openings noted above, these trees should be “day-lighted”. To “day-light” these trees, all sapling and pole size trees and trees that do not meet the general retention standards within 15 feet of the dripline of the large diameter trees should be cut. Healthier trees are favored as leave trees over diseased trees. Trees with higher crown ratios, good form, and other indicators of vitality would be favored as leave trees.

Following treatment, these stands would be a mosaic of thinned areas, clumps of trees, and small openings. The average canopy closure in these stands after harvest and underburn operations would be between 25 and 45 percent. In mature stands, this equates to an average crown spacing of approximately 6 to 20 feet. Lower canopy cover (25 to 30 percent post treatment canopy cover) would generally be targeted in PVG 1 and 2. This equates to 10 to 20 foot crown spacing. Whereas higher canopy cover (30 to 45 percent) would generally be the desired post treatment desired condition in PVGs 5 and 6. This equates to 6 to 15 foot crown spacing. Portions of stands with natural openings and heavily thinned areas would have less canopy closure, perhaps as low as 10 percent. These openings would eventually develop more canopy closure where seedlings establish and grow. NIDGS treatment areas may have canopy closure reduced to 15-30 percent. In mature stands, this equates to an average crown spacing of 12 to 30 feet. Stands within goshawk post fledgling areas may have specific requirements that are different from these general guidelines. These stands will be identified prior to marking operations and will be designed to meet (GTR 217).

Chapter 2 – Alternatives

Free Thin–Patch Cut (FT-PC) - 1,800 acres. This treatment would be implemented in relatively cool, moist grand fir forest types that have evidence (*i.e.*, - relic early seral trees, stumps, snags, etc.) of previously having an aspen, ponderosa pine, western larch and/or Douglas-fir component. The treatment would occur in stands that still have a component of early seral species (*i.e.*, – 25 to 75 percent of the desired amounts) but not enough to free thin throughout and still leave the desired species composition.

Implementation of this treatment would allow for regeneration (patch cut with reserves) in patches ranging from three to ten acres in size, generally on less than 50 percent of a stand. In regenerated areas (patches) approximately four to twelve trees per acre would be retained as reserve trees. The stand would be either naturally or artificially regenerated after treatment.

Reserve tree preference would generally be legacy western larch and ponderosa pine, when available. In the absence of desired legacy trees, preference would be given to dominant non-serals and vigorous serals in any crown class. Artificial regeneration (planting trees) would be utilized in areas where the desired species composition would not be expected to be met with natural regeneration.

In portions of stands with an early seral component still remaining, free thinning would be implemented as described above. Portions of each stand not meeting the criteria for patch cuts or free thinning would not receive commercial treatment during this entry.

Commercial Thin / Mature Plantations (CT-MP) - 8,100 acres. This treatment would be applied to stands that were previously artificially regenerated (plantations). These stands are typically greater than 30 years in age and were planted predominately with ponderosa pine, Douglas-fir, and/or western larch. These mature plantations contain commercial trees with an average diameter at breast height (DBH) greater than eight inches and would average approximately 70 to 80 trees per acre (this would generally result in crown spacing of 10-15 feet) after thinning. Thinning would generally favor the retention of larger, early seral trees and be completed to create stands with variable densities while promoting a mix of desired species. Merchantable material would be removed from the site and utilized as markets allow. Non-commercial material (slash) would be lopped and scattered, mechanically harvested, hand piled, machine piled, and/or broadcast burned to reduce fuel loading. The cost of slash treatment, coarse woody debris, and fuel loading would be considerations in determining the method of non-commercial material treatment.

Commercial Thin within RCA's-Both thinning and prescribed fire treatments are proposed in the RCAs. Thinning and prescribe fire treatments in RCAs are not proposed in the Boulder Creek subwatershed (see Appendix A for further information on treatments in RCAs). Approximately 1,800 acres of CT-FT and CT-MP treatments have been proposed in areas dominated by drier forest types historically maintained by frequent, low intensity fire regimes to maintain upland vegetation within the historic range of variability. These acres are not additional acres of proposed treatment. These 1,800 acres is already accounted for in the CT-FT and CT-MP section, above. Only areas in the outer half of RCAs have been proposed for this treatment and the CT-FT and CT-MP treatment descriptions would be modified in these areas to retain adequate stocking to achieve shade and large woody debris recruitment objectives within RCAs.

Commercial thinning treatments are intended to move upland vegetation within RCAs toward the desired conditions described in the Forest Plan (Forest Plan, pgs. III-30, A-15) while maintaining soil, water, riparian and aquatic resources. Proposed treatments have been designed to mitigate potential activities that could degrade current RCA conditions or retard the attainment of SWRA desired conditions. All RCA treatments would apply only to upland vegetation that occurs within the outer portion of a RCA, and not to riparian vegetation (*i.e.*, – willow, spruce). These actions, based on further site specific analysis, are

consistent with direction for upland vegetation desired conditions and RCAs in Forest Plan Appendices A and B (USDA Forest Service 2003).

RCA treatments would remove less than 20 percent canopy cover and would be developed in consultation with the district fish biologist and/or hydrologist to ensure streambank stability and ground cover are considered and riparian functions are maintained.

In portions of RCAs where commercial thinning treatments would not be feasible or deleterious effects to riparian functions and ecological processes (described in the Forest Plan, page B-37) are anticipated, the unit (or portion(s) thereof) would be excluded from treatment.

Generally, ground disturbing activities in RCAs would be avoided. Due to the site-specificity of each proposed RCA treatment unit, a map and description of the layout of the RCA portion of the unit would be provided to the District fisheries biologist and, hydrologist,(or qualified designees) for field verification. A site-specific plan would be approved by a District hydrologist and fisheries biologist prior to implementation. See management requirements and project design features (Tables 2-4 and 2-5) for more detailed descriptions of mitigation measures and management requirements.

Non-commercial Treatments

Non-Commercial Thinning – 18,000 acres. Non-commercial thinning would be completed in plantations that currently have density-related stress occurring. This constitutes approximately 1,700 acres. These plantations are generally less than 30 years old and have an average DBH of less than eight inches. Within these plantations, thinning would be completed to improve wildlife habitat, increase growth rates and tree vigor, improve stand resiliency to natural disturbance, and reduce density-related competition. Post treatment, these stands would retain approximately 80 to 100 trees per acre. Thinning would favor early seral species but would retain a mixture of species and variable densities depending upon site specific objectives. Where reserve trees within plantations receiving this treatment are causing forest health problems (primarily due to mistletoe) trees may be killed by girdling. Girdled trees would be marked with wildlife tags as necessary to meet desired snag numbers and sizes.

In addition to the above mentioned plantation thinning, ladder fuel thinning would occur on 16,000 acres. All acres targeted for the application of fire would be evaluated for ladder fuel thinning in order to minimize mortality from prescribed fire and aid in moving towards restored conditions. This ladder fuel thinning may occur within plantations to minimize prescribed fire-related mortality.

Non-commercial thinning would generally cut trees less than eight inches DBH and prune residual trees, when practical, up to six feet in height. In areas targeted for prescribed fire treatments (see below) non-commercial thinning would be completed where necessary to:

- Expand the opportunity for application of prescribed fire by changing the fuel profile;
- Reduce the potential for undesired fire effects (*i.e.*, mortality of legacy trees);
- Aid in the retention of desired leave trees;
- Reduce non-commercial tree densities, increase growth rates, improve wildlife habitat, and tree vigor.

Ladder fuel thinning would be permitted within RCAs where active ignition is anticipated. All ladder fuel treatments in RCAs will be completed by hand and would not cut trees larger than eight inches DBH. Slash

Chapter 2 – Alternatives

produced from ladder fuel treatments would be lopped and scattered or hand piled. Piling of slash would not occur within RCAs. See Project Design Features for further description of measures to ensure that activities do not degrade or retard soil, water, riparian, or aquatic desired conditions.

Associated Actions

A number of activities associated with implementing these vegetative treatments are necessary. These include:

Road Maintenance and Use - Road maintenance may include, but is not limited to, blading, installation of drainage features (*i.e.* – rolling dips), hardening soft spots (*i.e.* - utilizing pit run), installing or improving water passage (*i.e.* – culverts), realignment of small segments of roads to minimize impacts to resources, brushing roads to improve visibility and safety. Additional system roads may be utilized with approval by district hydrologist and/or fisheries biologist (or qualified designees). System roads currently in long-term closure may also be reconstructed and used for implementation of the project. Use of these roads may involve the installation of stream crossings that were removed as part of the long-term closure treatment.

Temporary roads - Both planned and incidental temporary roads would be utilized and decommissioned after project implementation. Planned temporary roads are defined as routes identified during the planning process and depicted on project maps as such. Approximately 30 miles of planned temporary roads would be used. Incidental temporary roads are roads that are needed to complete vegetative treatments but cannot yet be identified due to the level of site-specificity necessary. These incidental temporary roads would be located on existing roadbeds (unauthorized roads) that are proposed for decommissioning, when possible, and where other resource concerns could be mitigated. Incidental temporary roads would require approval by resource specialists prior to construction.

Gravel Pits – Seven gravel pits will be utilized within the project area in order to provide gravel for resurfacing roads. All of the gravel pits have suitable rock for present and foreseeable future expansion needs. Activities in the pits will be coordinated with the Wildlife Biologist for any restrictions or constraints for protection of wildlife. Expansion of the gravel pits outside of the existing disturbed area will require additional coordination with resource specialists such as heritage, botany, and wildlife. Alternate pit locations may be considered when the impacts of developing a new rock source would be less or equal to using an existing source. Further description of the gravel pits and their locations is located in Appendix F, *Road Management Actions*.

Harvest Systems- Merchantable trees would typically be cut with feller-bunchers on slopes less than 45 percent or by personnel with chainsaws on slopes greater than 45 percent. Harvest systems may include ground based, skyline, and helicopter. Generally, ground based systems (tractor, jammer, etc.) would be utilized on slopes less than 45 percent slope where road access is available, skyline systems would be used on slopes greater than 45 percent where road access is available, and helicopter systems would be utilized where ground based or skyline systems are not feasible and economically viable. Current estimates indicate that helicopter systems would not be economically viable. Actual harvest system in each unit would be determined upon field verification with limitations of the amount of each harvest system that could occur in each subwatershed. Existing skid trails would be reused when practical and new skid trails would be authorized where necessary. All skid trails would be obliterated and recontoured after project completion to mitigate resource concerns.

Brush Disposal- After thinning, slash reduction would include machine piling and burning, hand piling and burning, lop and scatter, broadcast/underburning, or removal. This applies within and outside of areas designated for prescribed fire treatments. Opportunities would be sought for removing and utilizing the biomass for energy production or other uses when practical.

Site Preparation – After the harvest activities are completed and prior to planting in patch cuts, site preparation may be completed either by prescribed burning, hand scalping or mechanical scalping (exposing mineral soil) with heavy equipment. This would be completed to reduce competition to seedlings from brush and grass. This applies within and outside of areas designated for prescribed fire treatments.

Planting – Planting of ponderosa pine, western larch and/or Douglas-fir seedlings on all acres that had patch cuts would be completed as necessary to meet desired stocking levels.

2.5.2 Alternative B Prescribed Fire Treatments

Approximately 45,000 acres of the project area would be targeted for prescribed burning over the next 15-20 years (see Figure 2-2). In stands where commercial activities are proposed the application of fire would generally occur after commercial activities are complete. Re-introducing 500 to 10,000 acres of fire annually for the next 15-20 years would move forested and non-forested vegetation towards conditions that more closely represent historic distribution, structure, and function, and would move the project area towards desired conditions as described in Appendix A of the Forest Plan.

A mosaic-like application of fire would re-introduce fire to approximately 75 percent of primary targeted acres, and 50 percent of secondary targeted acres.

- Primary target acres for treatment consist of stands with historically high fire frequencies and lower severities (grasslands and stands dominated by seral species such as ponderosa pine, Douglas-fir, and western larch);
- Secondary target acres include stands with historically moderate fire frequency and mixed severities stands composed of both seral and non-seral species (*i.e.*, grand fir);
- Fire would not be directly applied to non-target areas. These stands are composed of young plantations, stands of historically low frequency and high severities, and stands set aside for other resource concerns or objectives (*e.g.*, wildlife cover). Approximately 20 percent of non-target acres within the project area can be expected to receive fire, through backing (low intensity fire spread, without additional lighting). This minimal fire spread would not alter overall stand conditions within the non-target areas.

Existing barriers to fire spread (natural and human-caused, from streams and barren ridgelines to roads and trails) would be used where possible to contain prescribed burns within specified boundaries. In areas where existing barriers are insufficient to control fire spread, fireline would be constructed. Hand-constructed fireline would be limited to use only where necessary. The integrity of existing trails and roads would be considered in the application of fire and damage caused by these actions would be repaired. Constructed fireline would be rehabilitated after use.

Ignitions would be by hand or helicopter. Prescribed burning operations may occur from early spring to late fall. Fire may be applied to tree wells in winter or early spring to reduce fuel accumulation and reduce the potential for tree mortality during regular broadcast burning. Maintenance burning (burning after initial

Chapter 2 – Alternatives

application of fire) would occur every 5-10 years to maintain suitable NIDGS habitat and areas representative of high frequency fire regimes. Prescription parameters (wind speed, fuel moisture, smoke dispersion, and other resource area objectives) influence burn opportunities. Ignitions within some RCAs would be permitted, with some restrictions and approval by district resource specialists.

No direct ignitions of prescribed fire would occur within RCAs in the Boulder Creek subwatershed. In the remaining portions of the project area, ignition operations within RCAs would be implemented to maintain RCA function and processes by creating a mosaic of burned and unburned areas, minimizing severity and intensity; maintaining stream-shading vegetation; retaining adequate ground cover and sediment filtering capacity; and maintaining current and recruitable large and coarse woody debris. In RCAs identified for treatment, no ignitions within 120 feet of perennial stream channels or within 60 feet of intermittent stream channels would occur. Direct ignitions could occur anywhere within RCAs if needed to contain fire spread. Ignition operations should generally occur in the outer portions of RCAs in the drier PVGs where fuels reduction is needed to increase the resiliency of the RCA and reduce the potential for high intensity/severity wildfire. If any areas are not capable of carrying fire or maintaining RCA function and processes (as described above) at the time of fire application, fire would not be applied.

All burning would follow Forest Plan Standards and Guidelines, and adhere to national and state air quality regulations. Specific conditions under which burning would occur would be developed through a prescribed fire plan, prior to ignition. Burn plans would be reviewed by district resource specialists prior to implementation.

2.5.3 Alternative B Watershed Improvement and Restoration Treatments

System Road Treatments

Road treatments proposed for this project were developed using the Travel Analysis Process (TAP) conducted in 2012 (USDA Forest service 2012). Changes to the Forest System Road network are proposed to reduce overall road density and minimize road-related impacts to water quality, wildlife and fish habitat. The intent is to improve the Boulder Creek subwatershed watershed condition framework (WCF) condition class from Impaired Function to Functioning at Risk (USDA Forest Service 2011).

Roads that are recommended to remain on the landscape as part of the Minimum Road System (MRS) would be maintained and improved to reduce sediment production (guided by recommendations from site-specific sediment modeling). Fish passage would be improved at crossings throughout the project area by replacement or removal depending on the proposed road treatment (*e.g.* a barrier identified on a road proposed for decommissioning would be removed, whereas a barrier on a road proposed to remain on the system would be replaced with an appropriate structure). Forest system roads not needed for future management or access and unauthorized routes are identified for decommissioning.

Approximately 60 miles of Forest system road would be placed in Long Term Closure status (Maintenance Level 1) and approximately 70 miles of Forest system roads would be decommissioned (Figures 2-3 and 2-4). Most of the system roads proposed for treatment are not currently open to the public. Currently 265 miles of road are open to motorized use within the project area; the proposed action would not appreciably change motorized access.

Unauthorized Route Treatments

All unauthorized routes not needed for future management would also be evaluated for some level of restoration treatments. The exact locations of the unauthorized route treatments have not been determined at this time, but will be defined in the FEIS and Record of Decision. It is anticipated that 90 miles of unauthorized roads across the project area would be treated. The following would be used to determine which routes would receive treatments.

- a. Decommission any unauthorized routes that are utilized as temporary roads for vegetation management activities.
- b. Decommission all unauthorized routes that are collectors to system roads identified for decommissioning or long term closure.
- c. Decommission all unauthorized routes where there is evidence of unauthorized motorized use.
- d. Decommission all unauthorized routes categorized as High Priority. High Priority indicates adverse soil, water, aquatic, and/or terrestrial resource impacts.
- e. Decommission all unauthorized routes where stream crossing culverts or fills have not been removed from past actions.
- f. Decommission all unauthorized routes where a large percentage of the route is within a riparian or landslide prone area

The Forest Service proposes to decommission approximately 30 miles of Forest system road and at least 12 miles of unauthorized route within the Boulder Creek subwatershed (an ACS priority). This road decommissioning is designed to improve Boulder Creek subwatershed from “Impaired” to the “Functioning at Risk” condition class. Road densities in the remaining subwatersheds would be reduced toward the desired condition, but would likely remain in the “Impaired” category. Table 2-1 describes the proposed restoration treatments for each of the subwatersheds in the project area (see also Figures 2-3 and 2-4).

Road relocation and re-routes

PL 111-11, Omnibus Public Land Management Act of 2009, Title IV--Forest Landscape Restoration, Sec. 4003 (b) (1) (F) requires that the CFLR projects not include the establishment of permanent roads. Temporary roads constructed for restoration treatments need to be decommissioned. Existing roads can be decommissioned, maintained, and re-constructed (including minor re-routes) where the purpose of the activity is to reduce ecological impacts from the road and to facilitate achievement of landscape strategy objectives.

The two road relocations in the Upper Weiser River subwatershed involve new road construction where there is not a current roadbed. Road construction to connect 51478 to 51482 would re-locate 51479 outside of the RCA. Road construction to connect 51480 to 51483 would relocate 51484 outside of the RCA. One road re-route in the Boulder Creek subwatershed would connect FS 51255 to FS 50079 by reconstructing an existing unauthorized route. This re-route would allow decommissioning of FS 50662 and FS 50131 while providing road access to the area for vegetation management.

Table 2-1. Proposed Road Treatments by Subwatershed

Subwatershed	Existing System Road Miles/ Mapped Unauthorized Routes	System Road Decomm. Miles	Move to Long Term Closure (Currently closed to the public)	Fish Passage Barrier Improvement	ATV Trail Conversion (currently seasonally open road)	Restoration of Unauthorized Routes (miles)	New Road Miles (Relocation of decommissioned road)	Change to Motorized Access (miles)
Boulder Creek	93/22	30	<2	16	0	12	0.5	- 1.0
Lost Creek	183/73	21	35	11	12*	40	0	+ 3.8
Lower West Fork Weiser	7/<1	<1	0	0	0	0	0	- 0.4
Upper West Fork Weiser	115/32	9	10	7	0	20	0	-0.5
Upper Weiser River	75/40	10	13	6	0	18	1.0	+0.1
Total	473/167	70	60	40	12*	90	1.5	+2.0

*Would also include conversion of approximately two miles of unauthorized routes to ATV trail.

Fish Passage/Habitat Connectivity

Improvements to fish passage, especially in the Boulder Creek subwatershed, are needed to address the purpose and need of the project. Sixteen crossings have been identified as important fish passage barriers in the Boulder Creek subwatershed in streams occupied by ESA-listed fishes or in Designated Critical Habitat (DCH). These crossings have been rated as either a Priority 1 (within a stream occupied by listed fish species or in DCH with abundant suitable upstream habitat) or Priority 2 (within DCH or suitable habitat for TES and desired fish species) for replacement (see Figures 2-3 and 2-4).

In the Boulder Creek subwatershed, this project proposes replacement of 11 of these crossings with appropriate structures (the remaining five barriers would be removed with the proposed road decommissioning). Additional stream crossings are present in the Boulder Creek but are not proposed for replacement in this project.

Outside of the Boulder Creek subwatershed, an additional 24 road-stream crossings have been identified in the Lost Creek, Upper West Fork Weiser River and Upper Weiser River subwatersheds on larger streams and major tributaries as a Priority 2 for potential replacement to improve fish passage. Although additional barriers are present in all subwatersheds on unnamed and intermittent stream channels, this project will focus on mainstem fish-bearing streams and tributaries. None of the subwatersheds outside of Boulder Creek are recognized as ACS watersheds or contain ESA-listed fishes. Crossings should be replaced as road work and project activities occur in these areas to improve habitat conditions for desired native fish species, and improve hydrologic connectivity in those subwatersheds.

Road Maintenance and Travel Management

System roads identified to remain on the landscape as part of the reduced MRS would be maintained and improved (see Figures 2-3 and 2-4). Activities designed to reduce sediment production in the Boulder Creek subwatershed would be guided by site-specific sediment modeling (Geomorphologic Road Analysis and Inventory Package (GRAIP); <http://www.fs.fed.us/GRAIP/>). All closed Maintenance Level 1 Forest System roads would receive appropriate long-term closure treatments including culvert removal, installation of drainage features, and establishment of vegetation to reduce erosion to make them self-maintaining. All roads identified as not open to the public would receive an effective closure device (such as a gate, berm, or other closure device).

2.5.4 Alternative B Recreation Improvements

Boulder Creek

Trail maintenance and trail relocation to improve watershed conditions by repairing erosion problems along the trails (due to lack of trail maintenance and poorly located portions of some trails) are the focus of recreational improvements proposed in Boulder Creek (see Figure 2-5). Additionally, old pit outhouses would be removed and the sites would be restored.

The Lost Creek-Boulder Creek Landscape Restoration Project would:

1. Perform heavy maintenance on all existing Forest Service system trails within the Boulder Creek subwatershed to improve them to Forest Service Trail standards, including closing one trailhead and improving one trailhead. Specific trail work would:
 - a) Improve the Pollock Trail #179 trail tread where it crosses FS Road 51251; remove the old road culvert from the Road 51251/Trail #179 junction; install new trail signs at all trail junctions and where the trail crosses roads; remove the deteriorated horse ramp from the Chokeycherry Flat junction (Road 50158/Trail #179 junction); complete a trail re-route between Chokeycherry Flat and the #178 Rapid Ridge Trail junction to avoid steep and rocky terrain.
 - b) On #181 Cow Camp Trail, move the trailhead to the Pollock Trailhead (where there is abundant parking for horse trailers and vehicles) and construct a ½ mile trail from the Pollock Trailhead to connect into the Trail #181 trail about ½ mile up the 181 trail; add an educational kiosk to promote certified weed free hay only, and monitoring to ensure invasive species introduction and establishment does not occur; repair the bog crossing with a wooden boardwalk; complete blasting of rock and a short re-route at the Squirrel Creek crossing, and complete brushing along the entire trail length; decommission the Cow camp ½ mile of trail which is no longer needed and move the signs to the Pollock trailhead /new trail junction.
 - c) On Indian Springs Trail #184, install a trail sign and construct a 2-3 vehicle pull-out for parking along FS Road 50074; complete reconstruction work on the switchbacks located below the Chokeycherry Flat Road 50158.
 - d) On Rapid Ridge Trail #178, complete heavy trail maintenance, and focus on work needed to repair damage to the trail tread caused by the 2012 Wesley Fire
2. Decommission the Ant Basin #324 trail head, 0.9 miles of Trail #324 (non-motorized trail) that accesses the #178 trail, close and decommission a short segment of Forest Road 50079 that access the trailhead and would no longer be needed. Relocate all trail use to the larger, better located Ant Basin South #519 trail; improve FS Road 51254 (which accesses the Ant Basin South Trailhead and #519 motorized trail); construct trailhead parking at the Ant Basin South trailhead, which would accommodate up to four horse trailers/trucks and an additional two passenger vehicles at one time; provide a turn-around for trucks with trailers and install a single vault restroom, and two metal hitch rails for stock.
3. Decommission and remove five wooden pit outhouses located along FS Road 50074 road in the Boulder Creek subwatershed and rehabilitate the sites. These outhouses are no longer useable.

Lost Creek

Specific to recreation in Lost Creek Subwatershed, the Forest Service proposes to (see Figure 2-6):

1. Install three, 3-panel entrance/information kiosks at the primary entry points to the reservoir. The middle panel on each kiosk will have a large scale map of the reservoir area that displays where dispersed camping using a vehicle is allowed, new OHV trail opportunities, vault restroom locations, developed camping opportunities (Cold Springs Campground), and the areas where the Forest Service is promoting personal self-contained toilets for camping use.
2. Install six single vault toilets around the reservoir in the most popular dispersed camping areas; promote the use of self-contained portable toilet units, (similar to what river users carry) in dispersed camping areas outside the immediate reservoir area; remove and decommission one remaining wooden unusable pit toilet located adjacent to the dam.
3. Identify and sign one main access road into the larger dispersed sites located along the west side of the reservoir, improving the entrance roads where needed to bring them up to road standards for level 2 roads; close and rehabilitate the multiple access routes into these dispersed camping sites.
4. Designate 68 (with signing, barrier rock and some pole fencing) desired dispersed campsites to retain; harden (gravel) and install barrier rock and fencing to define the boundaries of the larger sites to avoid perpetual and continued growth of the camping sites/areas; sign the access into these sites from main roads and sign individual dispersed campsites; add fire rings to some of the larger identified dispersed camping sites. Dispersed camping using a motorized vehicle will be restricted to designated sites only on Forest Road 089 road surrounding the Lost Valley Reservoir.
5. Complete closure and restoration of 12 undesired camping sites too close to the reservoir and/or those with poor access or near riparian areas.
6. Perform road to OHV trail conversion on 13 miles of closed roads and open seasonal roads. Identify an additional 7 miles of road to OHV trail conversion between draft and final EIS. The proposed 13 miles are located directly south of Lost Valley Reservoir. The OHV trails would be open to vehicles 72 inches – 84 inches in width and designed to meet Trail Class 2 standards for Four-wheel drive vehicles greater than 50 inches in width, as defined in FSH 2309.18 – Trails Management Handbook, Chapter 20. These standards have a design tread width of 72 inches – 84 inches, are on native material with limited grading, with structures minimum width being 96 inches.

Upper West Fork Weiser, Lower West Fork of the Weiser and Upper Weiser

No new recreation facilities are planned at this time for these subwatersheds.

Public Access

Under Alternative B, approximately 255 miles of open road would be available within the entire project area for public access for recreation opportunities including, but not limited to hunting access, fire wood gathering, berry picking, scenic driving, and dispersed camping in designated sites along the open roads.

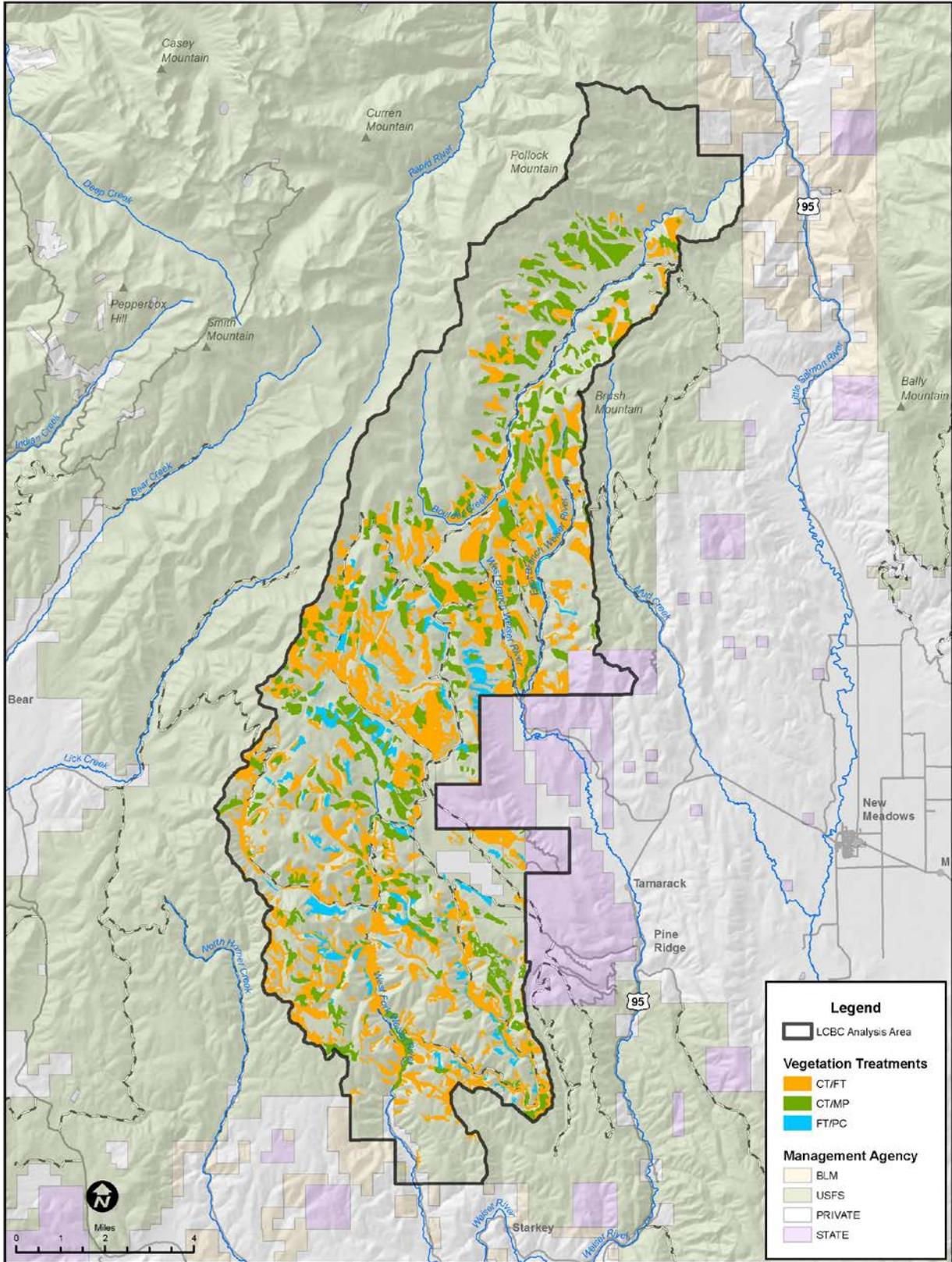


Figure 2-1. Alternative B Vegetation Treatments

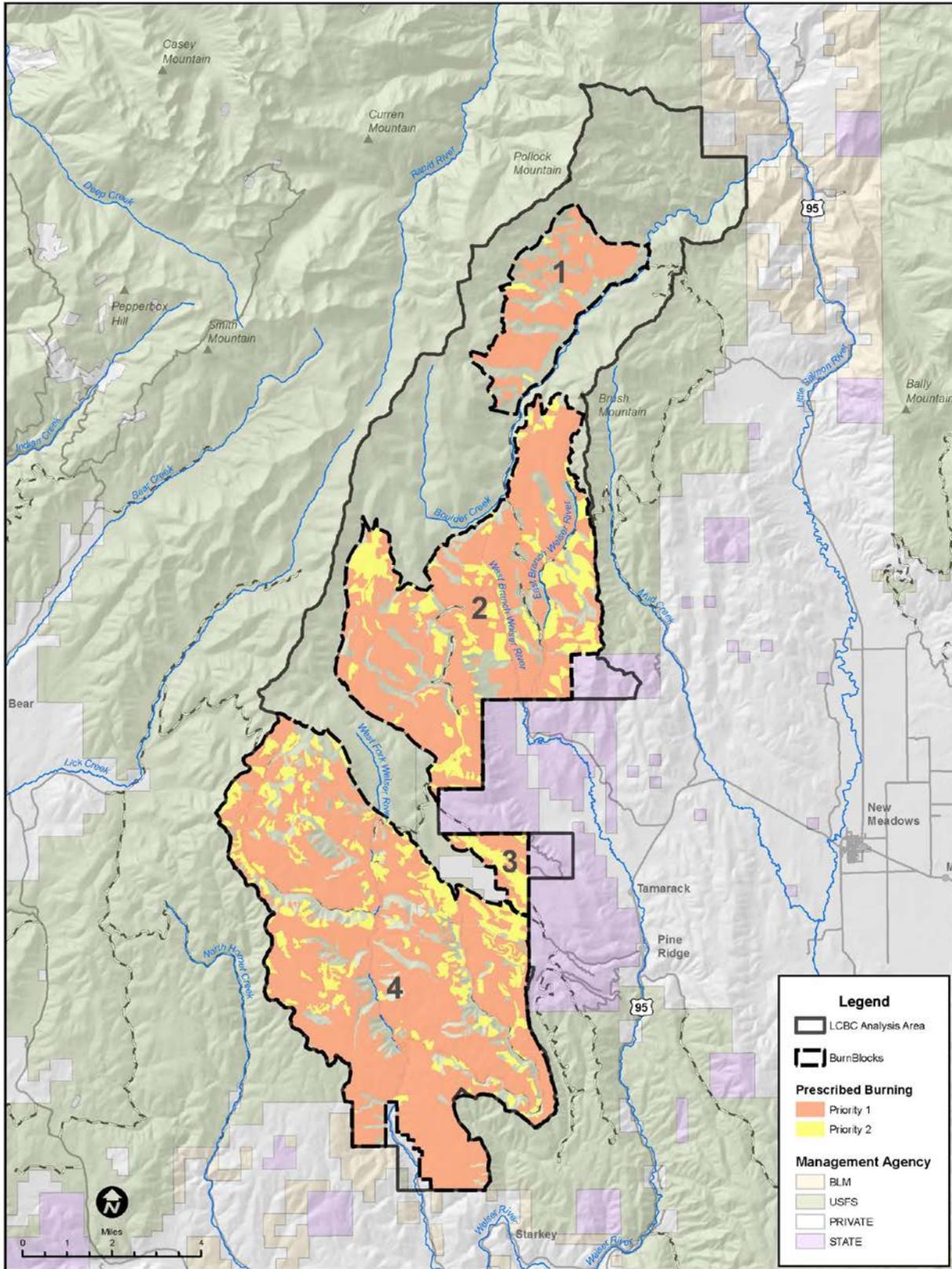


Figure 2-2. Alternative B, C and D Prescribed Fire Treatments

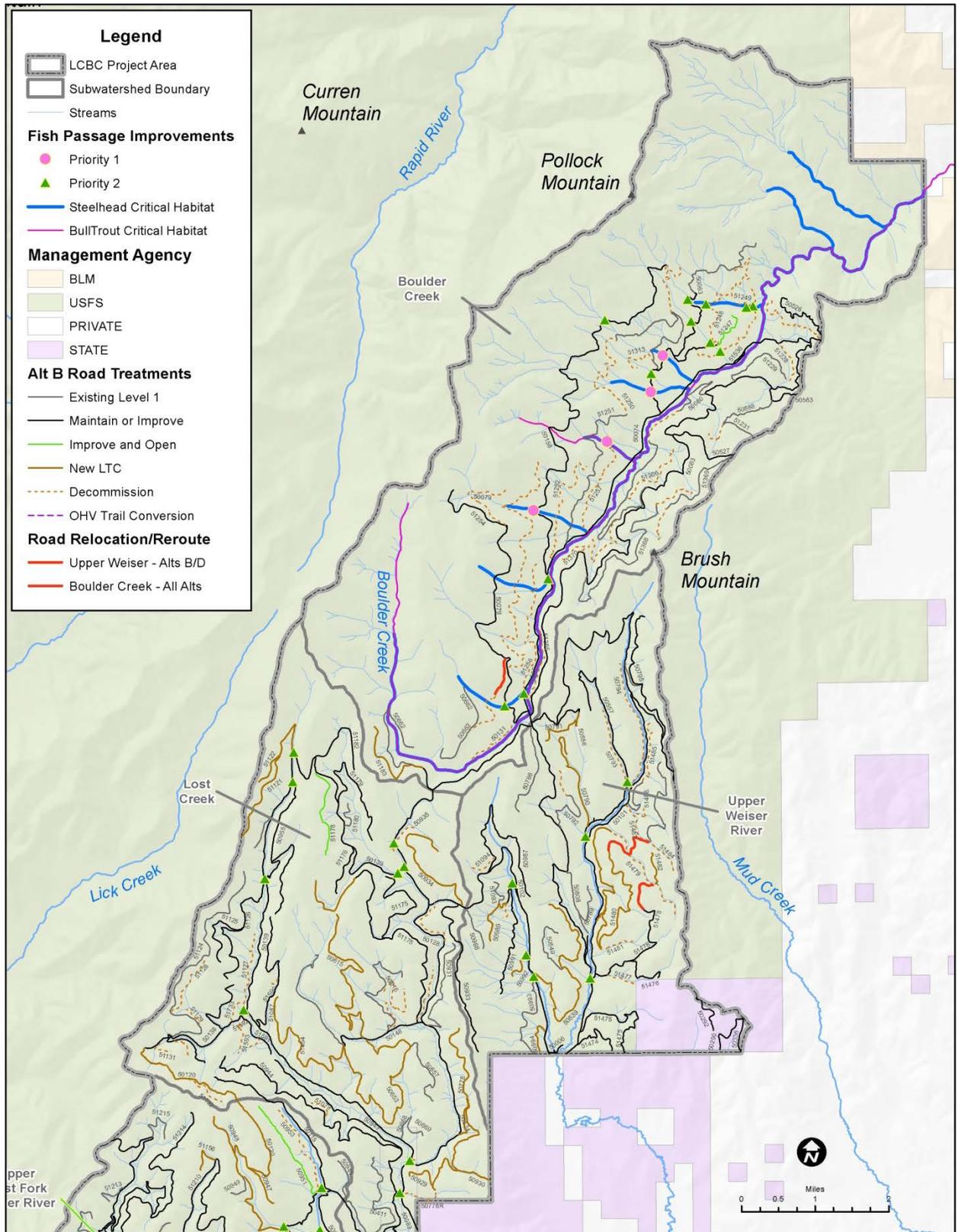


Figure 2-3. Alternative B Watershed Restoration Treatments, North

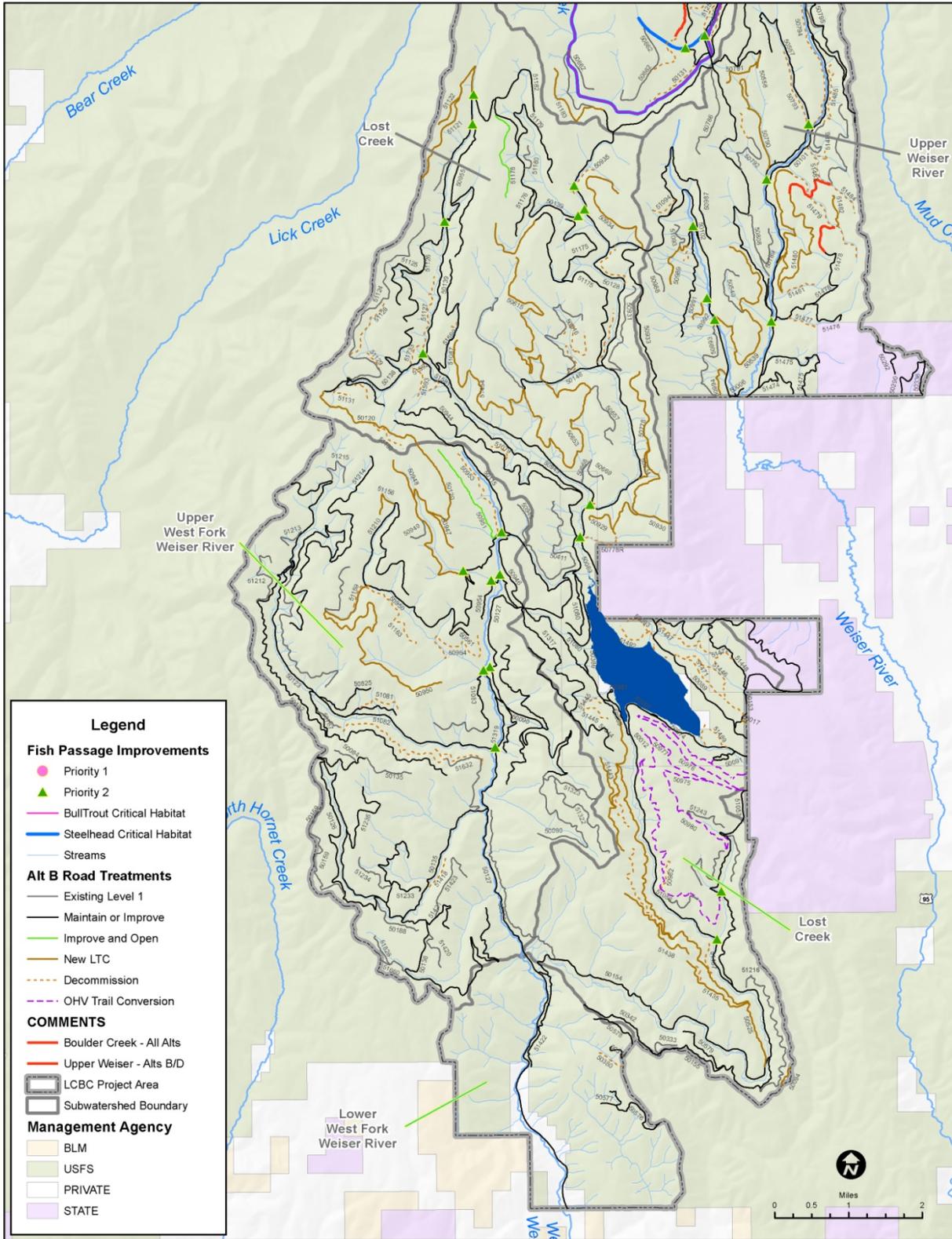


Figure 2-4. Alternative B Watershed Restoration Treatments, South

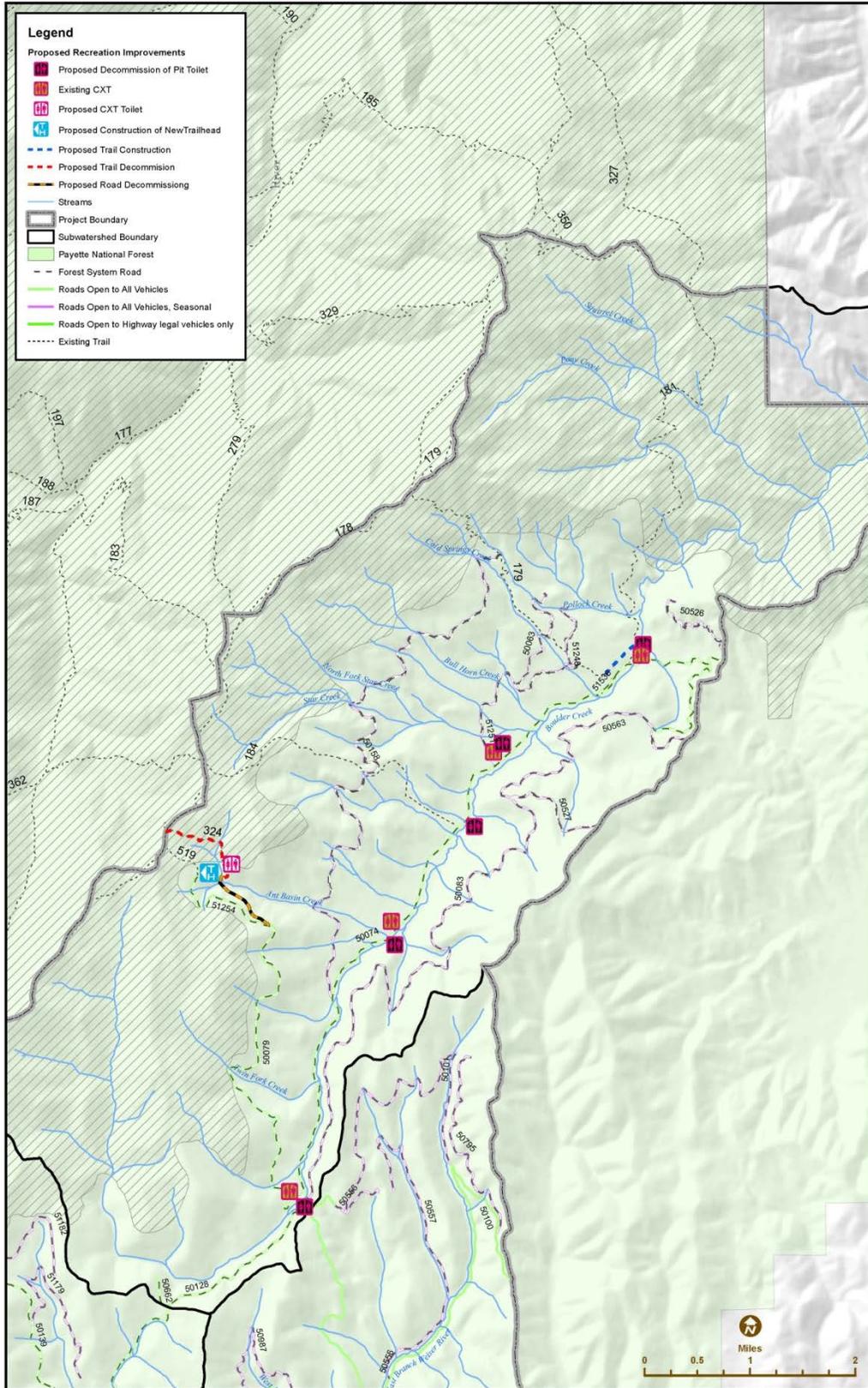


Figure 2-5. Alternative B Boulder Creek Recreation Improvements

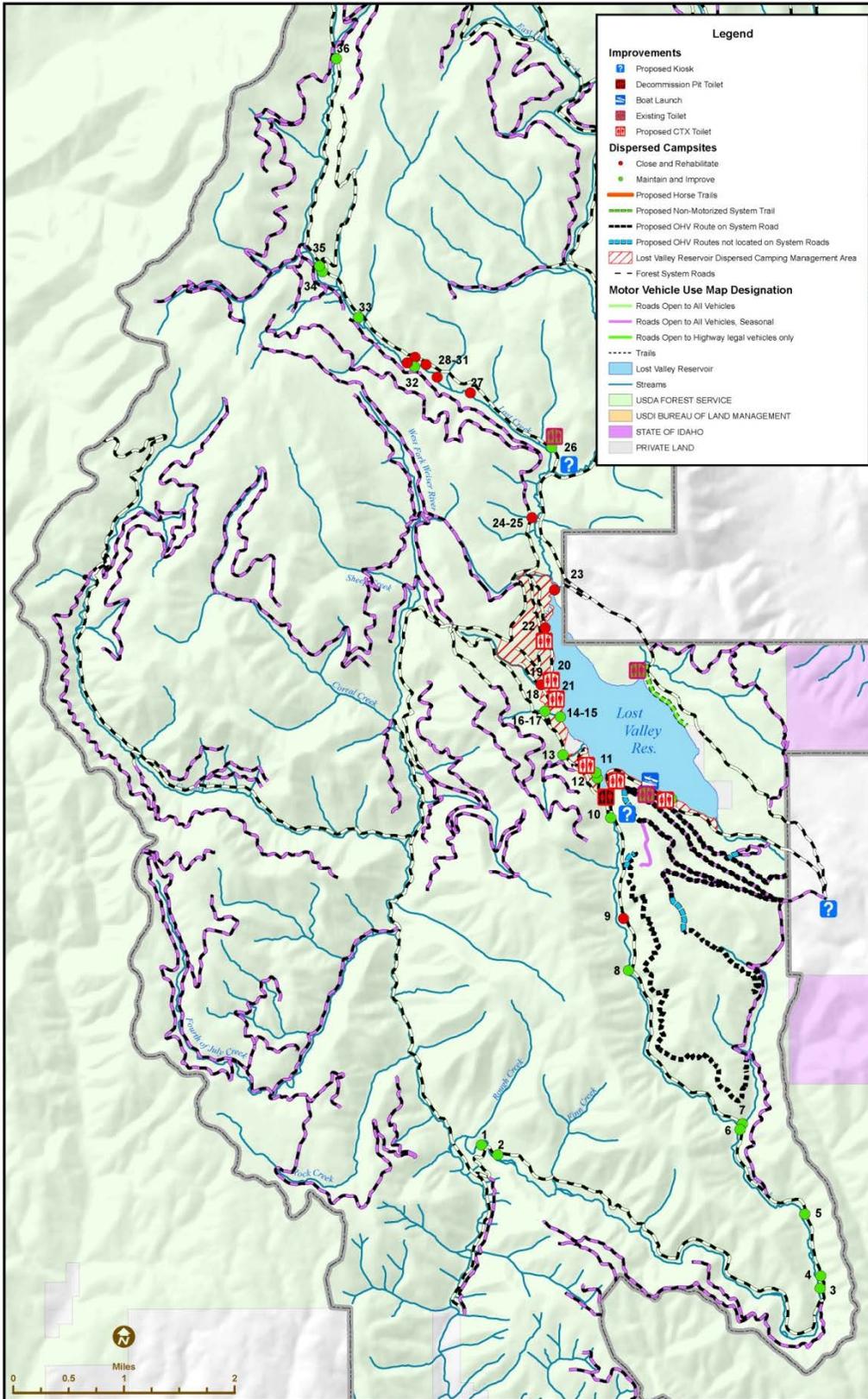


Figure 2-6. Alternative B Lost Creek Recreation Improvements

2.6 Alternative C

2.6.1 Alternative C Vegetation Treatments

This alternative proposes less intensive vegetative treatments and fewer acres of vegetative treatments than Alternative B. Approximately 14,500 acres of commercial treatments and approximately 22,000 acres of non-commercial treatments are proposed in Alternative C (see Figure 2-7). It has been designed to address concerns regarding soil, water, riparian and aquatic resources as well as wildlife concerns.

The primary differences between this alternative and Alternative B are that no regeneration treatments (patch cuts or shelterwood) would occur and no thinning in RCAs would occur. In addition, fewer acres of treatment within grand fir forest types are proposed and these treatments would generally be less intensive (i.e. remove less trees in treated areas) than those proposed in Alternative B.

Commercial Treatments

Commercial vegetative treatments would include: Commercial Thin-Free Thin (8,500 acres) and Commercial Thin-Mature Plantations (6,000 acres).

Stands would be thinned through commercial logging. Where appropriate and needed, sapling sized trees would be cut to reduce ladder fuels and promote desired advanced regeneration where necessary. Following harvest, these stands could be underburned as described in the prescribed fire section below.

Commercial thin-free thin (CT-FT) – 8,500 acres. Treatments in drier ponderosa pine and Douglas-fir forest types (PVGs 1 and 2) would be identical to those proposed in Alternative B. The purpose of CT-FT treatments would be identical to those in Alternative B.

In the cooler and moister grand fir forest types (PVGs 5 and 6), only the more dense stands (typically with higher existing canopy cover) would be proposed for treatment and only when there is an existing component of the desired species composition.

These treatments would be similar to CT-FT treatments described in Alternative B. The major differences are that this Alternative would:

- Limit the amount of sanitation cutting to improve stand health by reducing the anticipated spread of insects or disease. Sanitation treatments would not occur in mature stands unless they were in or adjacent to stands of young trees that would be adversely affected by forgoing sanitation treatments.
- These treatments would generally be completed in forested areas dominated by mature, vigorous ponderosa pine, Douglas-fir and / or western larch (*i.e.* - PVG 1, 2, 5 and portions of PVG 6 dominated by early seral species)
- In PVG 5 and 6, these treatments are proposed only in dense stands, typically with greater than 70 percent canopy cover.

Treatment specifications for Alternative C are identical to Alternative B except that:

- Trees infected with mistletoe would not be removed unless they met the criteria described above.

Chapter 2 – Alternatives

- Small openings would not be permitted unless it is to promote aspen regeneration in or adjacent to existing aspen.

Following treatment, these stands would be a mosaic of thinned areas, clumps of trees, and natural openings. The average canopy closure in these stands after harvest and underburn operations would be between 25 and 30 percent (10 to 20 foot crown spacing) in PVGs 1 and 2 and between 35 and 50 (4 to 12 foot crown spacing) percent in PVGs 5 and 6. Portions of stands with natural openings and heavily thinned areas would have less canopy closure, perhaps as low as 15-20 percent. NIDGS treatment areas may reduce canopy closure to 15-30 percent canopy closure.

Commercial Thin / Mature Plantations (CT-MP) – 6,000 acres. These treatments would be identical to Alternative B except that 10-20 percent of each stand would be untreated to provide addition elk security and thermal cover.

Commercial Thin within RCAs-No commercial thinning treatments (CT-FT or CT-MP) within RCAs have been proposed in this alternative.

Non-commercial Treatments

Non-Commercial Thinning – 22,000 acres. Approximately 1,600 acres of non-commercial thinning in plantations as in Alternative B is proposed. Approximately 4,000 more acres of ladder fuel thinning have been proposed in Alternative C than in Alternative B.

Associated Actions

Actions associated with this alternative also include road maintenance and haul, temporary roads, harvest systems, and brush disposal. No site preparation or reforestation activities are planned as a part of this alternative. Other differences include:

- Fewer miles of system roads would be utilized for commercial product haul,
- 11 miles of planned temporary roads (six miles of which are on existing roadbeds) would be utilized.

2.6.2 Alternative C Prescribed Fire Treatments

Prescribed fire treatments under Alternative C would be identical to the proposed action (see Figure 2-2) with the exception that:

- No additional acres of prescribed fire would occur under Alternative C due to limitations related to environmental conditions and other projects involving the application of fire.

2.6.3 Alternative C Watershed Improvement and Restoration Treatments

Alternative C addresses comments that requested a more effective watershed restoration effort (especially in Boulder Creek) and is designed move the Boulder Creek subwatershed toward WCF Condition Class 1 and Forest Plan WCI category FA (Functioning Appropriately) for road density. This alternative emphasizes watershed restoration treatments in all subwatersheds throughout the project area (see Figures 2-8 and 2-9).

Vegetation Treatments

Vegetation treatments would not occur within RCAs anywhere in the project area under Alternative C. Vegetation management objectives would be achieved exclusively with prescribed fire.

Prescriptions for vegetation treatments would limit crown cover removal in drainages where ECA would increase over 25 percent, or where the Channel Condition Risk is moved into the High category.

System Road Treatments

Alternative C identifies additional system roads for decommissioning when compared to the proposed action (Table 2-2). All system road decommissioning proposed in this alternative would initiate ecological recovery and fully recontour (obliterate) the road prism by re-establishing hydrologic connectivity, providing sufficient ground cover, and encouraging native vegetation and to restore long-term soil productivity. Approximately 60 miles of system road and approximately 15 miles of unauthorized routes (described below) in the Boulder Creek subwatershed would be decommissioned, which would move the Road Density/Location WCI from the Functioning at Unacceptable Risk (FUR) category to the functioning at risk (FR) rating as described in Appendix B of the Forest Plan. The overall road density including system and unauthorized routes in the Boulder Creek subwatershed would be approximately 1.1 miles per square mile. This would also achieve the goal of improving the subwatershed toward the WCF “Class 1” condition class as described by Potyondy and Geier (2010). The change in condition class would be attributed to road decommissioning, (initiating improvements in long-term soil productivity), road and trail maintenance (reducing erosion), enhancement of aquatic habitat (increased fish passage), and improvements to RCAs (due to obliteration of roads within RCAs).

Miles of proposed system road decommissioning in the subwatersheds outside of Boulder Creek based on watershed restoration recommendations identified in the D3 Coalition Travel Analysis Plan. System road decommissioning and unauthorized route restoration treatments would move each subwatershed further toward desired conditions when compared to the proposed action. However, the Road Density/Location WCI would not differ from the proposed action in the Upper Weiser River, Lost Creek and Upper West Fork Weiser River subwatersheds. Road decommissioning proposed in this alternative would move the Road Density/Location WCI from FR to FA in the on-Forest portion of the Lower West Fork Weiser River subwatershed and would also change the WCF condition class of that subwatershed from “Class 2” to “Class 1” (Table 2-2).

Unauthorized Route Treatments

Unauthorized route restoration treatments proposed in each of the subwatersheds in the project area are displayed in Table 2-2. Alternative C includes more miles of unauthorized road restoration treatments than the proposed action. Approximately 15 miles of unauthorized routes in the Boulder Creek subwatershed are proposed to receive restoration treatments. All restoration treatments on unauthorized routes would be consistent with the description of treatments in the proposed action. Specific treatments on each route may vary, but all actions would attempt to initiate ecological recovery of the road prism to regain hydrologic connectivity, sufficient ground cover to reduce surface erosion, native vegetation and long-term soil productivity. Exceptions may occur where the route is not accessible or natural revegetation is considered adequate in achieving the ecological restoration goals (identical to the proposed action). Access would also be deterred where illegal motorized use has been or is currently occurring.

Road relocation and re-routes

The two road relocations proposed in the proposed action (FS 51478 and FS 51479 in the Upper Weiser River subwatershed), which would require construction of a new roadbed, would not occur in Alternative C. Three other road re-routes are proposed in this alternative that use existing system roads or existing roadbeds.

One road re-route in the Boulder Creek subwatershed would connect FS 51255 to FS 50079 by re-constructing an existing unauthorized route. This re-route would allow decommissioning of FS 50662 and allow for road access to the area for vegetation management.

The other road relocations would re-locate two segments of FS 50127 along the West Fork of the Weiser River from near the Forest boundary upstream to approximately the confluence of 4th of July Creek. FS 50127 would be relocated upslope to the existing (closed) FS 50580 and the existing (seasonal) FS 51422. This would remove (fully obliterate) FS 50127 from the RCA along the West Fork of the Weiser River, where the fill slope is eroding into the stream and trees have been removed along the right of way that provide shade to this water body with a TMDL for temperature.

Table 2-2. Alternative C Proposed Road Treatments by Subwatershed

Subwatershed	Existing System Road Miles/ Mapped Unauthorized Routes	System Road Decommissioning	Move to Long Term Closure (currently closed to the public)	Fish Passage Improvements	ATV Trail Conversion (currently Seasonally open road)	Restoration of Unauthorized Routes	Miles of Relocation and Re-route	Change to Motorized Access
Boulder Creek	93/22	60	2	16	0	15	Relocation 0 Re-route 0.6	-9.9
Lost Creek	183/73	26	35	11	12	51	Relocation 0 Re-route 0.1	-3.0
Lower West Fork Weiser	7/<1	3	0	0	0	1	Relocation 0 Re-route 2.0	-2.6
Upper West Fork Weiser	115/32	24	10	7	0	22	Relocation 0 Re-route 2.1	-11.4
Upper Weiser River	75/40	19	13	6	0	28	Relocation 0 Re-route 0	-2.6
Total	473/167	132	60	40	12	117	Relocation 0 Re-route 5.0	-29.8

Road Maintenance and Travel Management

System roads identified to remain on the landscape as part of the reduced MRS would be maintained and improved as described in the proposed action. Activities designed to reduce sediment production in the Boulder Creek subwatershed would be guided by site-specific (GRAIP) sediment modeling. All closed maintenance level 1 roads would receive appropriate long-term closure treatments including culvert removal, installation of drainage features, and establishment of vegetation to reduce erosion. All roads identified as closed to the public would receive an effective closure, such as gates or berms, or by obliteration of a short section or road and placement of rock or large woody debris.

Fish Passage/Habitat Connectivity

Within the Boulder Creek subwatershed, the 16 crossings identified as important fish passage barriers in streams occupied by ESA listed fishes or in DCH and their priority rating (Priority 1 or Priority 2), would

remain the same as in the proposed action. Twelve of those crossings would be addressed by removal as part of proposed road decommissioning. The four remaining crossings (which are located on steelhead DCH) would be replaced with appropriate crossing structures.

In addition to the aforementioned 16 crossings in the Boulder Creek subwatershed, an additional seven (mapped) perennial stream crossings would be removed during decommissioning on the northern portion of the Chokecherry Flat Road (FS50158) which would provide additional improvements in fish habitat connectivity in streams including: Pollock Creek, Cold Springs Creek, Bull Horn Creek, Star Creek and the North Fork of Star Creek. Additional stream crossing removals would also occur on unnamed and unmapped streams, but the exact number is not known.

Outside of the Boulder Creek watershed, actions regarding fish passage improvements would be identical to those described in the proposed action. Additional stream crossings would be removed through road decommissioning (when compared to the proposed action) but improvements to fish passage from those crossing removals is expected to be incremental.

2.6.4 Alternative C Recreation Improvements

The recreation portion of Alternative C would be the same as Alternative B with the following exceptions (see Figure 2-11):

The proposed OHV trail miles in the Lost Creek area are reduced to 11 miles, with reductions made to eliminate steep sections of routes not suitable for a sustainable trail. No additional routes would be identified between draft and final, so OHV trails would remain at 11 miles. OHV trails would be limited to “vehicles 50 inches and less in width (more typical of current ATV trails). Trails would be designed to meet Trail Class 2 standards for All-terrain vehicles as defined in FSH 2309.18 – Trails Management Handbook. These trails have a standard width of 48 – 60 inches, are on native material with limited grading, with structures minimum width being 60 inches.

In the Lost Creek area, approximately 20 miles of non-motorized, Trail Class 1 (minimally developed) (FSH 2353.142, Exhibit 01) with a managed and designed use for Pack and Saddle Stock use would be added to the trail system. These new trails would be also open to other non-motorized uses, including hiking and mountain biking. The added trails are primarily located on existing road prism. Approximately 3 miles of trail would need to be constructed to connect these proposed loops.

Lick Creek Trail #358, which accesses the Lick Creek Lookout, would receive heavy trail maintenance.

Dispersed camping using a motorized vehicle would be restricted to designated sites only on open roads throughout the project area. Approximately 200 sites could be designated (including the 68 sites proposed for designation surrounding the Lost Valley Reservoir road system).

Public Access

Open roads available for public access drops 41 miles from the existing condition to 224 miles of open road available for public access and recreation opportunities including, but not limited to hunting access, fire wood gathering, berry picking, scenic driving, and dispersed camping in designated sites along the open roads.

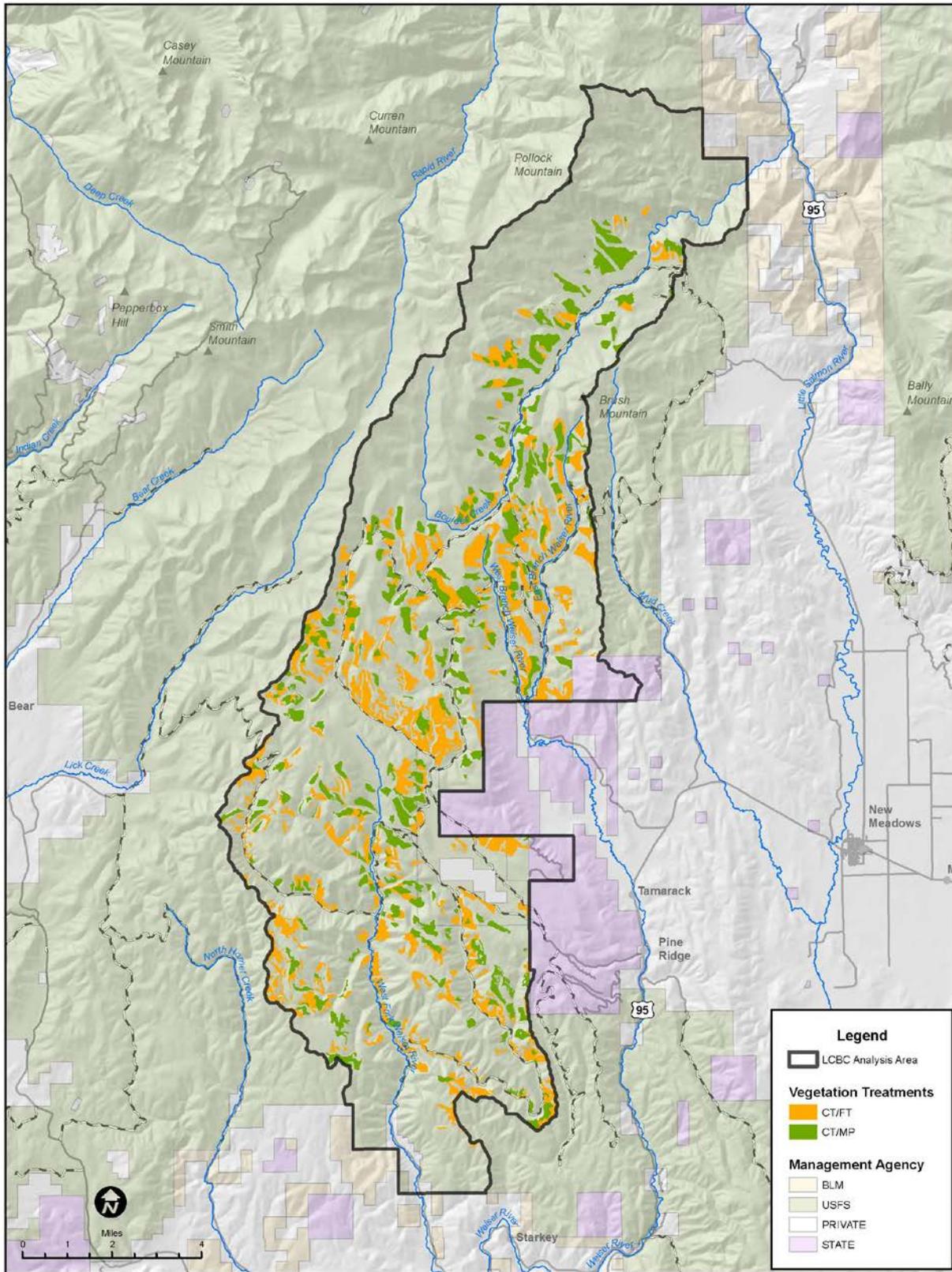


Figure 2-7. Alternative C Vegetation Treatments

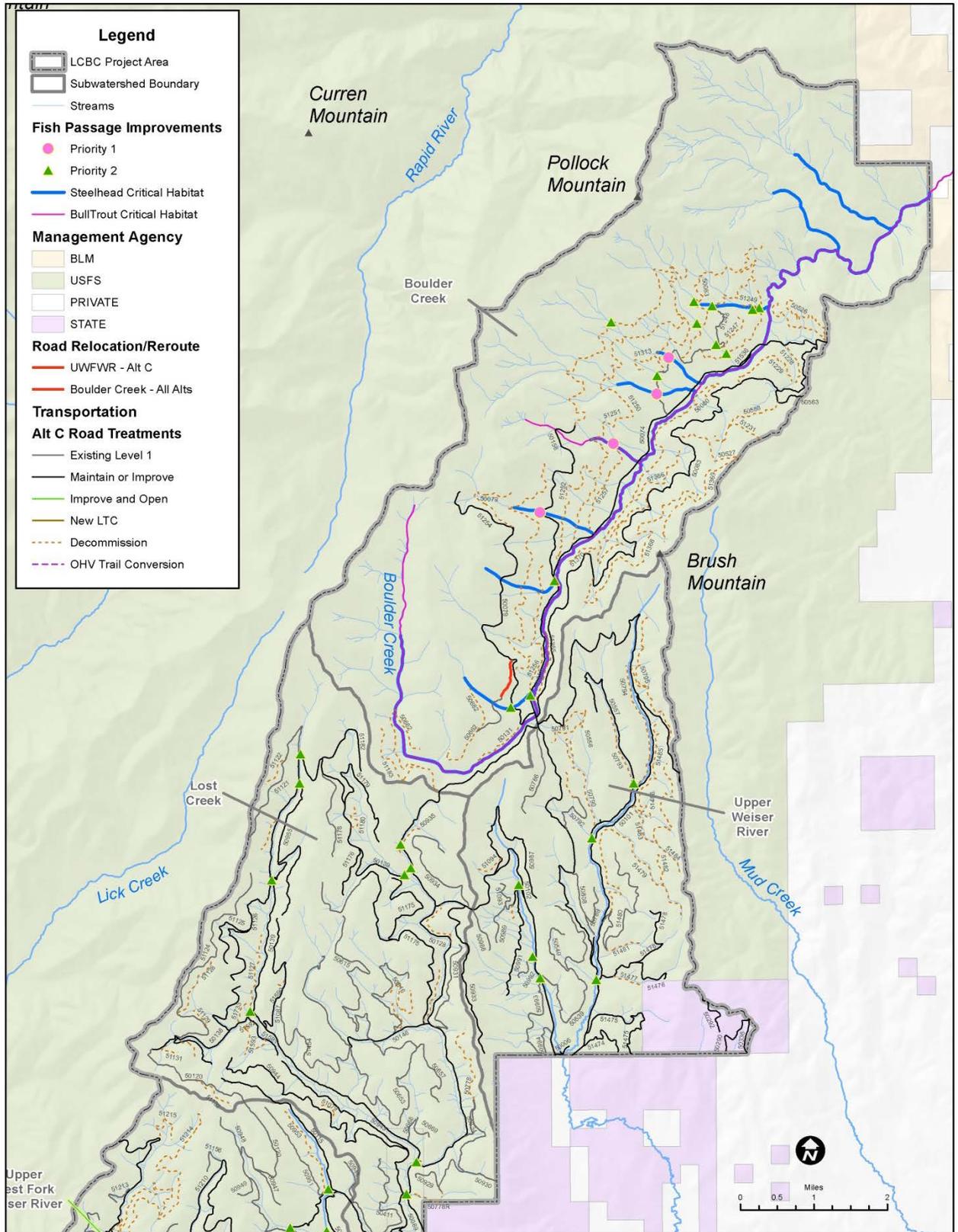


Figure 2-8. Alternative C Watershed Restoration Treatments, North

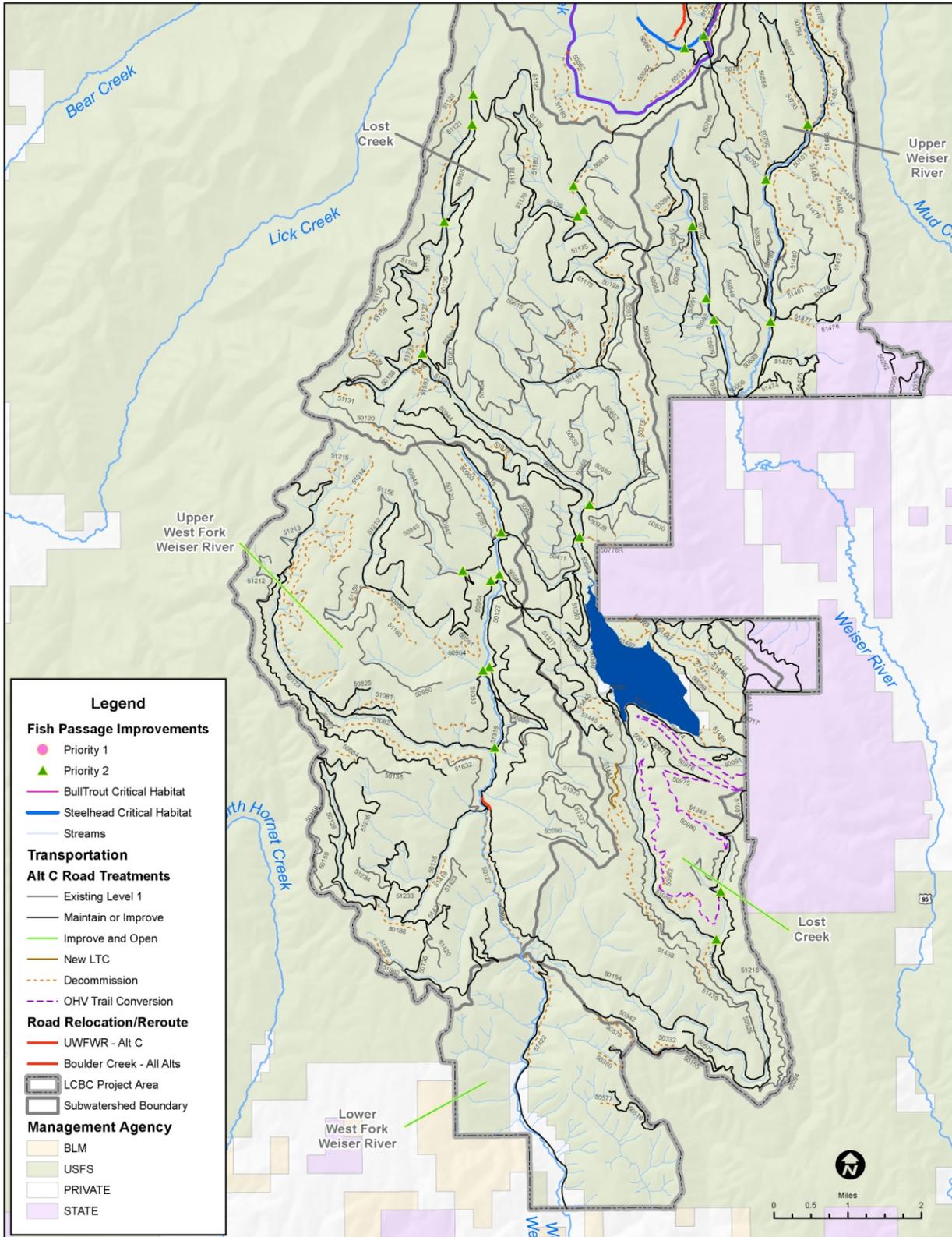


Figure 2-9. Alternative C Watershed Restoration Treatments, South

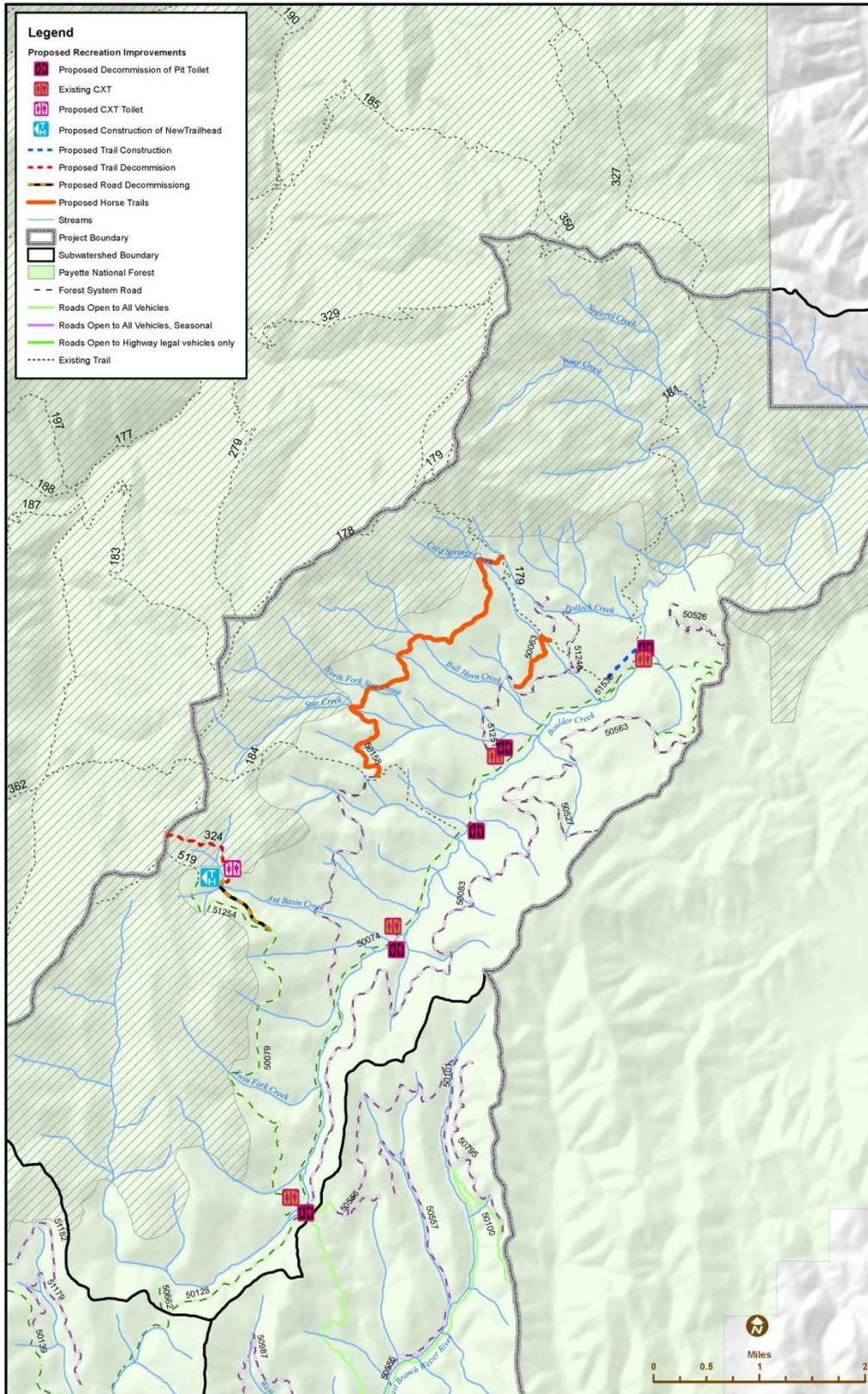


Figure 2-10. Alternative C Boulder Creek Recreation Improvements

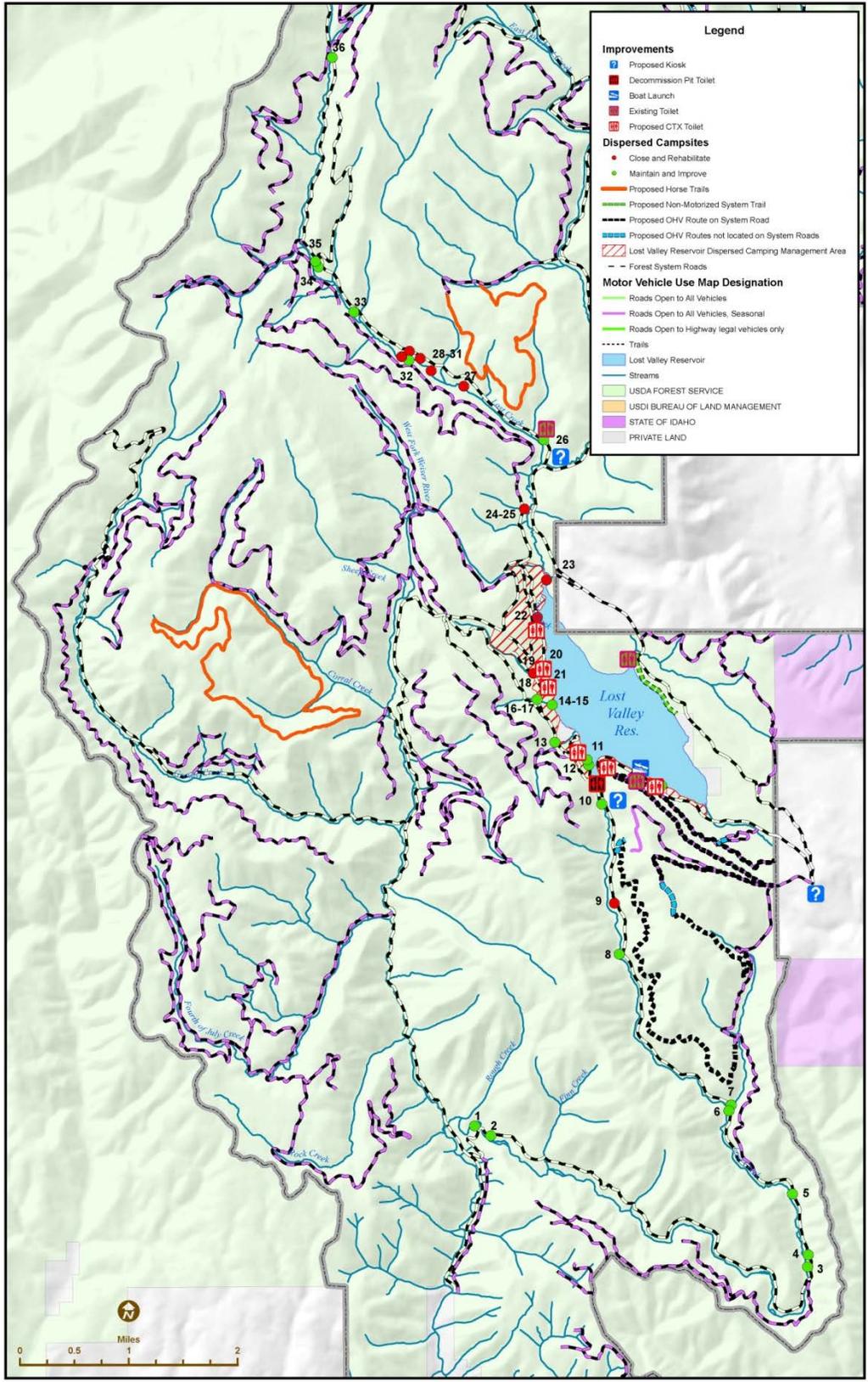


Figure 2-11. Alternative C Lost Creek Recreation Improvements

2.7 Alternative D

Alternative D responds to comments relating to the intensity and benefit of treatments (species composition, level of vegetation restoration, and spatial arrangement of forested vegetation).

2.7.1 Alternative D Vegetation Treatments

This alternative proposes the greatest amount and the most intensive vegetative treatments of all the alternatives (approximately 25,000 acres of commercial treatments and approximately 18,000 acres of non-commercial treatments). It has been designed to address concerns regarding the level of vegetative restoration and duration of benefits (see Figure 2-12).

The primary differences between Alternative D and the proposed action are additional vegetative treatments have been proposed and the regeneration treatments are more intensive.

Commercial Treatments

Commercial vegetative treatments would include: Commercial Thin-Free Thin (14,500 acres), Shelterwood with Reserves (2,600 acres), and Commercial Thin-Mature Plantations (8,100).

Commercial thin-free thin (CT-FT) – 14,500 acres. The purpose and description of these treatments would be similar to Alternative B except that:

The specifications for this treatment include:

- Where aspen are present, conifers could be removed within the aspen stand to improve the integrity of these stands. Openings of less than 10 acres may be utilized to stimulate aspen regeneration.
- In PVGs 1 and 2, the average canopy cover in these stands after harvest and underburn operations would be between 20 and 30 percent (10 to 25 foot crown spacing). In PVGs 5 and 6, average post treatment canopy cover would be between 30 and 35 percent (10 to 15 foot crown spacing).

The average canopy cover in these stands after harvest and underburn operations would be between 20 and 35 percent.

Shelterwood with Reserves – 2,600 acres. This alternative would utilize the shelterwood with reserves with reserves method to regenerate stands that do not have enough ponderosa pine, western larch and/or Douglas-fir to free thin throughout and retain these species in desired quantities.

These treatments would retain small clumps and patches of untreated areas throughout each stand to meet wildlife and visual quality objectives. The specifications for this treatment are:

- In regenerated portions of the stand retain a minimum of 8-12 trees per acre (approximately 10-12 percent canopy cover), preferably seral species in the dominant and codominant crown classes. If seral species are not available, dominant nonseral and vigorous serals in any crown class would be the second preference for reserve trees;
- Retain 5 to 10 percent of the stand area in untreated patches ranging from 1/10th to two acres in size. These patches should be located where there are clumps of seral species and/or around existing snags (preferably seral snag greater than 20 inches in diameter), when available;

Chapter 2 – Alternatives

- If portions of the stand could be treated with CT-FT treatment and retain a basal area of greater than 40 feet² of seral species, treat those areas with CT-FT treatment described above.

Commercial Thin / Mature Plantations (CT-MP) - 8,100 acres. These treatments would be identical to Alternative B.

Commercial Thin within RCAs-Commercial treatments within RCAs would be identical to Alternative B except an additional 200 acres of RCAs have been proposed for treatment bringing the total to 2,000 acres of CT-FT and CT-MP treatments in RCAs. Again, these treatments are not in addition to the CT-FT and CT-MP acres proposed above but are included in the totals for those treatments.

Non-commercial Treatments

Non-Commercial Thinning – 18,000 acres. Same as Alternative B.

Associated Actions

Actions associated with this alternative (road maintenance, temporary roads, harvest systems, and brush disposal) are identical to Alternative B except that additional site preparation and reforestation would be completed and 31 miles of planned temporary roads are proposed. Incidental temporary roads would be identical to Alternative B.

2.7.2 Alternative D Prescribed Fire Treatments

Prescribed fire actions under Alternative D would be the same as under Alternative B, the proposed action (see Figure 2-2). Additional acres of prescribed fire may be completed in areas thinned but not targeted for burning for brush disposal and site preparation objectives under this alternative.

2.7.3 Alternative D Watershed Improvement and Restoration Treatments

All project activities designed for watershed improvement (road treatments and fish passage improvements) would remain as described in the proposed action (Alternative B), with the exception that under Alternative D 12 miles of road would be changed to long-term closure (see Figures 2-13 and 2-14).

2.7.4 Alternative D Recreation Improvements

Recreation improvements under Alternative D would be the same as under Alternative B, the proposed action (see Figures 2-5 and 2-6).

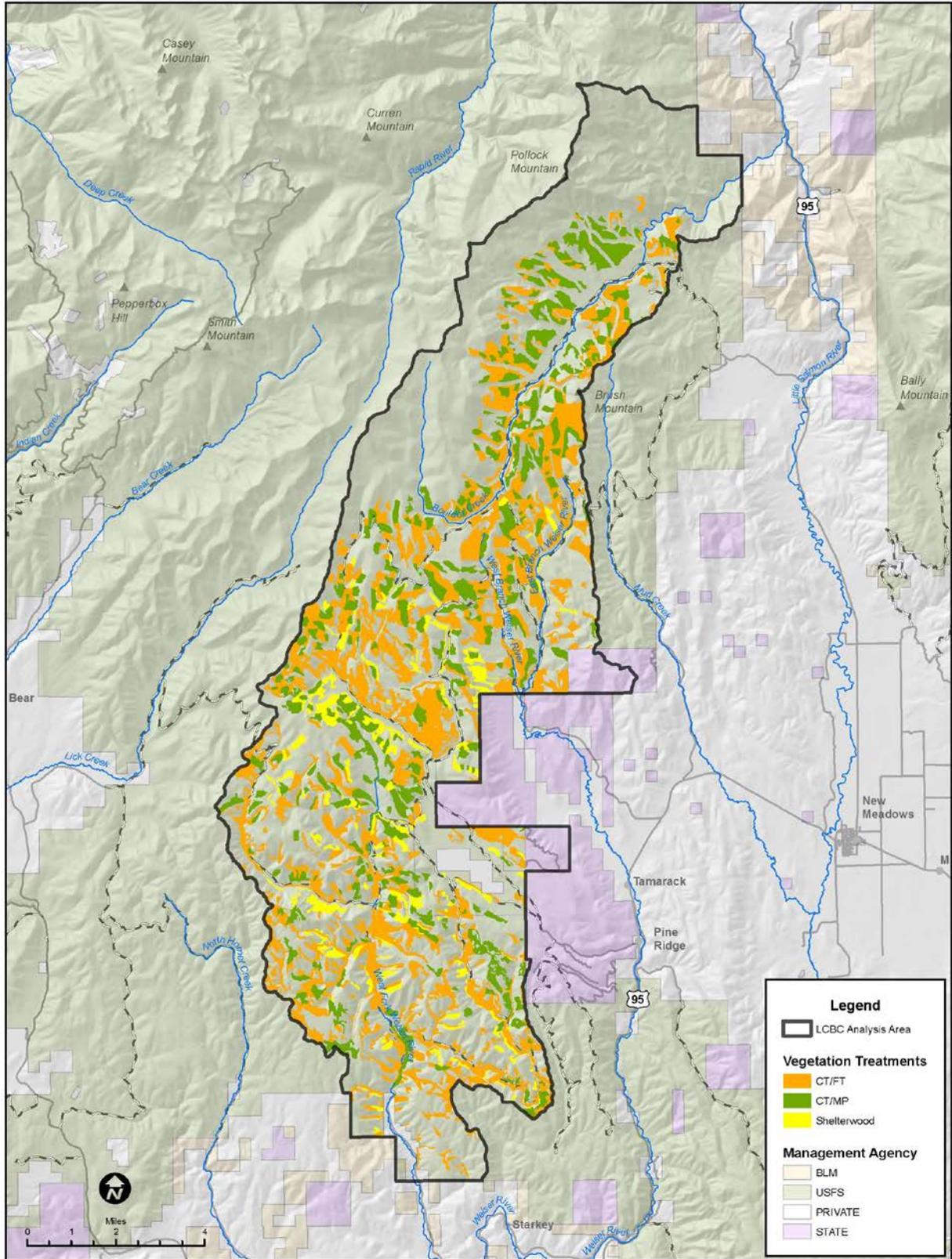


Figure 2-12. Alternative D Vegetation Treatments

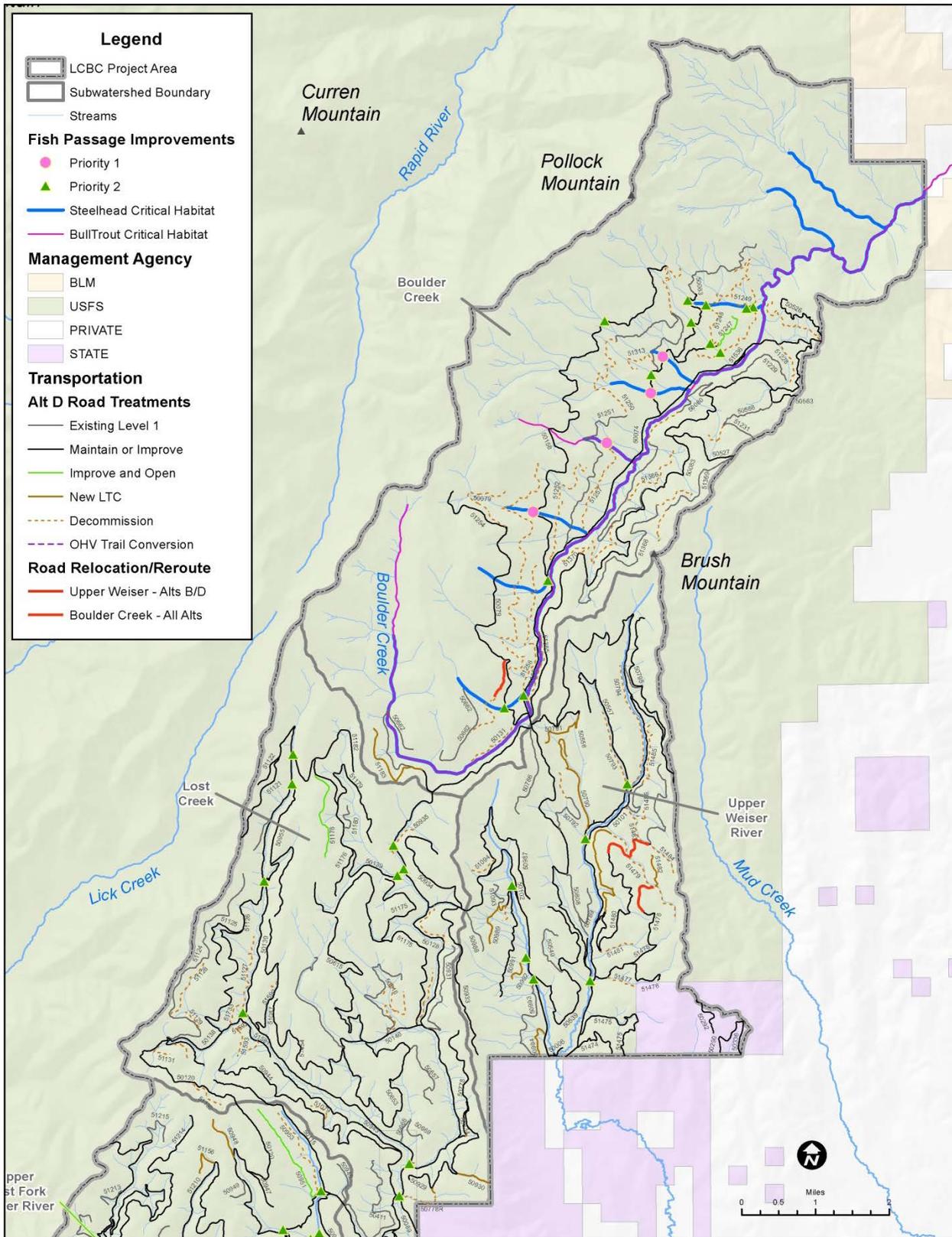


Figure 2-13. Alternative D Watershed Restoration Treatments, North

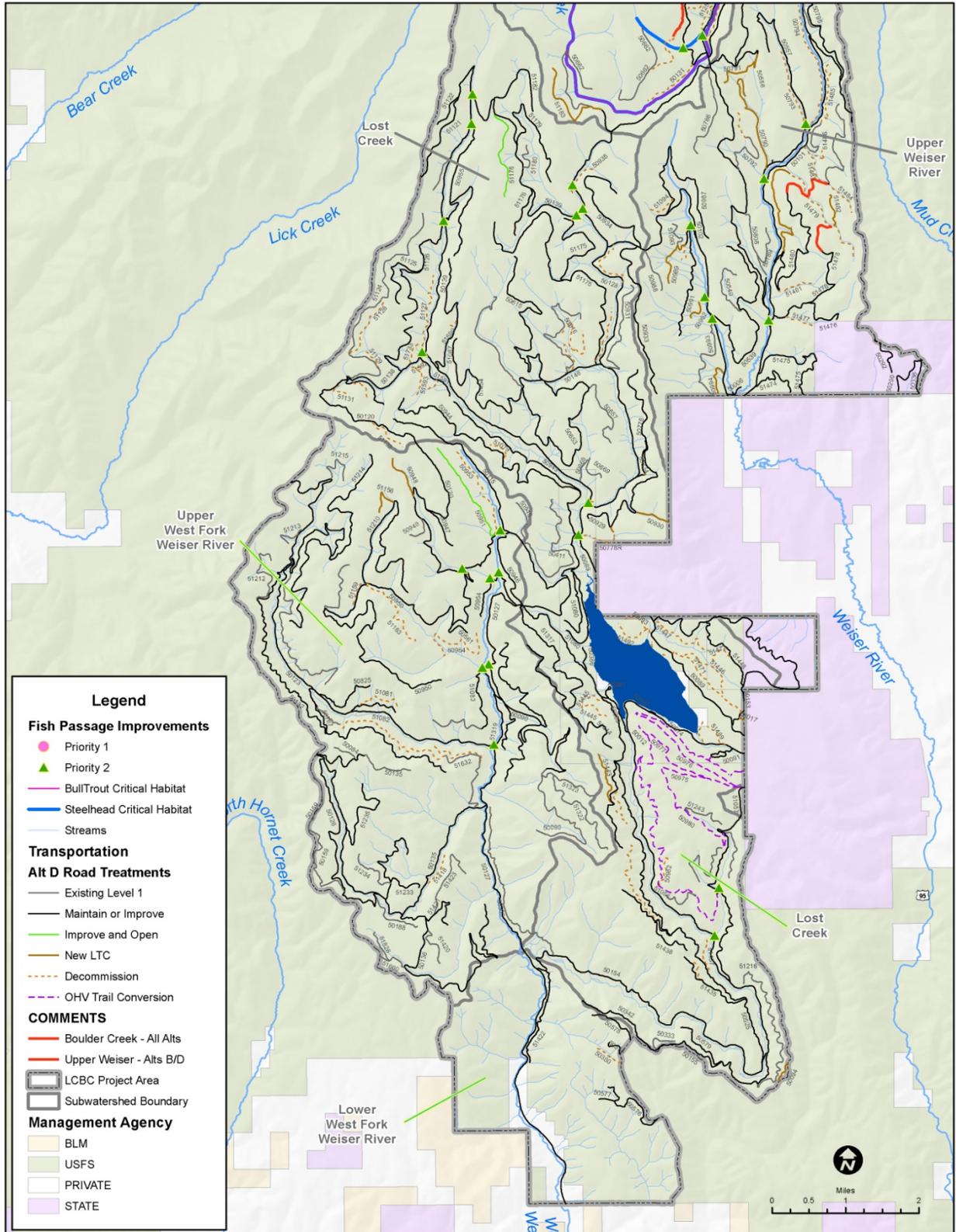


Figure 2-14. Alternative D Watershed Restoration Treatments, South

2.8 Alternative E.

Alternative E responds to comments that question the implementation costs of the project compared to projected economic and restoration benefits. It drops some of the more expensive treatments, while attempting to retain restoration goals of the proposed action.

2.8.1 Alternative E Vegetation Treatments

Similar treatments to Alternative D are proposed in Alternative E, although less acres of treatment have been proposed. Approximately 20,500 acres of commercial treatments and approximately 12,000 acres of non-commercial treatments are proposed in Alternative E (see Figure 2-15). Treatments are spatially arranged to create continuous blocks of habitat. In addition, some of the more expensive treatments have been limited in amount to create an alternative that is more cost conscientious than the other alternatives.

Commercial Treatments

Fewer commercial acres have been proposed because treatments have been designed to retain areas with elk security, to clump treatments and to minimize restoration treatments in mature plantations that are isolated from other commercial treatments.

Commercial thin-free thin (CT-FT) – 13,200 acres. This would be identical to Alternative D, except that fewer acres are proposed.

Shelterwood with Reserves – 1,900 acres. This treatment would be identical to the Shelterwood with Reserves treatment in Alternative D. Slightly fewer acres have been proposed to focus regeneration treatments adjacent to high priority CT-FT treatments.

Commercial Thin / Mature Plantations (CT-MP) – 5,400 acres. This alternative would treat fewer acres of mature plantations than any of the other alternatives in an attempt to minimize cost while prioritizing mature plantations that would best benefit from this treatment.

The description of this treatment in Alternative B would apply.

Commercial Thin within RCAs-Commercial treatments within RCAs would be identical to Alternative B except 200 acres less of RCAs have been proposed for treatment, bringing the total to 1,600 acres of CT-FT and CT-MP treatments in RCAs. Again, these treatments are not in addition to the CT-FT and CT-MP acres proposed above but are included in the totals for those treatments.

Non-commercial Treatments

Non-Commercial Thinning – 12,000 acres. Under Alternative E approximately 900 acres of plantation-specific thinning and 11,100 acres of ladder fuel thinning would occur. This is 30 percent less ladder fuel thinning than under Alternative B, the least amount of non-commercial thinning of all action alternatives.

Associated Actions

Associated actions in this alternative would be identical to Alternative D except that only 15 miles of planned temporary roads are proposed; and brush disposal would emphasize machine piling and burning, whole tree yarding and landing pile burning. Biomass removal would still be utilized but would only occur when necessary to meet other resource objectives (*i.e.* – visual quality, wildlife, SWRA).

2.8.2 Alternative E Prescribed Fire Treatments

Prescribed fire treatments under Alternative E would be identical to the proposed action with the following exceptions (see Figure 2-16):

- Total acres of total prescribed fire would be decreased by 30 percent (31,500 acres)
- Acres of prescribed fire applied annually would be decreased by 30 percent (500-7,000 acres)
- No prescribed fire treatments would be applied within the Boulder Creek Watershed

2.8.3 Alternative E Watershed Improvement and Restoration Treatments

System Road Treatments and Road Density

Alternative E identifies fewer system roads for decommissioning (obliteration) when compared to the proposed action. All system road decommissioning proposed in this alternative would fully recontour (obliterate) the road prism, unless not practicable (identical to the proposed action) (see Figures 2-17 and 2-18). System road decommissioning and resulting road density would remain the same as the proposed action in the Boulder Creek subwatershed as would the resulting watershed condition ratings.

In the remainder of the project area, the miles of system road decommissioning (obliteration) would be reduced by placing some of the roads identified for decommissioning in the proposed action into maintenance level 1 (long-term closure). If roads identified in the proposed action for decommissioning are currently maintenance level 1, they would be decommissioned (obliterated) as described in the proposed action (approximately 22 miles, excluding FS 51483 in the Upper Weiser River subwatershed, which would remain in maintenance level 1. If roads are currently maintenance level 2, and closed on the MVUM, they would be changed to maintenance level 1 and receive long-term closure treatments (including culvert removal, installation of drainage features, and establishment of vegetation to reduce erosion). An initial short section of road would be obliterated and rocks or large woody debris would be placed on the roadbed to provide an effective physical road closure.

Unauthorized Route Treatments.

Unauthorized route treatments would remain the same as the proposed action and are displayed in Table 2-3. All restoration treatments on unauthorized routes would be consistent with the description of treatments in the proposed action and would fully recontour (obliterate) the road prism unless not practicable. Exact treatments on each route may vary, but all actions would attempt to initiate ecological recovery of the road prism to regain hydrologic connectivity, sufficient ground cover, native vegetation and long-term soil productivity. Travel Plan closures would be enforced by deterring access where illegal motorized use has been occurring.

Road-relocations and Re-routes

The only re-route proposed in this alternative is in the Boulder Creek subwatershed which would connect FS 51255 to FS 50079 by re-constructing the existing unauthorized route 512552000. This re-route would allow access to the area without incurring the cost of building a connector for 50662. FS 51255 and FS 50662 would remain in long term closure after the sale is complete.

Table 2-3. Alternative E Road Treatments

Subwatershed	Existing System Road Miles/ Mapped Unauthorized Routes	System Road Decommissioning	Move to Long Term Closure (currently closed to the public)	Fish Passage Improvements	ATV Trail Conversion (currently Seasonally open road)	Restoration of Unauthorized Routes	Miles of Relocation/Re-Route	Change to Motorized Access
Boulder Creek	93/22	29	2	16	0	12	Relocation 0 Re-route 0.6	-1.0
Lost Creek	183/73	13	35	0	12	40	Relocation 0 Re-route 0	-1.4
Lower West Fork Weiser	7/<1	0	0	0	0	0	Relocation 0 Re-route 0	-.04
Upper West Fork Weiser	115/32	6	10	0	0	20	Relocation 0 Re-route 0	-.06
Upper Weiser River	75/40	3	13	0	0	18	Relocation 0 Re-route 0	-.05
Total	473/167	51	60	16	12	90	Relocation 0 Re-route 0.6	-3.9

Road Maintenance and Travel Management

Roads identified to remain on the landscape as part of the MRS would be maintained and improved as described in the proposed action. Activities designed to reduce sediment production in the Boulder Creek subwatershed would be guided by site-specific (GRAIP) sediment modeling. Closed maintenance level 2 roads identified to become maintenance level 1 roads would receive long-term closure treatments including culvert removal, drainage features, and establishment of vegetation to reduce erosion. All roads identified as closed to the public would receive effective closure.

Fish Passage/Habitat Connectivity

The 16 crossings identified in the Boulder Creek subwatershed would be improved (removed or replaced) as described in the proposed action. The 24 fish passage improvements in the Weiser River subbasin identified in the proposed action would not be addressed with this project.

2.8.4 Alternative E Recreation Improvements

Recreation improvements under Alternative E would be the same as under Alternative B, the proposed action (see Figures 2-5 and 2-6).

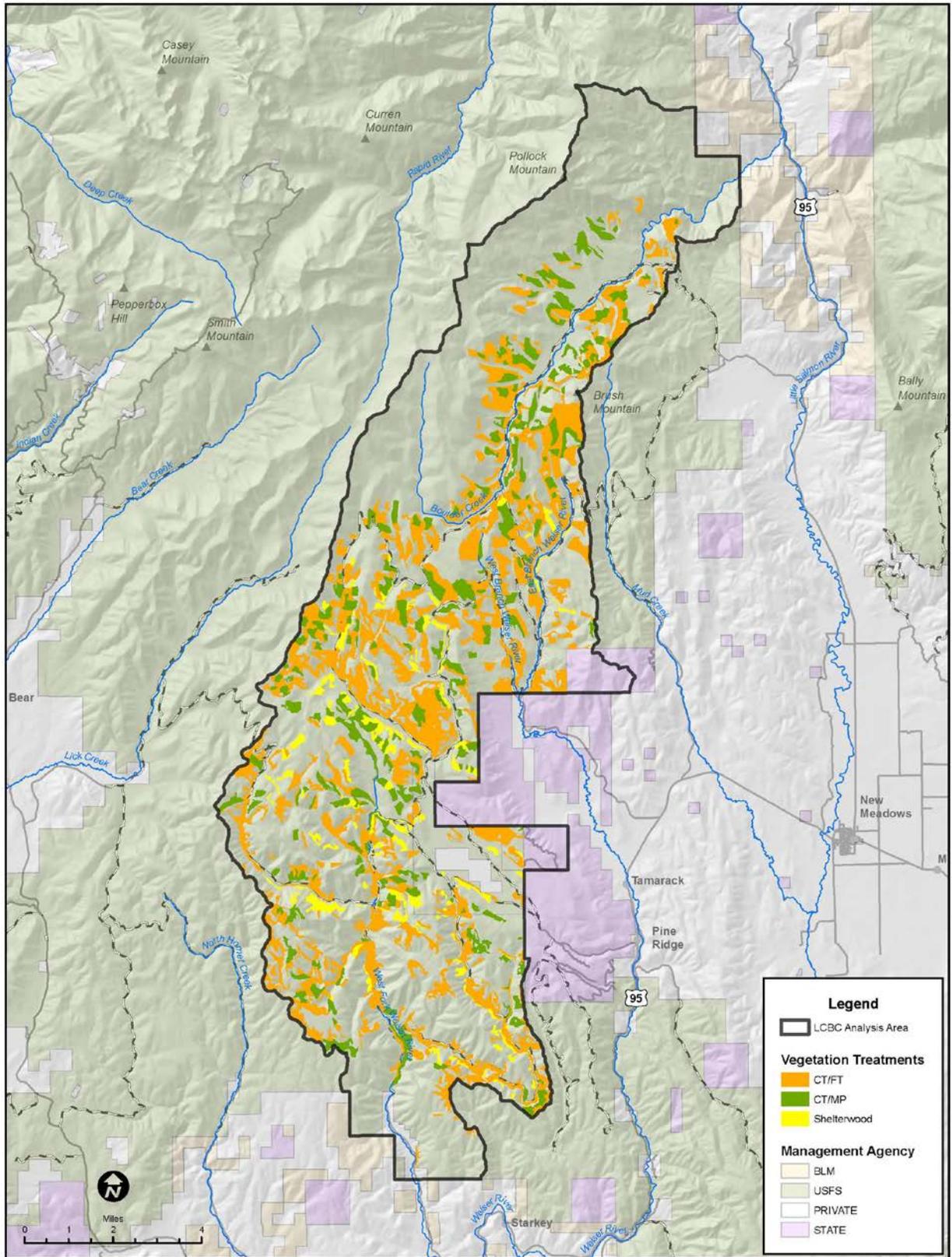


Figure 2-15. Alternative E Vegetation Treatments

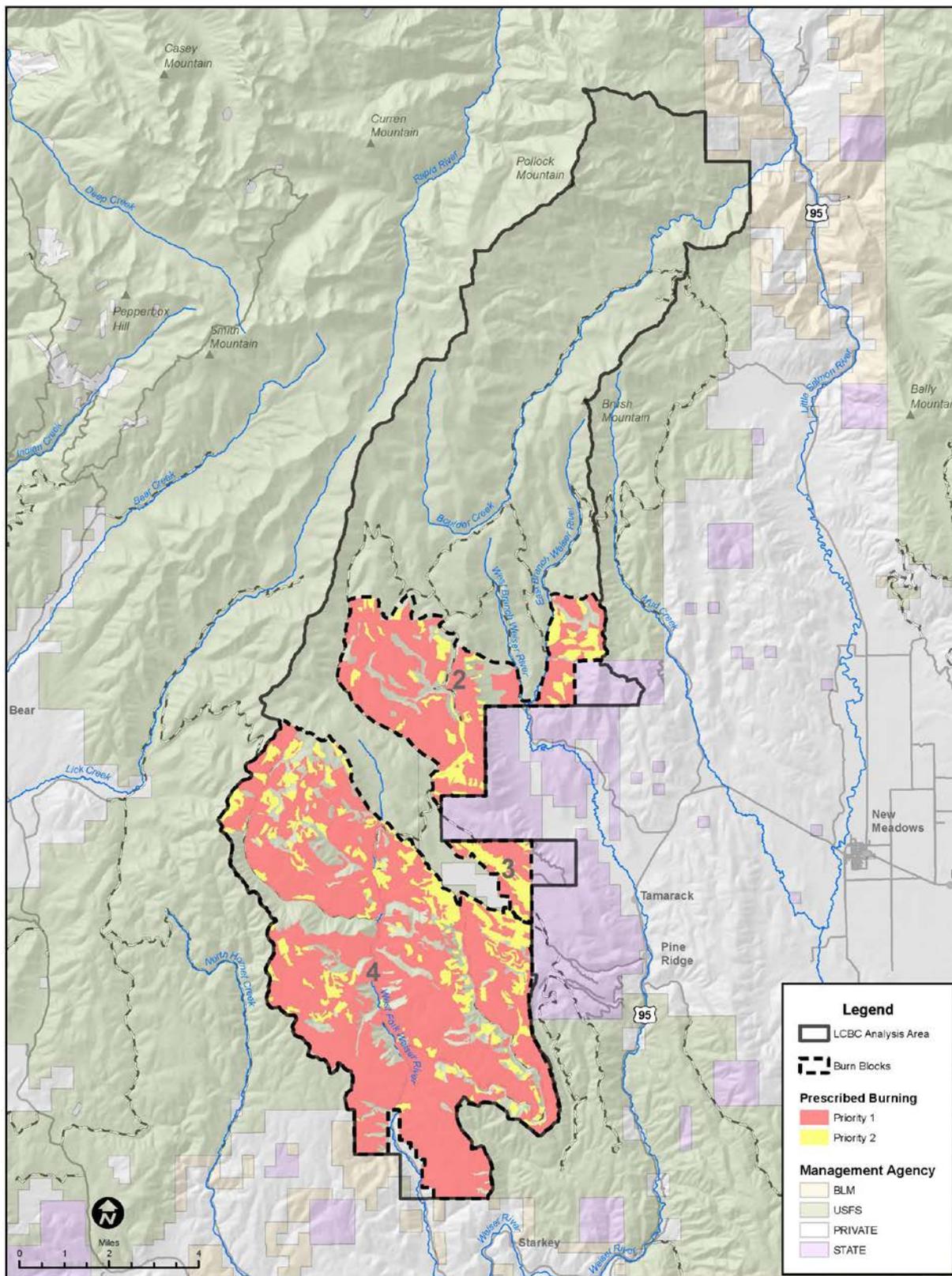


Figure 2-16. Alternative E Prescribed Fire Treatments

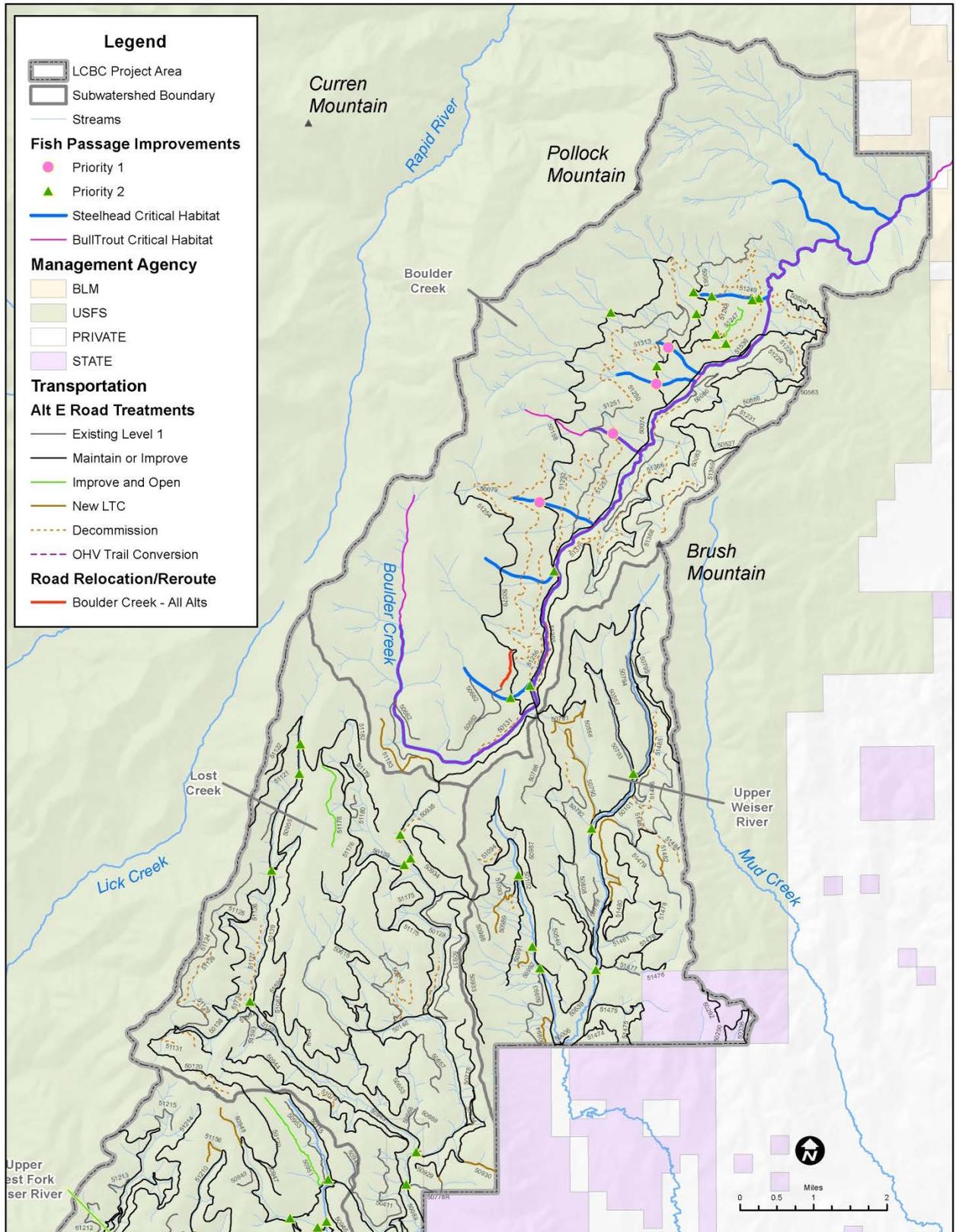


Figure 2-17. Alternative E Watershed North

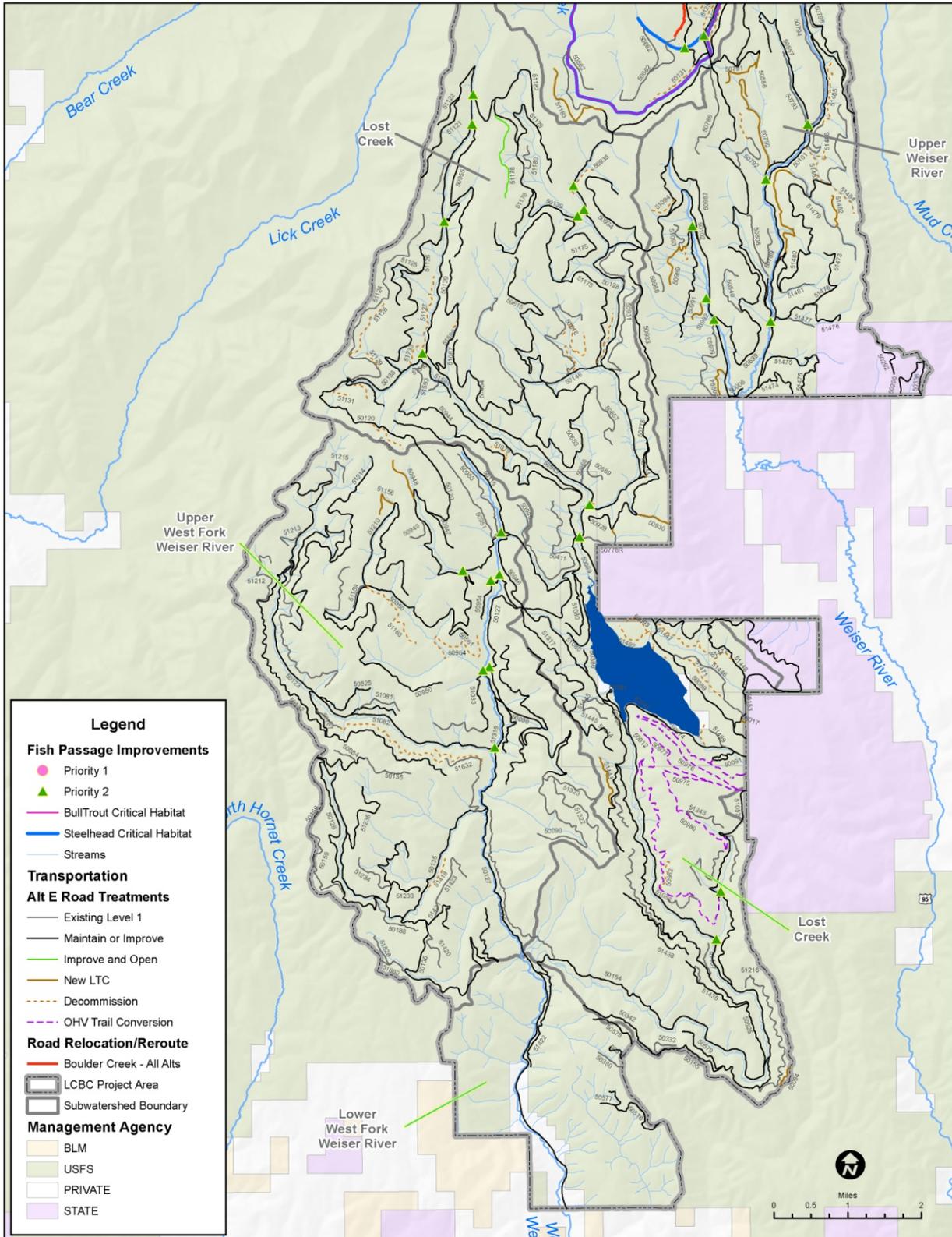


Figure 2-18. Alternative E Watershed South

2.9 Management Requirements

Management requirements are standards project activities must adhere to that are established to protect Forest resources; they may be implemented before, during or after a project to meet Forest Plan and other direction. The proposed action includes the management requirements and project design features listed in Tables 2-4 and 2-5. More management direction, including a complete list of standards and guidelines that apply to all action alternatives, can be found in the Forest Plan.

Table 2-4. Management Requirements

Management Requirements	Objective	Implementation Mechanism
Forested Vegetation		
The activity area shall be used to assess snag and coarse wood conditions for vegetation management actions (<i>Forest Plan p. III-30, VEST1</i>).	Retain CWD to maintain soil productivity, ecological function and other benefits	Silvicultural Prescription
Vegetation management actions associated with developed recreation shall be designed to meet recreation objectives, not vegetative desired conditions described in Appendix A. (<i>Forest Plan p. III-30, VEST2</i>).	Protect investments in developed recreation areas.	Silvicultural Prescription
Minimum stocking requirements for plantation certification shall meet those specified by PVG in the Forest Plan. (<i>Forest Plan p. III-42, TRST1</i>).	Ensure adequate stocking and consistency with the NFMA.	Silvicultural Prescription
Even aged regeneration treatments shall not exceed 40 acres and shall be separated by stands not defined as an opening. (<i>Forest Plan p. III-42, TRST2</i>).	Ensure consistency with NFMA.	Silvicultural Prescription
Openings created by timber harvest will no longer be considered an opening when a new forest stand is established as documented through certification exams. (<i>Forest Plan p. III-43, TRST3</i>).	Ensure consistency with NFMA.	Silvicultural Prescription
Wood products harvested within RCAs, from high risk landslide prone areas and/or PVG 1 shall not contribute to the Allowable Sale Quantity. (<i>Forest Plan p. III-43, TRST4 and 5</i>).	Ensure treatments on lands determined to be not suited for timber production are designed to meet other resource needs/concerns.	Silvicultural Prescription
No regeneration harvest within the Boulder Creek Watershed shall occur regardless of the MPC. (<i>Forest Plan p. III-150, TRST0457 and p. III-159, TRST0509</i>).	Ensure consistency with the Forest Plan regarding treatments.	Silvicultural Prescription
SWRA (Soil, Water, Riparian, and Aquatic Resources) - Forest-wide Management Direction		
Trees that are felled within RCAs must be left unless determined not to be necessary for achieving soil, water, riparian and aquatic desired conditions. Felled trees or snags left in RCAs shall be left intact unless resource protection or public safety requires bucking them into smaller pieces (<i>Forest Plan p. III-22, SWST10</i>).	Retain LWD in riparian areas to be available for sediment filtering, recruitment in streams, and for soil needs.	Contract specifications
Do not store fuel or other toxicants or perform refueling within RCAs. Exceptions must have authorization of fish biologist or hydrologist and have approved spill containment plan commensurate with the amount of fuel stored (<i>Forest Plan p. III-22, SWST11</i>).	Reduce potential for fuel spills that could affect fish or fish habitat.	Contract specifications

Chapter 2 – Alternatives

Management Requirements	Objective	Implementation Mechanism
<p>Diversity and productivity of native and desired non-native plant communities in riparian conservation areas:</p> <ul style="list-style-type: none"> a) Provide amounts and distribution of large woody debris consistent with desired forest vegetation conditions described in Forest Plan Appendix B; b) Provide adequate summer and winter thermal regulation within the aquatic and riparian zones; and c) Achieve rates of surface erosion, bank erosion and chemical migration characteristic of those under which the communities developed. (<i>Forest Plan p. III-19 SWGO15</i>) 	<p>Maintain LWD, stream shading for thermal regulation and maintain sediment levels.</p>	<p>Project design features</p>
<p>Management actions shall be designed in a manner that maintains or restores water quality to fully support beneficial uses and native and desired non-native fish species and their habitat (<i>Forest Plan p. III-21, SWST01</i>).</p>	<p>Design and implement management programs and plans that will restore water quality and watershed function to support beneficial uses.</p>	<p>Project design</p>
<p>Apply Best Management Practices (BMPs) as described in Soil and Water Conservation Practices, to all ground disturbing activities (<i>Forest Plan p. III-18, FSM 2530, FSH 2509.22, Soil and Water Conservation Practices Handbook</i>).</p>	<p>Reduce or minimize effects of management activities on soil and water resources.</p>	<p>Contract specifications, mitigation measures</p>
<p>Maintain detrimental disturbance levels at 15 percent or less within activity areas following completion of proposed activities (<i>Forest Plan p. III-21, SWST02, FSH 2509.18</i>).</p>	<p>Maintain the physical, chemical, and biological properties of soils to support desired vegetation conditions and soil-hydrologic functions and processes within watersheds.</p>	<p>Contract specifications, mitigation measures</p>
<p>Apply mitigation and restoration measures within the activity area so that total soil resource commitment (TSRC) levels are moved back toward 5 percent or less following completion of the activities (<i>Forest Plan p. III-21, SWST03</i>).</p>	<p>Limit the extent of soil committed to non-productive land uses, such as roads and landings, to the minimum necessary for Forest management. Maintain soil productivity and ecological processes where functioning properly, and restore where currently degraded.</p>	<p>Contract specifications, mitigation measures</p>

Management Requirements	Objective	Implementation Mechanism
<p>Neither degrade nor retard attainment of properly functioning soil, water, riparian, and aquatic desired conditions except where outweighed by demonstrable short or long-term benefits to watershed resource conditions or where the Forest Service has limited authority (such as access roads) (<i>Forest Plan p. III-22, SWST04, FSH 2520</i>).</p>	<p>Maintain surface and ground water in streams, lakes, wetlands, and meadows to support healthy riparian and aquatic habitats; stability and effective function of stream channels; and downstream uses. Restore and maintain flow regimes sufficient to create and sustain soil-hydrologic and water quality conditions; and riparian, aquatic and wetland habitat; and to achieve patterns of sediment, nutrient, and large woody debris routing within their inherent range of capability.</p>	<p>Project design, contract specifications, mitigation measures</p>
<p>Within legal authorities, ensure that new proposed management activities within watersheds containing 303(d) listed waters improve or maintain overall progress toward beneficial use attainment for pollutants that led to the listing (<i>Forest Plan p. III-22, SWST07</i>).</p>	<p>Manage water quality to meet requirements under the Clean Water Act, with special emphasis on de-listing water quality limited waters under section 303(d) and supporting stated development and implementation of TMDLs.</p>	<p>Project design, contract specifications, mitigation measures</p>
<p>Conduct site-specific analysis or field verification of landslide-prone models to identify areas of landslide prone in proposed management areas that may alter soil-hydrologic processes. Design management actions to avoid the potential for triggering landslides (<i>Forest Plan p. III-23, SWST12</i>).</p>	<p>Provide for stream channel integrity, channel processes, and the sediment regime under which the riparian and aquatic ecosystems evolved.</p>	<p>Project design, mitigation measures</p>
<p>Conduct field verification to delineate perennial and intermittent streams, seeps, springs, and bogs for riparian and wetland buffers (<i>FSM 2520</i>).</p>	<p>Ensure protection of riparian areas and wetlands.</p>	<p>Level II Riparian Inventory mapping to determine flow regime. Timber sale layout will further verify flow regime and delineations and determine project design.</p>
<p>Conduct site-specific analysis or field verification of landslide-prone models to identify areas of landslide prone in proposed management areas that may alter soil-hydrologic processes. Design management actions to avoid the potential for triggering landslides (<i>Forest Plan p. III-23, SWST12</i>).</p>	<p>Avoid altering vegetation or hydrologic conditions on landslide prone areas and increasing potential which could increase probability of slope failure.</p>	<p>Project design, mitigation measures</p>

Chapter 2 – Alternatives

Management Requirements	Objective	Implementation Mechanism
Wildlife		
The Forest shall consult with the National Marine Fisheries Service and Fish and Wildlife Service as needed, and appropriate, to comply with consultation requirements under the Endangered Species and Magnuson-Stevens Act. (Forest Plan p. III-11, TEST01)	Fulfill requirements for consultation regulations	Project design feature
Design and implement projects to meet the terms of Forest Service approved portions of recovery plans. If a recovery plan does not yet exist, use the best information available (for example, BAs, BOs, letter of concurrence, Forest Service–approved portions or Conservation Strategies) until a recovery plan is written and approved. (Forest Plan p. III-11, TEST03)	Ensure the project components meet the intent of the Forest Plan	Project design feature
Mitigate, through avoidance or minimization, management actions within known nesting, wintering, or roosting sites of TEPC species if those actions would adversely affect the survival of wintering or roosting populations. During project planning, determine sites, periods, and appropriate mitigation measure to avoid or minimize effects. (Forest Plan p. III-11, TEST13)	Comply with mitigation measures designed to avoid disturbance of nesting, wintering, or roosting sites.	Project design feature
Range Resources		
After completing vegetation treatments, livestock grazing practices (for example, salting locations, rest, temporary closure of stock water, herding, season of use, duration, and temporary electric fencing) may be altered as needed to hasten or enhance site recovery or treatment (Forest Plan p. III-46, RAGU03).	Minimize impacts from livestock grazing.	Annual Operating Instructions
TES Plants		
Management actions that occur within occupied, sensitive plant species habitat must incorporate measures to ensure habitat is maintained where it is within desired conditions, or restored where degraded (Forest Plan p. III-33, BTST01).	Minimize negative impact to sensitive plant habitat. Restore degraded habitat.	Project design
Cultural Resources		
Avoid all known cultural sites during project implementation. If a new cultural site is discovered during the project, stop activities in the area until a Forest Service archaeologist evaluates the site and its importance. Apply any protective measures recommended (National Historic Pres. Act, Forest Service Manual, Forest Plan p. III-69 to III-70).	Protect cultural resources until they can be evaluated for eligibility to the National Register.	Project design
Recreation		
All projects shall be designed to meet the adopted Visual Quality Objectives (VQOs) as displayed on the Forest VQO map. (Forest Plan p. III – 67, SCST01).	Protect or enhance Forest scenic value.	Project design

2.10 Project Design Features/Mitigation Measures

The project design features and mitigation measures listed in the following table are practices that the ID team developed during this analysis to address site-specific environmental and resource concerns not sufficiently addressed by existing management requirements. Project design features are specific actions designed to address site-specific environmental or resource concerns that were not sufficiently addressed by existing management requirements. Project design features/mitigations occur during or after project implementation and can include avoiding the effect, minimizing the effect by limiting the action, rectifying the effect, reducing the effect through maintenance, or compensating for the effect.

Table 2-5. Project Design Features/Mitigation Measures

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/Responsibility
FORESTED VEGETATION				
1	<p>In each treatment unit, coarse woody debris (tons per acre) will be evaluated to ensure desired ranges based on PVG. If necessary, material will be left behind of the appropriate size classes to meet standards.</p> <p>When coarse woody debris in the larger size classes is not available for retention in an activity area, smaller size classes may be utilized to meet desired conditions described in Forest Plan Appendix A. These smaller size classes should only be utilized when the resulting fire hazard risk will remain within defined fuels management objectives. Fire hazard risk as it relates to both the activity unit and adjacent areas should be considered.</p>	Forest Plan consistency	Moderate to High: Experience	<p>Silviculturist</p> <p>Contract Administrator</p> <p>Fuels Management Specialist</p> <p>Silvicultural Prescription</p> <p>Contract Burn Plan</p>
2	<p>Management activities shall emphasize:</p> <p>Leave all dead standing trees (snags), unless falling is necessary for safety.</p> <p>Retention of snags away from roads to reduce the potential for removal.</p>	Maintain snags for long-term site productivity and wildlife species	High: Experience	<p>Silviculturist</p> <p>Contract Administrator</p> <p>Fuels Management Specialist</p> <p>Silvicultural Prescription</p> <p>Contract Burn Plan</p>
3	Sufficient live trees of appropriate size should be retained for future CWD and snag recruitment where CWD or snag levels are below desired ranges (to meet Appendix A, PNF Plan).	Move toward desired CWD and snag levels	Moderate to High: Experience	<p>Silviculturist</p> <p>FMS</p> <p>Silvicultural Prescription</p> <p>Burn Plan</p>
4	<p>Retain forest stands that meet the definition of large tree size class.</p> <p>Management actions are permitted in such stands as long as they will continue to meet the definition of a large tree</p>	Ensure movement toward desired tree size	High: Experience	<p>Silviculturist</p> <p>Contract</p>

Chapter 2 – Alternatives

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
	size class stand.	objectives defined in the Forest Plan.		Administrator FMS Silvicultural Prescription Contract Burn Plan
5	Prior to decommissioning routes or completing long-term closure activities, approval by the District TMA or silviculturist shall be obtained to ensure that utilization of these routes for access, haul and/or skid trail is not necessary to complete any planned or proposed vegetation treatments.	Utilize existing routes to complete vegetation treatments.	Moderate to High: Experience	Hydrologist / Soil Scientist/ District Timber Management Assistant
6	All acres treated with thinning or prescribed fire treatments require a silvicultural prescription. (Forest Service Manual/Handbook Direction)	Ensure movement toward desired conditions to meet stand objectives.	Moderate: Experience	Silviculturist FMS Silvicultural Prescription Burn Plan
7	The Lost Valley and Boulder Creek progeny sites will have treatments designed to continue the use of the stands for research and for the Regional Tree Improvement Program.	Protect the integrity of long-term inventory plots, and high-value tree improvement trees.	High: Experience	Silviculturist Silvicultural Prescription

Project Design Features	Objective	Effectiveness	Enforcement Mechanism/ Responsibility	
SOIL, WATER, RIPARIAN AND AQUATIC RESOURCES				
SWRA - Vegetation Treatments				
8	<p>The project has selected Option 2 (Appendix B of the Forest Plan) in the step-down process to delineate RCAs associated with a Forested fish-bearing stream. Option 2 uses two site-potential tree heights (240 feet) for perennial streams and intermittent streams providing fish habitat. One site potential tree height (120 feet) would be applied to intermittent streams (not providing seasonal fish habitat). Buffers (RCAs) would also be applied to any unmapped streams discovered during implementation.</p>	<p>Maintain riparian function (including Bull Trout, Steelhead and Chinook salmon designated critical habitat where applicable).</p>	<p>High: experience, logic, Belt <i>et al.</i> 1992, McDade <i>et al.</i> 1990. Gregory <i>et al.</i> 1991.</p>	<p>Contract Administrator, Contract, Fisheries Biologist or Hydrologist.</p>
9	<p>No harvest or related equipment operations (unless on a system road prism) would occur within 240 feet of perennial stream channels (and intermittent channels providing seasonal fish habitat) or within 120 feet of intermittent stream channels outside of Boulder Creek and unless identified as an area for RCA vegetation treatments.</p> <p>Standard RCA Buffers would also be applied to any unmapped RCAs discovered during implementation.</p> <p>If activities in RCAs are necessary for implementation of vegetation treatments (such as existing unauthorized roads, temporary roads to connect harvest units to existing roads, skyline anchors, new skid trails or landings within RCAs) those actions would be evaluated and approved by a fisheries biologist or hydrologist. Hydrologist or fisheries biologist will provide site specific mitigation or design feature to minimize or mitigate effects to riparian resources.</p>	<p>Maintain riparian function (including Bull Trout, Steelhead and Chinook salmon designated critical habitat where applicable).</p>	<p>High: experience, logic, Belt <i>et al.</i> 1992, McDade <i>et al.</i> 1990. Gregory <i>et al.</i> 1991.</p>	<p>Contract Administrator, Contract, Fisheries Biologist or Hydrologist.</p>
10	<p>The following guidelines would generally be used for RCA treatment layout and implementation:</p> <ol style="list-style-type: none"> 1. Only upland vegetation in the outer portion of the RCA would be treated with intermediate silvicultural treatments. 2. Along intermittent streams, thinning and limited equipment use could only occur in the outer 60 feet of the RCA. Generally, no cutting of vegetation would occur within 60 feet of the stream. 3. Along perennial streams, thinning and limited equipment use could only occur in the outer 120 feet of the RCA. Generally, no cutting of vegetation would occur within 120 feet of the stream. <p>No ground-based harvest is allowed in RCAs unless otherwise approved by aquatics or soils specialist. Jammer or skyline yarding would be completed from existing roads or from outside the RCA, unless otherwise</p>	<p>Maintain riparian function (including Bull Trout, Steelhead and Chinook salmon designated critical habitat where applicable).</p>	<p>High: experience, logic, Belt <i>et al.</i> 1992, McDade <i>et al.</i> 1990. Gregory <i>et al.</i> 1991.</p>	<p>Contract Administrator, Contract, Fisheries Biologist or Hydrologist.</p>

Chapter 2 – Alternatives

Project Design Features	Objective	Effectiveness	Enforcement Mechanism/ Responsibility
<p>approved.</p> <p>4. No harvesting would be allowed in the no-cut zones. Cutting of individual trees within the no-cut zone may be approved in rare instances on a case-by-case basis but no removal of that material would be permitted.</p> <p>5. RCA treatments would create a transition zone between harvest units and the “no cut” zone. Transition zones would maintain adequate recruitable LWD and shading to stream channels.</p> <p>6. RCA treatments would not reduce canopy cover more than 20 percent from existing condition. Site specific prescriptions would be developed in consultation with the district fish biologist and/or hydrologist to ensure that riparian functions are maintained.</p> <p>7. RCAs discovered during layout may be considered for treatment if:</p> <p>1) they meet the intent of RCA treatments;</p> <p>2) all project design features and restrictions can be adhered to; and</p> <p>3) They fall outside of the Boulder Creek drainage.</p>			
<p>11 No prescribed fire treatments (direct ignition or ladder fuel treatments) would occur within RCAs in the Boulder Creek subwatershed. In the remaining portions of the Project Area, ignition operations within RCAs shall be implemented to maintain RCA function and processes by creating a mosaic of burned and unburned areas, minimizing severity and intensity; maintaining stream-shading vegetation; retaining adequate ground cover and sediment filtering capacity; and maintaining current and recruitable large and coarse woody debris. In RCAs identified for treatment, no ignitions within 120 feet of perennial stream channels or within 60 feet of intermittent stream channels will occur. Direct ignitions could occur anywhere in any RCA if needed to contain fire spread. Ignition operations should generally only occur in the outer portions of RCAs in the drier PVGs where fuels reduction is needed to increase the resiliency of the RCA and reduce the potential for high intensity/severity wildfire. If any areas are not capable of carrying fire or maintaining RCA function and processes (as described above) at the time of fire application, fire will not be applied.</p> <p>Ladder fuel treatments conducted as part of prescribed burning activities may be implemented to protect the overstory from effects of prescribed fire and to meet</p>	<p>Maintain riparian function (including Bull Trout, Steelhead and Chinook salmon designated critical habitat where applicable).</p>	<p>High: experience, logic, Belt <i>et al.</i> 1992, McDade <i>et al.</i> 1990. Gregory <i>et al.</i> 1991.</p>	<p>Contract Administrator, Contract, Fisheries Biologist or Hydrologist, FMS, Burn Plan</p>

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
	<p>prescribed fire objectives. Ladder fuel treatments- would only occur in RCAs where active ignition is anticipated and would not occur within riparian vegetation, within 60 feet of intermittent channels or within 120 feet of perennial stream channels. All ladder fuel treatments in RCAs will be completed by hand and would not cut trees larger than 8 inches DBH. Slash produced from ladder fuel treatments will be lopped and scattered. Piling of slash will not occur within RCAs.</p> <p>No construction of mechanical (heavy equipment) fireline shall occur in RCAs and handline should be minimized in RCAs through the use of existing roads, natural vegetation features and the use of hose lays where appropriate as an alternative to fireline construction.</p> <p>Promptly (as soon as perimeter control is no longer necessary) reclaim all fireline following all burn activities. Reclamation activities will include, but is not limited to, placing waterbars as necessary, pulling material removed including mineral soil for fireline construction back onto fireline, pulling slash as available onto the surface</p> <p>All burn plans and anticipated ladder fuel treatments will be annually reviewed by District Resource Specialists (fisheries biologist and hydrologist). Additional site-specific concerns regarding prescribed fire treatments (including RCA treatments) will be addressed at that time.</p>			
12	No refueling or storage of fuel or other toxicants within RCAs unless approved by a fisheries biologist and/or hydrologist. Unattended equipment should not be parked in RCAs unless no other practical options are available.	Minimize potential for fuel spill in stream.	High: Logic	Contract Administrator, contract provision, Fisheries Biologist, Hydrologist.
13	Additional mitigation (e. g. water bars, slash filter windrows, straw bales) will be applied to temporary road and skid trails left open over the winter to stabilize the soil and minimize erosion during spring runoff.	Minimize sediment delivery to stream channels	High, Logic, Experience	Contract Administrator, Timber Sale Contract.
14	Locate and approve water drafting sites prior to use. The project fisheries biologist or hydrologist must approve the sites. No vehicles would be allowed in stream courses at any time for the purpose of withdrawing water. A maximum 3/32 inch screen mesh will be required on all water drafting equipment.	Minimize impacts to stream channels and RCAs	High: Experience, Logic	Contract Administrator, Fisheries Biologist, Hydrologist.
15	If snow conditions allow, use snow bridges as an alternative to road construction and culvert placement. Where a culvert is needed on temporary road, it would be removed in the same field season as installed unless	Minimize sediment delivery to channels and	High: Experience, Logic, Burroughs	Contract/Admi nistrator

Chapter 2 – Alternatives

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
	approved by the fisheries biologist, hydrologist or qualified designee.	rehabilitate riparian areas. Reduce levels of TSRC	And King 1989, Foltz 2007, Local Monitoring.	
16	On slopes greater than 45% utilize cable, skyline or helicopter harvest systems and limit heavy equipment operations to roads (temporary or permanent) and landings.	Reduce soil impacts and levels of DD by utilizing lower impact harvest systems.	High: Seyedbagheri 1996, Megahan 1987, Experience	Silviculturist / TMA Contract Administrator Silvicultural prescription Contract
17	<p>On slopes less than 45%, ground based mechanical logging equipment (e.g. – feller bunchers, skidders, loaders, processors) must be kept on roads, landings and designated skidtrails at all times unless agreed in writing. Equipment operation off of designated roads, trails and landings will be considered in the following situations:</p> <ul style="list-style-type: none"> • When soil moisture is below 20 percent. This can be determined when soil is dry to the touch and does not form a ball when pressure is applied by hand. OR When the ground is snow covered and/or frozen sufficiently so that soils will not be unacceptably rutted, displaced or compacted. • Use of mechanized equipment (e.g. – feller-buncher, excavator for machine piling) off of designated skid trails on slopes between 35 and 45% slope should only be considered when existing DD is less than or equal to 10 percent and requires approval of a Forest Service Soil Scientist. <p>The Forest Service will determine when the soils are too wet to operate on designated skidtrails.</p>	Limit detrimental disturbance (e.g. soil compaction, displacement and rutting) to soils.	High: Literature, USDA Forest Service 2002, USDA Forest Service 1981, Garland 1983, Froehlich et. al. 1981 Froehlich et. al. 1983	Soil Scientist Silviculturist / TMA Contract Administrator Silvicultural prescription Contract
18	If surveys indicate that some units have DD levels at or in excess of, 15 percent, it is required that a net reduction in DD be accomplished with the implementation of the project (Forest Plan Standard SWST02). The units may require an alternative method of site preparation (<i>i.e.</i> broadcast burning). Units that may exceed 15 percent after logging or brush disposal will need to be evaluated prior to brush disposal to determine if piling or broadcast burning will be implemented.	Limit detrimental disturbance (e.g. soil compaction, displacement and rutting) to soils.	High: Literature, USDA Forest Service 2002, USDA Forest Service 1981, Garland 1983, Froehlich et. al. 1981 Froehlich et. al. 1983	Soil Scientist Silviculturist / TMA Contract Administrator Silvicultural prescription Contract

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
19	Maintain spacing of approximately 200 feet or greater for constructed skid trail routes except where converging at landings. Keep excavations of constructed skid trails to a minimum. Maintain spacing of 100 feet for designated lateral trails. Closer spacing due to complex terrain must be approved in advance by the Timber Sale Administrator. Give preference to reutilizing and decommissioning existing skid trails.	Reduce soil impacts by restricting the amount of surface area covered with skid trails.	High: Literature, Froehlich <i>et al.</i> 1981, Garland 1983	Silvicultural Prescription, Contract, Silviculturist, Contract Administrator
20	Constructed skid trails will not exceed a 30% road grade except for short pitches, should be kept to a minimum, unless otherwise agreed in writing.	Minimize potential for detrimental disturbance.	High; logic, experience, local monitoring, Froehlich <i>et al.</i> 1983; Garland 1983.	Contract Administrator, Timber sale contract
21	Maintain long-term rooting strength on identified LSP areas. Favor deep rooted species such as ponderosa pine and Douglas Fir. Avoid road and skid trail construction on LSP areas and concentrating water onto LSP areas from road drainage.	Reduce potential for landslides by retaining rooting strength.	Moderate: Burroughs and Thomas 1977	Contract Administrator Soil Scientist Hydrologist
22	Reclaim disturbed skyline/cable corridors by pulling soil berms back to original configuration and scattering slash on all areas of soil disturbance to provide for a 50 to 80 percent effective cover. Ensure runoff is not channelized into skyline corridors from landing areas.	Reduce potential for erosion/rutting/DD in corridors and facilitate revegetation.	High; experience, local monitoring.	Contract Administrator Soil Scientist Hydrologist
23	Trails for excavator slash piling are limited to one equipment pass and must be spaced at least 100 feet apart. For placement of slash piles, favor previously disturbed areas.	Reduce displacement and compaction damage to soils.	Moderate: Experience	Silvicultural Prescription, Contract, Silviculturist, Contract Administrator
24	Construct slash filter windrows at the toe of fill slopes on newly constructed landings and temporary roads within contributing areas, concurrent with construction. Limit the height of windrows to less than three feet; dispose of excess material as necessary. Provide breaks (every 100-300 feet) and limit length of windrows to allow easy passage of wildlife and recreationists.	Minimize the extent of sediment routing to stream channels.	Moderate: Literature, Burroughs and King 1989, Cook and King 1983, Forest Service Handbook 2509.22, p. 15.02-	Silvicultural Prescription Contract, Transportation Plan Silviculturist, Contract Administrator, Engineering Representative

Chapter 2 – Alternatives

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
			2.	
25	Decommission all landings, skid trails, and firelines used in project implementation activities. Rip (loosen) compacted soils to a maximum 16 inches, or depth of compaction with a maximum of three foot spacing between rips. Where practicable, recontour to the natural slope profile for decommissioning of roads, constructed skid trails and temp roads and waterbar as needed to prevent erosion. Hydromulch or pull slash over the surface to achieve 50 percent ground cover prior to seasonal runoff events. Range and recreational access should be maintained where needed.	Restore and stabilize committed soils back to productive condition.	High: Literature, Johnson 1995, Luce 1997, USDA Forest Service 1981	Silvicultural Prescription, Contract, Silviculturist, Contract Administrator
26	Apply a high level of mitigation to areas where land-disturbing activities may deliver sediment to stream channels or RCAs, or where activities increase detrimental disturbance or total soil resource commitment (TSRC). Mitigation measures can include, but are not limited to, water control devices such as silt fence or straw bales, erosion control matting, seed, hydromulch, fertilizer, placement of woody debris, and breaking up compacted soils. Maintain or modify mitigation structures to keep them in a fully functioning condition. Remove silt fence and stabilize disturbed areas post-implementation.	Minimize sediment delivery.	Low to Moderate: Experience; Literature, Burroughs and King 1989	Contract, Contact Administrator, Engineering Representative
27	Fuel storage greater than 200 gallons will be located within a containment area lined with material sufficiently impervious to contain spilled fuel.	Reduce potential for fuel spills that could affect fish or fish habitat. 40 CFR 112	Moderate: Experience.	Contract Contract Administrator
28	Approved oil-absorbing mats would be available and used as necessary to clean up spills that occur during refueling and to catch or clean up fuel/oil drips under stationary equipment.	Minimize contamination of soil and water resources.	High: Experience.	Contract Contract Administrator
SWRA - Prescribed Fire				
29	Avoid tree mortality and high soil burn severity from prescribed fire operations in identified landslide prone (LSP) areas.	Reduce potential for landslides by retaining rooting strength.	Moderate: Burroughs and Thomas 1977	Burn Boss Soil Scientist, Hydrologist
30	Implement prescribed burning operations when adequate soil moisture exists, and fuel loading and residence time will result in low soil severity.	Reduce the potential for severely burned soil.	Moderate; Experience	Silviculturalist, Burn Boss
Culvert Replacement/Removal				
31	Culvert removals and installations (including those implemented to improve fish passage and crossings on	Minimize sedimentation	High; logic,	Contract Administrator,

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
	<p>closed roads re-constructed for vegetation management) will follow the mitigation measures outlined in the Programmatic Culvert Replacement BA (Scaife and Hoefler, 2011) and are incorporated into these design features. Culverts or other crossing structures would be installed at low flows. For permanent culverts, incorporate elements of the natural channel, such as substrate size and gradient, when reconstructing channels where fish habitat or potential fish habitat exists.</p> <p>The following permits will be acquired prior to project implementation: variance letter to exceed turbidity levels from Idaho department of Environmental Quality, stream channel alteration permit from Idaho department of Water Resources. In addition, a 404 dredge and fill permit will be obtained from the USACE.</p>	and effects to listed fishes and designated critical habitat.	experience	Fisheries biologist (or qualified designee) Hydrologist, Wildlife Biologist Engineer
32	<p>Culvert installation or removal in live streams would occur after spring peak flows and prior to August 15 (in the Boulder Creek subwatershed) to avoid the bull trout spawning period). Stream channels will be de-watered prior to in-stream work with heavy machinery. Streams would be diverted for a period consistent with the programmatic stream crossing consultation. Streams would likely be diverted using a corrugated plastic pipe or a plastic-lined channel and a temporary cofferdam. If water drafting is necessary, screen opening size would be the standard 3/32 inch or smaller (as required by the PAF Forest Plan). The culvert design team will specify stockpiling and staging areas and access to the site will be on an established roadway. Some trees may have to be felled within the RCA to complete construction, however, the number of trees cut will be minimized to the extent possible.</p>	Minimize sedimentation and effects to listed fishes and designated critical habitat.	High: logic, experience, Scaife and Hoefler 2011.	Contract Administrator, Fisheries Biologist
33	<p>Prior to culvert installation or removal activities, a pre-work survey will be conducted by the District Fisheries biologist and/or qualified designee. Passive movement of fish from the construction area will be achieved by slow dewatering of the site. If this method is insufficient, then block nets will be installed, and fish observed in the project area will be removed from the area using dipping, seining, and/or electrofishing methods. Fish would be transported to an unaffected portion of the creek above the in-stream work and released. Block nets would be removed after fish removal. A fish biologist will oversee all fish handling operations.</p>	Minimize effects of in-stream construction on Listed Fishes.	High; logic, experience	Contract Administrator, Fisheries Biologist
34	<p>During culvert installation or removal activities, a spill containment kit will be available on-site and able to accommodate potential spills for the equipment used during implementation. No fuels would be stored in RCAs, unless there is no other alternative. Refueling or servicing of vehicle or equipment would not take place in</p>	Minimize effects to water quality.	High: logic, experience	Contract Administrator

Chapter 2 – Alternatives

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
	RCA. All equipment will be in good repair and free of leakage of lubricants, fuels, coolants and hydraulic fluid. In-stream work with heavy machinery would be minimized to the extent possible. Detectable sheens will be reported to the EPA and any spills over 25 gallons will be reported to the IDEQ.			
35	During culvert installation, Sedimat® or similar product would be placed within the channel to collect released fine sediments and minimize effects to downstream segments. These would be removed from the channel at the conclusion of activities. Sediment control measures may also include silt fences, erosion control matting, mulch, straw wattles, and/or slash. The culvert/bridge installation or removal and associated activities would be conducted in a manner that would minimize the potential for inputting additional fine sediments or affecting riparian habitat. Stream simulation material would be washed, <i>i.e.</i> sprayed with water using a pump and hose, to settle fine material into the streambed to minimize loss of downstream surface water and to minimize turbidity. Sedimat® will be placed downstream to capture sediment and will be removed when construction is complete. It is not anticipated that explosives would be used because the culverts/bridges are designed with a relatively shallow foundation system.	Minimize sedimentation and effects to listed fishes and designated critical habitat.	High: Logic, Experience	Contract Administrator, Fisheries Biologist
36	Culvert replacement/removal site rehabilitation will include seeding and mulching the disturbed area. Straw wattles may also be used to stabilize the road fill. All project related materials and waste will be removed from the site when construction is complete.	Minimize sedimentation and effects to listed fishes and designated critical habitat.	High: logic, experience	Contract Administrator, Fisheries Biologist
Road Reconstruction				
37	When constructing or re-constructing roads in RCAs or installing culverts, use sediment fences, wood straw, jute matting or other erosion control measures deemed necessary by a fisheries biologist and/or hydrologist (or designee). Gravel road stream crossings and armor ditch lines where necessary to inhibit erosion. Gravel road sections for the full extent of the contributing road surface, or within the RCA, whichever is greater.	Reduce sediment input to stream channels, maintain aquatic organism passage.	High: logic, experience	Contract Administrator, Hydrologist, Fisheries Biologist or qualified designees.

Project Design Features	Objective	Effectiveness	Enforcement Mechanism/ Responsibility
<p>38 All new stream crossings (including temporary stream crossings on closed roads opened for vegetation management) would be required to provide fish passage at all fish-bearing streams. SWST08 states “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.” Fish bearing streams will be determined by pre-construction fish surveys. Culvert installations will follow the mitigation measures outlined in the Programmatic Culvert Replacement BA (Scaife and Hoefler 2011).</p>	<p>Reduce sediment input to stream channels, maintain aquatic organism passage.</p>	<p>High: logic, experience</p>	<p>Contract Administrator, Hydrologist, Fisheries Biologist or qualified designees.</p>
<p>39 Any roads not identified as haul routes that will be used as such will need approval by the fish biologist or hydrologist. Adequate reconstruction to mitigate erosion concerns must occur before use.</p>	<p>Minimize sediment delivery to stream channels.</p>	<p>High: logic, experience</p>	<p>Contract Administrator, Hydrologist, Fisheries Biologist or qualified designees.</p>
<p>40 Temporary stream crossings (on closed roads opened for vegetation management that will be closed or decommissioned post-project) would be provided by temporary bridges or partially buried culverts. The use of temporary bridges instead of culvert installations should be considered on streams occupied with Listed fishes and/or DCH.</p>	<p>Reduce sediment input to stream channels, maintain aquatic organism passage.</p>	<p>High: logic, experience</p>	<p>Contract Administrator, Hydrologist, Fisheries Biologist or qualified designees.</p>
<p>41 PDFs for culvert replacements (Scaife and Hoefler 2011) would be applied to culvert installations and post-treatment culvert removal on re-constructed closed maintenance level 1 roads. Closed maintenance level 1 roads temporarily opened for vegetation management that are proposed to return to level 1 closure would have: crossings removed, cut and fill recontoured at stream crossings, drainage features installed and scarifying and reseeding to promote re-vegetation when vegetation management actions are completed. Closed maintenance level 1 roads temporarily opened for vegetation management that are proposed for decommissioning would have all crossings removed when decommissioning treatments take place.</p>	<p>Reduce sediment input to stream channels; retain aquatic organism passage and hydrologic function.</p>	<p>High: Logic, experience, Local Monitoring, Folt and Maillard 2003.</p>	<p>Contract Administrator, Fisheries biologist, Hydrologist or qualified designee(s).</p>
<p>42 Closed system roads that are opened for vegetation management activities and scheduled for long-term closure would be prepared for closure by physically closing to prohibit motorized use, scarifying the driving surface, seeding or hydro-mulching the surface, cut slopes</p>	<p>Reduce long-term sediment production, retain aquatic organism</p>	<p>High, logic, experience, local monitoring, Folt and</p>	<p>Fisheries Biologist, Soil Scientist, Hydrologist.</p>

Chapter 2 – Alternatives

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
	and fills slopes where necessary, installing waterbars as needed and pulling culverts where necessary. All culverts installed to facilitate use of the road would be removed, using the PDFs for culvert removal in the Programmatic Culvert Replacement BA (Scaife and Hoefler, 2011).	passage and hydrologic function	Maillard 2003.	
Road Decommissioning/Obliteration				
43	Permanent and temporary roads identified for obliteration would be decompacted a depth of 16” or the extent possible, recontoured, seeded with native seeds (where need is identified), and provided with a minimum of 50% to maximum of 80% ground cover (vegetation transplants at a rate of 15 per 100 linear feet, natural mulch, CWD, or wood straw, in that order of preference) to an extent deemed necessary by a fisheries biologist and/or hydrologist. In addition to the above treatment, stream crossings would receive planted vegetation plugs and additional ground cover to an extent deemed necessary by a fisheries biologist and/or hydrologist, to reduce erosion, facilitate recovery of soil biological function and stabilize streambanks. Temporary roads will be fully obliterated within 3 years of the conclusion of harvest activities, unless otherwise agreed in writing.	Minimize sediment delivery to stream channels and rehabilitate riparian areas. Reduce levels of TSRC	High: experience, logic. Burroughs and King 1989, Foltz 2007, local monitoring	contract provisions, Hydrologist, Fisheries Biologist
44	Removal of crossings on perennial streams will follow the mitigation measures outlined in the Programmatic Culvert Replacement BA (Scaife and Hoefler, 2011)	Minimize sedimentation and effects to listed fishes and designated critical habitat.	High; Experience, logic	Contract provisions, Contract Administrator, Fisheries biologist
Road Maintenance				
45	All road maintenance activities in the Boulder Creek subwatershed would follow all mitigations contained in the programmatic consultation (Olson and Burns 2007). Gravel road stream crossings and armor ditch lines where necessary to inhibit erosion. Gravel road sections for the full extent of the contributing road surface, or within the RCA, whichever is greater. Roads that will be used as haul routes then decommissioned or placed into long-term closure should have BMPs applied where identified as delivering sediment to stream channels. Mitigation measures may include, but are not limited to, graveling of road prism in RCAs, armoring ditch lines with pit run, and placing obstructions or constructing catch basins below culverts.	Minimize effects to listed fishes and fish habitat	High: Experience, logic	Contract provisions, Contract Administrator, Fisheries biologist, Hydrologist
46	All roads identified as haul routes (including roads that will remain open and those identified to be decommissioned or placed in long-term closure) that cross streams occupied with Listed species or DCH (Boulder Creek subwatershed) should have	Minimize effects to listed fishes and fish habitat	High: Experience, logic	

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
	BMPs applied to minimize sediment delivery to occupied and DCH. BMPs may include graveling stream crossings and armoring ditch lines up to the entire extent of the RCA if necessary, placing obstructions and/or rolling dips, installing silt fence, applying mulch and/or slash and seed to exposed soil, installation of silt fence and constructing catch basins below culverts. All silt fencing and other non-biodegradable materials should be removed when hauling is complete.			
47	New Gravel Pits and expansion of existing gravel pits will not occur within RCAs.	Minimize effects to riparian areas and fish habitat	High, Experience, Logic	Contract provisions, Contract Administrator, Fisheries biologist, Hydrologist
48	Utilize all applicable Best Management Practices (BMPs) and Soil Water Conservation Practices (SWCPs) for harvest, road and ground disturbing activities.	Reduce levels of soil disturbance, erosion and potential sedimentation, meet requirements of the State of Idaho non-point source pollution Management Plan, Maintain, water quality and associated beneficial uses.	High: FSH 2509.22, Local Monitoring.	Contract provisions, Contract Administrator, Fisheries biologist, Hydrologist
Threatened, Endangered, Proposed and Candidate Species, and Region 4 Sensitive Species				
49	Ground disturbing activities would be stopped in any areas where previously unknown listed or sensitive fish, wildlife, or botanical species are discovered until a Fisheries Biologist, Wildlife Biologist, or Botanist, respectively reviews the affected area and prescribes appropriate mitigation to ensure protection of the species (including any consultation requirements with USFWS and/or NOAA Fisheries).	Provide protection to threatened, endangered and sensitive species.	Moderate: Logic	WIGU07 Fisheries Biologist, Wildlife Biologist, Botanist, Sale Administrator, Burn Plan, Fire Management Officer
WILDLIFE				
50	The following activities are prohibited at all times in occupied NIDGS habitat, unless approved in writing by the wildlife biologist:	Mitigate potential effects to NIDGS from		Contracts, Wildlife Biologist,

Chapter 2 – Alternatives

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
	<ul style="list-style-type: none"> - camping, - piling of slash (outside of approved landings). 	habitat restoration associated management activities		Contract Administrator, Burn Plan, FMO
51	<p>In occupied NIDGS habitat from April 1 to August 31 management activities that may cause unacceptable disturbance to active NIDGS are prohibited unless approved by a FS wildlife biologist following appropriate consultation and/or communications with the USFWS. This includes, but is not limited to: off-road parking, thinning, skidding, decking logs, creation of landing piles, loading/unloading equipment off of the road, construction of hand fireline and prescribed burning.</p> <p>These dates may change depending on the emergence or torpor of NIDGS as determined by the wildlife biologist. Approval to complete these and other activities during this period in occupied habitat require written permission a FS wildlife biologist and may require consultation with the USFWS.</p>	Mitigate potential effects to NIDGS from habitat restoration activities	Moderate-High: Research, literature, Forest Plan, agency direction, logic	Contracts, Wildlife Biologist, , Contract Administrator, Burn Plan, FMO
52	<p>In occupied NIDGS habitat:</p> <ul style="list-style-type: none"> - Constructed skid trail must be approved prior to implementation. - Skid trail and temporary road obliteration in occupied NIDGS habitat shall not fully obliterate or recontour the slope unless previous approval from the wildlife biologist is obtained. - Require only outsloping, scarification and spreading organic material when concerns regarding obliteration and burrows conflict. 	Mitigate potential effects to NIDGS from skid trails and temp roads	Moderate-High: Research, literature, Forest Plan, agency direction, logic	Contracts, Wildlife Biologist, , Contract Administrator, Burn Plan, FMO
53	<p>In occupied NIDGS habitat, management activities with the potential to affect inactive NIDGS (hibernating in burrows) shall occur between May 1 and August 31, unless otherwise approved by a wildlife biologist. These activities include ground disturbing activities that could potentially affect greater than 6 inches to one foot in depth and include activities such as: decommissioning of roads or trails, skid trail construction / obliteration and mechanical fireline construction.</p> <p>These activities are likely to disturb NIDGS while hibernating in burrows, therefore, operations will not be allowed until pups have emerged from hibernation as determined by the wildlife biologist.</p>	Mitigate potential effects to hibernating (below ground) NIDGS from ground disturbing activities	Moderate-High: Research, literature, Forest Plan, agency direction, logic	Contracts, Wildlife Biologist, , Contract Administrator, Burn Plan, FMO
54	<p>Hauling of logs and other forest products in occupied NIDGS habitat may occur:</p> <ol style="list-style-type: none"> 1) With no restrictions from September 1 through March 30. 2) With written approval of the wildlife biologist 	Mitigate potential effects to NIDGS from commercial product haul	Moderate-High: Research, literature, Forest Plan, agency	Timber Sale Contract, Wildlife Biologist, TMA, Sale Administrator,

Project Design Features	Objective	Effectiveness	Enforcement Mechanism/ Responsibility
<p>between April 1 and August 31 and only after site specific evaluation and mitigation is applied. The following are potential mitigation measures that may be applied to allow haul during this time period:</p> <ul style="list-style-type: none"> a) Reduced speed limits; and/or b) Limiting the time of day for haul to when squirrels are inactive; and/or c) Other mitigation as recommended by the Forest Service and approved through consultation with the USFWS. <p>Roads associated with the project will be monitored by qualified FS personnel to determine hazards and compliance. If mitigations are determined to be ineffective at protecting squirrel populations, commercial product haul would be limited to the inactive period (September 1 through March 30).</p>		direction, logic	Burn Plan, FMO
<p>In occupied NIDGS habitat when NIDGS are inactive (typically September 1 through March 30), management activities requiring the use of heavy equipment off the road surface (i.e. – skidders, dozers, feller-buncher) shall comply with the following requirements, unless otherwise approved by a FS wildlife biologist. This includes, but is not limited to, activities such as: logging, mechanized harvest, parking of heavy equipment, skidding, decking, landing slash piling is allowed between if the following conditions are met:</p> <ul style="list-style-type: none"> 1) Notification to Forest Service by the contractor is made prior to August 1 that winter logging will occur (skid trail and landing locations must be flagged by the contractor); AND Potential skid trail locations shall be surveyed and approved by the wildlife biologist (or their designee) prior to logging to avoid damage to burrows. OR 2) When squirrels are known to be present but surveys were unable to identify burrows locations, biologist may require frozen/over snow logging, which is defined as: at least 18 inches of snow and/or 4 inches of frozen soil. 	<p>Mitigate potential effects to NIDGS habitat restoration activities</p> <p>Compliance with Section 7 consultation</p>	<p>Moderate-High: Research, literature, Forest Plan, agency direction, logic</p>	<p>Timber Sale Contract, Wildlife Biologist, TMA, Sale Administrator, Burn Plan, FMO</p>
<p>56</p> <p>In modeled potential NIDGS habitat, unless modeled potential habitat has been field verified as non-suitable or surveys have been completed and no squirrels documented, mitigations 50-53 from this table shall apply. Seasonally, the wildlife staff will conduct on-site surveys approximately three times within a 7 day period to identify the presence of NIDGS. In potential habitat when the wildlife biologist deems</p>	<p>Mitigate potential effects to NIDGS in potential habitat.</p>	<p>Moderate-High: Research, literature, Forest Plan, agency direction, logic</p>	<p>Timber Sale Contract, Wildlife Biologist, TMA, Sale Administrator, Burn Plan, FMO</p>

Chapter 2 – Alternatives

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
	potential habitat unsuitable or surveys are completed and NIDGS are not documented, project restrictions for NIDGS will not apply.			
57	<p>In occupied habitat and potential habitat within ¼ mile of occupied sites, unless otherwise agreed in writing:</p> <ul style="list-style-type: none"> - No slash piles will be built within ¼ mile of occupied NIDGS habitat unless they are to be chipped and hauled away. - Chipping will take place after NIDGS are inactive when soil moisture is less than 20 percent or frozen. - Care shall be taken not to disturb soil when removing chip material even if it means leaving some material on the landing. - All slash outside of approved piles, within occupied habitat shall be uniformly distributed (lopped and scattered) to a depth of less than two feet to reduce heat transfer to soil. 	Mitigate potential effects to NIDGS in from slash treatment		
Northern Goshawk and Great Gray Owl				
58	<p>Known northern goshawk (NOGO) nests will be protected within a 30-acre forested nest stand as determined by the wildlife biologist in coordination with the sale administrator and/or timber staff.</p> <p>During vegetation management operations, if a new NOGO nest is located, onsite activities will cease until a survey can determine if the nest is active. If the nest is active, operations in those 30 acres will be halted until the end of the nesting season (March 1 to Sept. 30). Operations may resume earlier than Sept. 30 if it is determined that the birds are no longer present. As per PNF Plan direction, nest stands will have a Post-Fledging Area (PFA) established. Refer to the Project Record for nest site locations, PFA protocol and associated units.</p>	Compliance with Forest Plan direction	High: Research, literature, Forest Plan, agency direction, logic	Timber Sale Contract, Wildlife Biologist, TMA, Sale Administrator, Burn Plan, Fuels Specialist
59	Great gray owl nesting sites that have not been identified prior to vegetation or Rx fire treatments, may require protected activity centers (PAC's) to retain nesting and rearing habitat that is sufficient to rear fledgling great gray owls e.g. PVG 6 clumps w/in 300 ft. of meadow habitat specifically near Lost Valley Reservoir, Price Valley and Bear Wallow areas.	Minimize negative effects on wildlife primarily during nesting	Moderate: Research, Literature, Administrative studies, Logic	Timber Sale Contract, Wildlife Biologist, TMA, Sale Administrator, Burn Plan, Fuels Specialist
General Big Game				
60	In areas closed to public motorized access, motorized access by contractors shall be only for purposes of implementing the contract. Use of restricted roads and unauthorized equipment for activities such as personal use firewood collection and big-game hunting are prohibited. Apply periodic management activity restrictions between	Minimize negative effects on wildlife; ensure contractors do not have an	High: Research, literature, Forest Plan, agency direction,	Timber Sale Contract, Wildlife Biologist, TMA, Sale Administrator,

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
	May 1 and July 15 in active fawning/calving areas to protect big game during these periods.	unfair advantage during hunting season	logic	Burn Plan, Fuels Specialist
Elk				
61	As per Forest Plan direction (WIGU08), provide a radius of 2 elk sight distances (total of 400 feet) of vegetation to protect mineral licks and elk wallows. No harvest or prescribed burning will be allowed in these sites, without approval by the wildlife biologist.	Minimize vulnerability to hunting mortality and provide habitat security	High: Research, literature, Forest Plan, agency direction, logic	Timber Sale Contract, Wildlife Biologist, TMA, Contract Administrator, Burn Plan, Fuels Specialist
TEPC/MIS				
62	Prior to any forest management activity, including, but not limited to, the construction of log landings, skid trails, road construction or maintenance, and prescribed fire, the wildlife biologist, must conduct onsite surveys to identify TEPC, MIS, or Sensitive species presence. Project activities may be altered to protect the wildlife species, as practicable.	Minimize negative effects on wildlife primarily during nesting/den periods	Moderate: Research, Literature, Administrative studies, Logic	Layout, contract, Administrators, Wildlife Biologist, burn plan,
63	During all activities, retain existing snags unless deemed a safety hazard. Felled trees, deemed as hazard trees, will be left on site.	Ensure adequate habitat for snag dependent species	Moderate: Research, Literature, Administrative studies, Logic	Layout, contract, Administrators, Wildlife Biologist, burn plan,
Legacy Tree/Old Forest				
64	Ponderosa Pine, western larch and Douglas-fir that fit the definition of legacy trees should be retained during harvest.	Retain legacy trees for wildlife habitat.	Unknown	Timber Sale Contract, Wildlife Biologist, TMA, Contract Administrator, Burn Plan, Fuels Specialist
65	Retain forest stands that meet the definition of old forest habitat for the applicable PVG as Appendix E of the draft EIS for the WCS. Management actions are permitted in such stands as long as they will continue to meet the definition of old forest habitat.	Ensure retention of old forest habitat as supported by the science in the draft WCS	Unknown	Silvicultural prescription Silviculturist, Wildlife Biologist
Cultural Resources				
66	Avoid all cultural resource sites during project implementation. All sites will be monitored and flagged	Prevent damage to cultural	High; Experience	Timber Sale Contract

Chapter 2 – Alternatives

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
	<p>prior to implementation to ensure avoidance. If existing surveys are determined to be inadequate, a secondary consultation with Idaho SHPO will be required for:</p> <ol style="list-style-type: none"> 1) Log and biomass landings 2) Prescribed fireline construction 3) Newly constructed temporary roads 4) Road decommissioning 5) Proposed recreation actions 6) Fish passage barrier improvements and associated road rehabilitation 	resource site.		<p>Burn Plans</p> <p>Forest Archaeologist</p> <p>Burn Boss Contract Administrators</p>
Invasive And Noxious Weeds				
67	Annually assess all known and new invasive weed sites associated with this project for five years. Prioritize the sites where treatment will occur.	Detect new and prevent known manageable noxious weeds sites from spreading	High: Experience	Range Management Specialist
68	Coordinate ground disturbing activities annually to address invasive plants management.	To minimize impacts to native vegetation around known invasive weed sites.	High; Experience	<p>Burn Plan</p> <p>Range Specialist Fuels Specialist</p>
Rare Plants				
69	Any rare plant populations identified in the botanical survey will be protected from soil disturbing mechanical treatment, jackpot/pile burning, and decommissioning activities and weed spraying activities.	To minimize impacts to rare plants.	High; Experience	<p>Burn Plan, Timber Sale Contract, Range Specialist Fuels Specialist</p>
Livestock Management				
70	<p>All burn plans and anticipated ladder fuel treatments will be annually reviewed by range program manager. Additional site-specific concerns regarding prescribed fire treatments will be addressed at that time.</p> <p>Ensure that permittees are informed of prescribed burning plans and areas prior to implementation</p>	Minimize impacts to permitted livestock activities	High; experience	<p>Burn plan Range specialist, fuels specialist</p>
71	Protect range improvements within project area. Replace or reconstruct any damaged range improvements to pre-implementation conditions.	Protect investment	High; experience	<p>Timber sale contract/map Burn plan TSA/COR</p>
72	Ensure a passable route (approximately 24 inches wide) is maintained on decommissioned routes to allow for livestock herding and movement within range allotments.	Minimize impacts to permitted	HIGH past experience /	Forest Plan standards and guidelines:

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
		livestock grazing activities.	professional judgment	Contract specifications Range Management Specialist, Contract Administrator
Recreation/Trails				
73	All burn plans and anticipated ladder fuel treatments will be annually reviewed by recreation specialists. Additional site-specific concerns regarding prescribed fire treatments (including RCA treatments) will be addressed at that time.	Minimize effects to recreation resource and infrastructure.	High: experience, logic	Contract Administrator, Recreation Specialist, Engineering, Hydrologist, Fisheries biologist.
74	Trails damaged by vegetative treatments (thinning and prescribed burning) or other activities during project implementation will be repaired by the party inflicting the damage.			
75	All trail maintenance work done during project implementation will abide by the trails "Trail Management Objective" as outlined in the trails database. Trails will be maintained to their proper trail class and trail design features.			
76	Install adequate drainage structures in new trail construction and ensure sediment transport is minimized where trails are located within RCAs, as per FS Trail Construction Specification.			
77	Where necessary, restrict log hauling during periods of high recreation use, such as the opening day of big game hunting season.			
78	On authorized over-snow groomed routes, the contractor would be required to leave a 6 inch snow floor during snow plowing operations and leave the berms far enough apart for passage with a snow groomer. No hauling on over-snow groomed routes would be allowed on weekends or holidays between December 15 and April 1. In addition, no hauling would be allowed on over-snow groomed routes between Christmas and New Year's Day.			
79	The over-snow groomed routes would be signed with information about the logging operations and the information would be posted to the PNF web page.			
80	Trail maintenance in Boulder Creek subwatershed will follow mitigation measures in the programmatic consultation (Olson and Burns 2007).	Minimize erosion and effects to RCAs	High: experience, logic	Recreation Specialist, Fisheries biologist, Hydrologist
81	BMPs (2012 National Core Technical Guide) would be implemented for all ground disturbing activities including installation of vault toilets, hardening dispersed campsites, construction of the trailhead at Ant Basin and installation of kiosks and other recreation related	Reduce/limit levels of soil disturbance, erosion and potential	High: FSH 2509.22, local monitoring	Contract Administrator, Recreation Specialist, Engineering,

Project Design Features		Objective	Effectiveness	Enforcement Mechanism/ Responsibility
	infrastructure.	sedimentation.		Hydrologist, Fisheries biologist.
82	Installation of vault toilets and removal of existing pit toilets should follow programmatic consultation guidelines (Olson and Burns 2007) if located in RCAs in the Boulder Creek subwatershed.	Minimize effects to RCAs	High: experience, logic	Contract Administrator, Recreation Specialist, Engineering, Hydrologist, Fisheries biologist.
83	At the Pollack trailhead install educational signs regarding noxious weeds, including pictures of species of concern. Signs will direct horse users that only “weed free” hay should be used while riding on Forest Service trails	Objective is to reduce risk of noxious weed infestations in the Research Natural Area	High: experience, logic	Recreation Specialist, Range/Weed crew
Scenic/Visuals:				
84	Ridgeline silhouettes in middleground Partial Retention should not have unnatural-appearing breaks along them.	Meet visual quality objectives	Moderate; logic	Contract Administrator, Recreation Specialist,
85	Duration of visual impacts from ground disturbing and vegetation removal activities to allow for herbaceous vegetative recovery of ground cover may extend to three years in foreground Partial Retention and middleground Partial Retention. Consider timely initiation of reseeded in areas where natural recovery is questionable.			
Special Uses				
86	Special uses should be identified on the ground (flagged) and protected during implementation. See Appendix D for locations of Special Uses in the project area.	Protect Special Uses	Moderate; logic	Contract Administrator

2.11 Monitoring and Evaluation

Monitoring and evaluating provides information about the progress and results of project implementation for the decision-maker and the public. The monitoring process involves collecting data to determine if the activity was implemented as described in this chapter, or whether the project activities produce the effects predicted in the scientific analyses presented in Chapter 3.

Monitoring results are evaluated to determine what, if any, adjustments are needed. The Forest evaluates whether the standards and guidelines for each resource are appropriate, and determines whether resource objectives, management directives, and Best Management Practices (BMPs) have been met. If they are not met, the Forest may adjust this and future projects. Table 2-6 summarizes the monitoring that would occur if the proposed action is implemented. Appendix E contains the detailed monitoring and evaluation plans.

Table 2-6. Monitoring

Resource	Item	Priority	Timing	Responsible Personnel	Type
Vegetation	Regeneration exams	High	Year 1, 3 and 5 until regeneration and stocking is certified.	Silviculturist	Effectiveness
SWRA	BMP and SWCP Implementation Monitoring	High	Once per year while logging operations are active at the end of the operating season.	Hydrologist/Fish Biologist	Effectiveness
SWRA	Road Decommissioning	Mod	Post-implementation to insure objectives are met.	Hydrologist Hydro Tech Watershed Restoration Specialist	Implementation
SWRA	DD Monitoring	High	All units shall be evaluated for pre-treatment DD conditions. All units shall be rehabilitated to meet the Forest Plan standard of 15% DD post-treatment...	Soil Scientist	Effectiveness and Implementation
Fisheries/Watershed	Verify that buffers are appropriate width and RCA treatments follow mitigation measures and PDFs.	High	Implementation monitoring will be conducted prior to and/or coincide with activities in RCAs.	Fisheries Biologist/Hydrologist or qualified designee	Implementation Monitoring
Fisheries/Watershed	Determine the effects of RCA treatments on WCIs and effectiveness of PDFs and Mitigation measures designed to maintain RCAs and RCA processes.	High	Effectiveness monitoring will occur during activities and annually for 3 years.	Fisheries Biologist/Hydrologist or qualified designee.	Effectiveness Monitoring
Fisheries	Document culvert replacements and evaluate fish passage at those sites.	High	Upon completion and annually for 3 years.	Fisheries Biologist or qualified designee	Culvert Monitoring

Resource	Item	Priority	Timing	Responsible Personnel	Type
Fire and Fuels	Determine the effectiveness of fire and fuels treatments	High	During and post-activity throughout the project duration	Fire Management specialist or qualified designee	Effectiveness Monitoring
Wildlife	Surveys for TES/MIS and snag retention	High	Prior, during and after ground disturbing activities have concluded.	Wildlife Biologist Wildlife Technician	Effectiveness and Implementation
Wildlife	Road decommissioning, building and closures	High	Prior, during and after ground disturbing activities have concluded.	Wildlife Biologist/Tech	Effectiveness and Implementation
Recreation	On Trail #181, monitor the section of trail through the Pony Creek Research Natural Area for new infestations of noxious weeds.	High	Each year for the first five years following implementation of trail work.	Range Tech	Effectiveness

2.12 Comparison of Alternatives

Table 2-7 displays or compares the alternatives. Acres and miles used in this analysis are approximations based on computer calculations. Actual figures may vary from these planning numbers.

Table 2-7. Alternative Comparison Table

Proposed Actions	Unit	Alt A	Alt B	Alt C	Alt D	Alt E
Vegetation Treatments and Associated Actions						
Commercial Thin-Free Thin	Acres	0	12,200	8,500	14,500	13,200
Free Thin-Patch Cut	Acres	0	1,800	0	0	0
Commercial Thin-Mature Plantation	Acres	0	8,100	6,000	8,100	5,400
Shelterwood with Reserves	Acres	0	0	0	2,600	1,800
Commercial Treatments in Riparian Conservation Areas ³	Acres	0	1,800	0	2,000	1,600
Non-commercial thinning	Acres	0	18,000	22,000	18,000	12,000
Temporary road construction	Miles	0	30	11	31	15
Prescribed fire						
Prescribed burning	Acres	0	45,000	45,000	45,000	31,500

³ Riparian Conservation Area treatment acres are not additional acres. These acres are included in commercial thin/non-commercial thin acres.

Proposed Actions	Unit	Alt A	Alt B	Alt C	Alt D	Alt E
Watershed, Fisheries and Wildlife Improvements						
Total fish passage barrier improvements	Number	0	40	40	40	16
System road decommissioning	Miles	0	70	132	70	51
Unauthorized route treatments	Miles	0	90	117	90	90
New long-term closures	Number	0	60	1	12	12
Conversion of seasonally open road to ATV trail	Miles	0	12	12	12	12
Road relocations	Miles	0	1.5	5.0	1.5	0.6
Recreation Improvements						
2-wheel motorized trail	Miles	18	18	18	18	18
Non-motorized trail	Miles	18	18	38	18	18
OHV trail	Miles	0	20	11	20	20
Open road in project area	Miles	265	255	224	255	255
Designate dispersed campsites	Number	0	68	68	68	68
Install information kiosks	Number	0	3	3	3	3
Decommission outhouses	Number	0	6	6	6	6
Install new vault toilets	Number	0	7	7	7	7

2.13 Identification of the Preferred Alternative

Alternative B is the preferred alternative. The Responsible Official’s selected alternative for implementation could be this alternative, one of the other alternatives considered in detail, or a different combination of alternatives considered in detail. The final decision will be documented in a Record of Decision (ROD) accompanying the final EIS.

