

Tumbledown Hazardous Fuels Reduction Project Environmental Assessment

APPENDIX A

SITE SPECIFIC DESIGN FEATURES

Aquatics

1. Locate fuel storage areas outside of RHCAs and provide facilities to contain the largest possible spill. Leaks of motor oil and hydraulic fluids from heavy equipment should be monitored and controlled to prevent water contamination.
2. When conducting surface blading and surface replacement utilize natural moisture or delivered water in blading operations to ensure rapid consolidation and compaction of the disturbed surface material.
3. When conducting surface blading and surface replacement remove and re-incorporate material from the outside edges of the roadway that may result in the formation of a berm or other barrier to proper dispersal of water.
4. DO NOT side cast waste material within RHCAs, waste material must be end hauled to an appropriate disposal location. Outside of RHCAs, side casting of minor amounts of material, such as oversize rock, may occur if no other practical solution exists. In no instance should side cast material be placed in a manner that results in oversteepened fill slopes, additional road width or impede proper drainage.
5. On site disposal of material may be appropriate if the material can be incorporated into the road surface or drainage structure. Do not dispose of material within RHCA, floodplain or other wetlands.
6. Cleaning of ditch relief culverts on cross drain structures such as open top culvert will not be done with flushing water within the RHCAs. Flushing of these structures outside of the RHCA can only be done if there is no potential for sediment delivery to any defined stream channel.
7. If culvert cleaning is conducted with heavy machinery, this machinery shall be used only from the established road prisms.
8. Dispose of materials suspected to contain harmful contaminants such as timber preservatives, red lead, fuel oil, solvents etc. appropriately as required by applicable regulations.
9. Maintain a packed snow floor and/or utilize shoes on blades, dozers and other snow removal equipment to minimize amount of road surface material placed in snow berms.

10. Do not side cast into or adjacent to streams snow containing significant amounts of dirt, debris or other materials removed from the roadway. This snow may need to be hauled to an appropriate disposal location.
11. Sidecasting of snow should be avoided in areas adjacent to streams where there is potential to cause snow or ice damming.
12. All debris, except snow and ice, that is removed from the road surface and ditches shall be deposited away from stream channels at agreed upon locations.
13. Berms left on the shoulder of the road will be removed and/or drainage holes will be opened and maintained. Drainage holes will be spaced as required to obtain satisfactory surface drainage without discharge on erodible fills.
14. Snow Removal will adhere to the Standard Forest Service Timber Sale Contract Provisions (C5.316).
15. Damage from, or as a result of, snow removal will be restored by the following summer.
16. All road maintenance actions will meet BMPs and INFISH Standards and Guidelines
17. Road maintenance activities in live water and which generate the potential for instream sedimentation or channel alteration are prohibited after September 1 through July 15th on sites adjacent to or upstream of known or potential bull trout populations and/or spawning areas, namely Gold Creek, North Gold Creek, Kickbush Gulch, and Granite Creek.
18. If brush cutting is needed within riparian areas (particularly stream crossings) heavy machinery shall be used only from the established road prism or it will be done with hand tools to the same specifications.
19. When a stream parallels within five feet of a road the brush cutter will be turned vertically to cut only the vegetation growing towards the road and not the vegetation providing canopy to the stream.
20. The final culvert replacement plan for the Tumbledown Creek and Rd 278 intersection/crossing will require a review by zone biologist and hydrologist to ensure channel function is not impeded and INFS standards (RF-3) are met. This site will also require a site evaluation and documentation for the feasibility of road alignment shifting to reduce encroachment upon RHCAs and channels. If it is determined that realignment is feasible a plan will be submitted requesting funding for realignment. The site can be repaired but a long term option must be evaluated and presented. These plans will be part of the annual monitoring program.
21. The #278 crossing of Tumbledown Creek culvert is a fish barrier for native salmonids. An oversized 5-foot diameter culvert will be countersunk below the grade of the existing streambed. A section of stream above the culvert will be realigned with the new culvert to allow better passage of flows and ensure fish passage.

22. Any soil disturbance adjacent to stream channels shall receive evenly distributed weed free mulch coverage with brush and trees to reduce sheet erosion. Mulch generated during the clearing phase of the rehabilitation work shall be used to the maximum extent practicable.
23. Utilize good surface preparation and multiple pass application of chloride products to minimize runoff and promote infiltration of the product. Dust abatement chemicals should be applied shortly after blading (within 1 week). The road should have good moisture content, in order to get the calcium chloride to adhere well to the fines. The purpose of multiple pass application is to avoid spraying off the road, particularly when crossing streams. Chemicals should be applied in a manner that minimizes calcium chloride from running off the road.
24. To prevent injury to small fish during drafting, utilize either 3/32-inch or smaller mesh intake screens or double rolled 1/8-inch hardware cloth crimped at both ends when drafting water for dust abatement operations.
25. Drafting rates will be such that no noticeable decrease in wetted width of the stream will occur. Should it be necessary to create a temporary barrier or blockage to the stream (to create a pool deep enough to draft from), during drafting an agency fish biologist will evaluate the site and may identify further mitigation.
26. RHCA's include 300-foot (slope distance) protection zones for streams that have fish; 150-foot protection zones for perennial streams with no fish; 100-foot protection zones for intermittent streams and sensitive landtypes; and 150 feet slope distance from the edge of the maximum pool elevation around ponds, lakes, reservoirs, and wetlands greater than 1 acre. Ephemeral draws will have a 50-foot (slope distance) protection zone if they are either directly tied to an intermittent channel or lack large woody debris and vegetation that prevent scouring or headcutting.
27. The portion of unit 17 east of the most westerly tributary will be dropped for protection of aquatic resources. Much of the proposed unit is perennially wet due to the topography and north aspect of the hillside. The first primary tributary is buffered with a 150 RHCA, which now forms the unit's eastern boundary. Temporary road construction to the remaining portion of unit 17 will not cross any perennial tributaries
28. Within unit 12 two tributaries to Tumbledown Creek will require an RHCA buffer that extends to the inner gorge of the drainage. If temporary road construction extends over either tributary an 18 inch culvert at both crossing will be required. Culverts will be removed and channel banks will be recontoured when temporary road is decommissioned.
29. Within unit 8 road reconstruction of 278LUA will end at the eastern boundary in the NE ¼ of the NW ¼ of section 23 before the road encroaches in the RHCA of Tumbledown Creek. A slash filter windrow and waterbars will be installed to reduce surface erosion in the RHCA.

30. Within unit 15, if skid trails are located adjacent to the RHCA buffer on South Twin Creek, slash filter windrow will be required to reduce potential for sediment delivery.
31. Units 20 and 21 will require slash mats on skid trails where feasible and trees will be limbed and lopped in the woods. The southern boundary of unit 20 and a portion of unit 21 south of the 278H road will be excluded since they encroach upon landtype 106.
32. A slash filter windrow will be constructed above the 278H on the south boundary of unit 20 to mitigate for any sediment transport leaving the unit boundary. No skidding of trees will occur on the 278H.
33. Waterbars will be installed at even intervals on the 278H road to reduce surface erosion. No haul will occur on this road after September 30 to prevent sediment delivery to North Gold Creek during bull trout spawning.
34. No trees will be removed from the south side of Brush Creek at the 1050 crossing to the NW corner of unit 3.
35. In unit 19, a wet area at the southern boundary in the NE ¼ of the SW ¼ of section 35, is greater than 1 acre and source to an intermittent stream flowing northwest of the 278H road, which is perennially wet. This portion of the unit will be dropped for protection of aquatic resources.
36. Unit 1 will use the road to the west that parallels the 278N that is outside of the 300-foot buffer and provides access to the same area. This road will be used as an alternate route to avoid reconstructing a road within the 300-foot RHCA. The 278P will be seeded and blocked to further use after the sale.

Wildlife

1. Goshawk Nest Protection – If an active goshawk nest is located within the project area during marking or implementation, a 30 acre year round no activity buffer will be placed around the nest and a 420 acre no activity buffer will be implemented from April 15 through August 15, to protect the goshawk pair and young from disturbance during the breeding season.
2. Wildlife Tree Management – Large diameter snags are sparse within the project area, which is likely due to past fire, timber harvest and firewood cutting activity. Snags and live tree replacements will be retained where opportunities exist in treatment units at levels recommended by scientific literature (Bull et al. 1997).

The following minimum amounts of snags and live tree replacements are to be retained within applicable cutting areas:

- Dry forest habitats: 4 snags and 8 live tree replacements per acre from the largest trees
- Moist forest habitats: 6 snags and 12 live tree replacements per acre from the largest trees

High hazard snags and snags in advanced stages of decay will not be used to meet retention objectives (Intermountain Forest and Industry Association et al. 1995). Retention practices will focus on ponderosa pine, western larch, Douglas-fir and western red cedar, with all veteran, relic or fire remnant ponderosa pine and western larch trees marked as leave trees. Trees killed by root disease will be avoided, where possible, to meet retention objectives because of their rapid deterioration and fall-down rate.

While retention objectives are accounted for on a treatment-level scale, some snags will be represented on every ten acres of treatment, in clusters or clumps where feasible, to promote good distribution of snags. Large diameter snags not designated for removal (greater than 15 inches DBH) that are felled for safety reasons will remain on site to provide for large woody debris recruitment and long-term site productivity.

Criteria for silvicultural prescriptions will include retention of some larger diameter defective or broken-top trees as live trees for future recruitment. Tree designation guidelines for live tree replacements will favor retention of large diameter trees, particularly hollow and broomed trees except when they pose a safety concern. Western larch, ponderosa pine and western red cedar greater than 20 inches DBH will be designated as first choices for live tree replacements.

Slash will be pulled back from veteran or relic ponderosa pine and western larch live trees and snags where needed to protect them from the adverse effects of prescribed burning. Grapple piling will be considered to treat fuels on moderate slopes where residual snags will be at risk from broadcast burning.

3. Marking Guides – Since treatment units exhibit a variety of stand conditions, harvest prescriptions and tree marking should reflect this variation. Throughout the layout and design, maintain the natural, irregular spacing of leave trees, given existing stand conditions. Even though the treatment prescriptions focus on removing over-topped, suppressed, poor formed individuals, it is desirable to leave some crown overlap.
4. Swales – Within all treatment units, small inclusions of moist pockets or swales of western red cedar will be left untreated and will not be impacted by harvest activities.
5. Unit 12 – No project activities within the patch of late successional cedar in Unit 12.
6. Retention of Hardwoods – Other than in the fuel break units, aspen and birch trees will not be harvested. If these species need to be cut for safety reasons, they will remain on site. Merchantable and submerchantable conifers will be harvested or slashed, respectively, in and around the aspen patch located in Unit 14 and any other aspen patches discovered during project layout, in order to reduce competition for water, nutrients and sunlight.

7. Vegetation Screen – Vegetation buffers will be left along the eastern boundary of Units 25 and 26 to provide security screening for wildlife and minimize unauthorized access along the meadow complex. Buffers will be approximately 100 to 200 feet, depending on the type of cover and topography and will transition from a no-cut zone into the treatment prescription.
8. Unit 1 Cutting Boundaries – The cutting boundaries in Unit 1 should be off-set to provide leave strip/cover patches associated with Old Barton Hump units.
9. Grapple Piling – In areas where grapple piling is prescribed for fuels reduction, leave approximately 2 slash piles per acre unburned to provide habitat for small forest mammals (e.g. snowshoe hare).
10. Bat Protection – If mines are found to be utilized by Townsend’s big-eared bat or fringed myotis, the timber harvest recommendations from the Species Conservation Assessment and Conservation Strategy for the Townsend’s Big-eared Bat (Pierson et al. 1999) will be implemented. This strategy delineates a 0.25-mile radius “no activity” buffer around mines to avoid disturbance during critical periods (e.g. maternity roosts, hibernacula). Since it is inconclusive what the critical time periods are, the “no activity” buffer will be year round.

“Bat-friendly” closures will be installed, where feasible, on abandoned mines found to support Townsend’s big-eared bats or fringed myotis.

Any other mine adits found in the project area that potentially provide habitat for bats will be buffered by a 500-foot no harvest buffer around the entrance.

Sensitive Species – If any sensitive species is located during the project layout or implementation, management activities will be altered, if necessary, to ensure that the proper protection measures are taken.

If any endangered, threatened, or sensitive species are located within the areas affected by the proposed action, project activities will be altered, as necessary, in order for the proper protection measures to be taken.

To avoid potential disturbance or conflicts with the Whiskey Rock bald eagle nest, no project activities will occur in Unit 1 from February 1 through August 15, unless the nest is determined to be inactive by wildlife personnel.

Rare Plants

1. Any changes to the proposed action that may occur during layout will be reviewed, and rare plant surveys will be conducted as necessary prior to project implementation. Newly documented occurrences will be evaluated, with specific protection measures implemented to protect population viability. Such measures could include the following:
 - Dropping units from harvest activity
 - Modifying unit boundaries to provide adequate buffers around documented occurrences, as determined by the project

botanist and based on topography, extent of contiguous suitable habitat for documented occurrences and the type of treatment proposed

- Modifying harvest methods, fuels treatment or logging systems to protect TES plants and their habitats
- Implementing, if necessary, Timber Sale Contract provisions B6.24, Protection Measures Needed for Plants, Animals, Cultural Resources, and Cave Resources; C6.24#- Site Specific Special Protection Measures; and B8.33, Contract Suspension and Modification.

Noxious Weeds

Noxious weed treatment in the project area will be conducted according to guidelines and priorities established in the Sandpoint Noxious Weed Control Project FEIS (USDA 1998). This document requires:

1. All timber sale contracts will require cleaning of off-road equipment prior to entry onto National Forest lands. If operations occur in areas infested with new invaders (as defined by the IPNF Weed Specialist), all equipment will be cleaned prior to leaving the site.
2. Gravel or borrow pits on federal lands used during road construction or reconstruction will be free of new weed invader species (as defined by the IPNF Weed Specialist). A list of weed species considered potential new invaders is included in the project file.
3. Any priority weed species (as defined by the IPNF Weed Specialist) identified during road maintenance will be reported to the District Weed Specialist. A list of priority weed species is included in the project file.
4. All newly constructed roads, skid trails, landings, fuelbreaks or other areas of disturbance (including maintenance on existing roads) will be seeded with a weed-free native and desired non-native seed mix and fertilized as necessary. Areas that are underburned will be evaluated after the burn and seeded and fertilized as necessary.
5. All straw or hay used for mulching or watershed restoration activities will be certified weed-free.

Soils

1. Tractor Yarding- Existing skid trails and slash mats are used in previously logged units whenever available to reduce additional impacts from harvest and site preparation activities. All new skid trails are designated and laid out to take advantage of the topography and minimize disruption of natural drainage patterns. Where terrain is conducive, trails are spaced at maximum distance. Excavated skid trails are to be fully re-contoured after logging is completed. All skid trails are seeded with the latest seed mix recommended at time of implementation.

Equipment avoids operating in moist or wet depression areas. This specifically affects units 1, 2, 16, 17, 19, 25, 26, and 32 where seasonal seepage occurs.

2. Skyline Yarding - The leading end of logs should be suspended during yarding. Yarding across any designated RHCA requires full suspension.
3. Road Construction and Reconditioning- An engineer or hydrologist will review locations of all roads longer than 300 feet prior to construction. Temporary road construction proposed in Units 12, 17, 18, 30, and 32 and road reconditioning of existing non-system roads in Units 16, 23, and 25 utilizes the existing old roadbed where present will obliterate them after harvest activities are concluded. This includes culvert removal, decompaction and/or re-contouring of the road prism, seeding, and incorporation of woody debris and organic matter. In areas where current improvements are advantageous (i.e. FR1050), the road will be further stabilized to reduce adverse effects from slumping. All landings will be located on roads.
4. Protection of Landslide Prone Areas- Portions of several units are on potential high mass failure landtypes. These include a small portion of Unit 30, the southwest corner of Unit 19 above Lake Pend Oreille, and the southern boundary of Units 20 and 21 adjacent to FR278H. Limited cutting, modification of the unit boundary, or exclusion, especially when the area is adjacent to a cut slope, is recommended.
5. Nutrient protection on Machine or Hand-Piled Areas- The following soil nutrient management recommendations from the Intermountain Forest and Tree Nutrient Cooperative (IFTNC) and Rocky Mountain Research Station (RMRS) is applied as appropriate to each activity area where organic material is removed:
 - Practice conventional removal (lop and scatter) rather than whole tree removal. The “lop and scatter” technique should be practiced during intermediate as well as final harvest operations.
 - Let slash remain on site over winter so mobile nutrients such as potassium can leach from fine materials back to the soil.
 - Light broadcast burn or underburn for release of potassium and other nutrients.
 - Avoid mechanical site preparation.
 - Plant species appropriate to the site.
6. Slash should be left for one wet season over a minimum of 4 to 6 months (not including summer months from July through September) to recycle nutrients back into the soil. As this is a hazardous fuels reduction project, determination of fire risk where slash is left untreated for prolonged periods of time will be made by the district fire management officer. Where fire risk is considered high, such as along main roads,

private land boundaries, and structures, flexibility will be given to treat slash prior to it being left for 6 months.

7. Retention of Coarse Woody Debris- Management of coarse woody debris and organic matter will follow the USFS Region 1 guidelines from Graham et al. (1994). In units where existing coarse material is not sufficient (i.e. Units 5, 7, and 16), project activities ensure that enough coarse woody debris is left to sustain long term soil productivity, while still meeting fuel reduction objectives (Recommendations for these habitat types are 5-15 tons/acre for dry and 17-33 tons/acre for moist sites).
8. Protection during Grapple Piling or Mechanical Harvest Activities – Mechanical harvest or grapple piling equipment utilizes existing trails, operates on a slash mat whenever enough material is available, avoids saturated soil conditions, and stays on slopes less than ~40 percent to prevent soil disturbance in excess of guidelines. Only areas that are reasonably accessed by ground-based equipment are treated and none of the trails are excavated to facilitate access
9. Protection During Prescribed Burning Activities- Prescribed underburning and pile burning should take place only when the upper surface inch of mineral soil has a soil moisture content at or above 25 percent by weight or 100 percent duff moisture. This is particularly important in Units 1, 3, 6, 9, 10, 12, 14, 15, 16, 19, 20, 21, 25, 26, 30, 31, and 32 where soil productivity on the primarily west- and south-facing slopes is reduced and could be impacted through severe burning of the often shallow soils.
10. Protection of Soils from Weed Infestation - Weed mitigation measures and prevention practices occurs in accordance with the requirements of the Sandpoint Noxious Weed Control EIS (USDA Forest Service 1998b) for all landings and road disturbances.

Transportation

1. An engineer or hydrologist will review locations of all roads longer than 300 feet prior to construction. Temporary road construction proposed in Units 12, 16, 18, 30, and 32 will utilize the existing old roadbed where present and will be obliterated after harvest activities are concluded. This includes culvert removal, decompaction and re-contouring of the road prism, seeding, fertilizing, and incorporating woody debris and organic matter. In areas where current improvements will be advantageous (i.e. FR1050), the road will be further stabilized to reduce adverse effects.
2. Newly constructed temporary roads adjacent to South Twin and Tumbledown Creeks (temporary roads #4 and #2 accessing units 17 and 12) will be built, used, and decommissioned within a single season.

3. Temporary road #2, accessing unit 12, will have a slash filter windrow on the north edge of the road to ensure that no sediment enters Tumbledown Creek.
4. Road segments identified for weed treatment and proposed for decommissioning will be treated prior to decommissioning.
5. Temporary roads will be located in a manner to prohibit unauthorized use during the project, closed with gates, and will be obliterated after project related activities are completed.
6. Each new temporary road constructed will not exceed one half mile in length, and the combined distance of all new temporary road constructed in the project will not exceed one mile.
7. Approximately 1.87 miles of road that is currently impassible and needed for this project will be opened during project activities, secured with gates during project activities, and closed to pre-project status after project activities are completed.
8. When the purchaser is working behind a gated road the gate shall be closed at the end of each day in order to not establish use on these roads.
9. No log hauling on weekends or holidays.
10. Area road closures implemented for quality hunt in Idaho Fish and Game big game Management Unit 4 will be followed on road 1050 accessing units 3, 6, and 32.
11. Prior to log hauling, a base of coarse gravel will be added to road 278 travelway where the following streams cross road 278: Tumbledown Creek, Gold Creek, Branch North Gold, Kickbush Gulch, Granite Creek, and Tom's Gulch in order to reduce sedimentation. In addition cleaning specific lengths of ditchline, and installing water bars or rolling dips along road 278 will occur. This work will occur prior to hauling.
12. An undersized culvert at the crossing of 278 and Tumbledown Creek will be replaced with a larger culvert in order to create fish passage for westslope cutthroat trout. This work will be completed prior to log hauling.

Vegetation

1. Fuel reduction treatments will focus on leaving good form, full crowned, healthy trees (in the upper crown classes) in the following order of preference: western white pine, western larch, ponderosa pine and western redcedar as well as some healthy Douglas-fir.
2. Fuel reduction treatments will employ a combination of mechanical methods to remove saplings, brush, and primarily small diameter (i.e., 4 to 14 inches in diameter) mixed conifer species in areas of mortality attributed to insect attack, competition, and/or root disease.

3. Provide for long-term reduction of ladder fuels as well as reduction in live and dead fuel loadings by increasing desired potentially long-lived early seral tree species through regeneration cutting and planting in areas where shorter-lived species (e.g., Douglas-fir, grand fir) have high mortality or are at risk of high mortality.
4. Priority will be given to retaining cedar-dominated riparian areas and large, healthy larch, ponderosa pine, and white pine.
5. Openings created by fuels reduction treatments will be planted with white pine, western larch and ponderosa pine.

Fire/Fuels

1. Prescribed underburning and pile burning should take place only when the upper surface inch of mineral soil has a soil moisture content at or above 25 percent by weight or 100 percent duff moisture. This is particularly important in Units 1, 3, 6, 9, 10, 12, 14, 15, 16, 19, 20, 21, 25, 26, 30, 31, and 32 where soil productivity on the primarily west- and south-facing slopes is reduced and could be impacted through severe burning of the often shallow soils.
2. Slash should be left a minimum of 6 months to recycle nutrients back into the soil. As this is a hazardous fuels reduction project, determination of fire risk where slash is left untreated for prolonged periods of time will be made by the district fire management officer. Where fire risk is considered high, flexibility will be given to treat slash prior to it being left for 6 months.
3. Pile burning will occur in compliance with the Idaho/Montana Airshed Group. In order to prevent smoke from settling in valley bottoms no burning will be initiated during times when air quality restrictions are in place.

Heritage Resources

Special provisions are utilized in all contracts to provide for protection of all existing recorded heritage resources. They also require that the contractor promptly notify the Forest Service upon discovery of a previously unidentified cultural resource.

Tumbledown Hazardous Fuels Reduction Project Environmental Assessment

Appendix B – Monitoring

Project Monitoring

The Forest Plan documents a system to monitor and evaluate activities on the forest. Monitoring and evaluation each have distinctly different purposes and scope. Monitoring is designed to gather the data necessary for project evaluation. During evaluation of project effectiveness, data gathered are analyzed and interpreted. This process provides periodic data necessary to determine if implementation is within the bounds of the project design (Forest Plan, page IV-7). For the Tumbledown Hazardous Fuels Reduction Project, the proposed action would comply with specific monitoring requirements identified by the Forest Plan (Chapter IV). The length of time that monitoring is needed would be determined by the results and evaluation of what is being monitored. When it is certain that regulations and standards are being met, monitoring of a particular element will cease.

Project implementation generally involves the efforts of a variety of individuals with both specialized and general skills and training. Employees are accustomed to working together to achieve the desired project objectives. For example, it is common for a sale preparation forester or sale administrator to discuss specific project conditions with the wildlife biologist or hydrologist to apply the best practices on the ground. Joint field reviews are conducted as needed. This steady, informal communication allows for incremental adjustments throughout layout and project implementation to achieve the desired results.

Not all monitoring is considered mandatory and its implementation is not a consideration in the determination of environmental effects. The monitoring projects listed below are designed to be accomplished during project activities but are dependent upon the availability of funds and other resources.

Forest Vegetation

Each active harvest unit would be visited by a sale administrator at a frequency necessary to assure compliance with the contract. All regeneration cutting units would be monitored for regeneration success the first, third (and fifth year if necessary) following planting; as required under NFMA. Levels of insect and disease activity will also be monitored.

Fuel Treatments

Each unit would be visited at a frequency necessary to ensure compliance with the contract and that the fuel management and downed coarse woody debris objectives were met. Baseline fuel inventories have been completed in the proposed treatment areas.

Following implementation of the fuel treatments, these treatment areas would be re-inventoried to measure the effectiveness of fuel treatments. Fuel treatments will be monitored throughout time to determine when the next treatment and what type of treatment will occur.

Best Management Practices

BMPs would be incorporated into many phases of the project (Appendix C). A hydrologist would review the planned design of all road maintenance to ensure compliance with BMPs. The engineering representative and the hydrologist would monitor all temporary road construction and permanent road maintenance to ensure that specifications are met. Road use, maintenance, and closure structures would also be monitored by the sale administrator during project activities.

A sale administrator would visit each active cutting unit at a frequency necessary to ensure compliance with the BMPs and the timber sale contract. Minor contract changes or contract modifications would be agreed upon and enacted, when necessary, to meet objectives and standards on the ground.

Soils

Levels of soil compaction would be monitored by the forest soil scientist following completion of project activities to ensure the compliance with soil quality guidelines and to validate the spreadsheet model.

Water Quality and Fisheries

Buffer widths for RHCAs in the project area will be monitored prior, during, and following implementation by the project hydrologist and fish biologist to ensure their implementation. Project activities occurring within RHCAs will be monitored by the contract administrator to ensure proper BMPs are being followed.

Air Quality

Air quality is monitored by the North Idaho and Montana Airshed Groups during the fall and spring burning seasons and yearlong by the Idaho Department of Environmental Quality. When burning timber harvest residues (slash), smoke management guidelines will be followed in compliance with the Clean Air Act.

Visuals

The project would be reviewed by the District visual resource specialist before, during and after cutting operations are complete to assess whether visual quality objectives were met.

Heritage Resources

Special provisions are utilized in all contracts to provide for protection of all existing recorded heritage resources. They also require that the contractor promptly notify the Forest Service upon discovery of a previously unidentified cultural resource.

Noxious Weeds

Pretreatment of roads and equipment as proposed (Appendix A) would be documented on sale inspection reports. The effectiveness of seeding disturbed areas would be evaluated upon completion of the activity by the timber sale administrator and/or botanist. Treated areas would be surveyed and monitored according to treatment priorities established in the Sandpoint Noxious Weed Control Project FEIS (USDA Forest Service 1998a).

Disturbed sites would be monitored, and weed treatment would be accomplished as necessary. An Integrated Pest Management approach (including biological, mechanical, cultural and chemical control) would be used. This would decrease the chance of existing infestations becoming established in new areas, and would reduce the risk of new invaders becoming established.

Rare Plants

Monitoring of sensitive plant populations where the proposed activity was modified by buffering to avoid adverse effects would be conducted to validate the effectiveness of mitigation measures during and following the activity.

IPNF direction is to inventory and manage sensitive plants so that no new species have to be listed as threatened or endangered. Suitable sensitive plant habitat in project areas is surveyed and projects modified as necessary to achieve this objective. Sensitive plants are protected according to site-specific management plans developed by Forest and zone botanists.

Monitoring of rare plant populations where the proposed activity was modified by buffering to avoid adverse effects will be conducted to validate the effectiveness of mitigation measures during and following the activity.

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Appendix C – Best Management Practices and Forest Plan Consistency for Aquatic Resources

Site-Specific Best Management Practices

PRACTICE 11.05 - Wetlands Analysis and Evaluation

Objective: To delineate wetlands within sale areas in order to prevent damage to facilities or degradation of soil and water resources.

Effectiveness: High

Compliance: FPA Rule 4.d.v(c) – Meets

PRACTICE 13.03 - Tractor Operation Excluded from Wetlands, Bogs, & Wet Meadows

Objective: To maintain wetland functions and avoid adverse soil and water resource impacts associated with the destruction or modification of wetlands, bogs and wet meadows.

Effectiveness: Much of this mitigation consists of avoiding the impact [40 CFR 1508.20(a)]. The Forest Service has near-complete control over construction operations. Effectiveness is expected to be high.

Compliance: FPA Rule 3.h.iii - Meets

Implementation: At a minimum, the following specific protective requirements for wetlands identified on the Sale Area Map (SAM) will be incorporated into CT6.61# (Wetlands Protection):

1. Soil and vegetation along lakes, bogs, swamps, wet meadows, springs, seeps, or other sources where the presence of water is indicated will be protected from disturbance which would cause adverse effects on water quality, quantity, and wildlife and aquatic habitat (FPA Rule 3.h.iii).
2. An equipment exclusion zone shall extend a minimum of 50 feet from the wetlands, bogs, and wet meadows.

PRACTICE 13.04 - Revegetation of Surface Disturbed Areas

PRACTICE 14.14 - Revegetation of Areas Disturbed by Harvest Activities

Objective: To protect soil productivity and water quality by minimizing soil erosion.

Effectiveness: Revegetation can be moderately effective at reducing surface erosion after one growing season following disturbance and highly effective in later years. Effectiveness has been shown to vary from 10 percent on 3/4:1 slopes to 36 percent on 1:1 slopes to 97 percent on 1:1 slopes in later years (King, John G. and E. Burroughs. Reduction of Soil Erosion on Forest Roads. Intermountain Research Station General Technical Report, 1988).

Compliance: FPA Rules 3.d.iii & e.i, ii - Meets

Implementation: All temporary roads, landings, and skid trails in the sale area will be seeded within one year after harvesting is completed. Seed mixes and fertilizer specifications will be incorporated into Timber Sale Contract provision CT6.601# (Erosion Control Seeding). Timber Sale Contract provision CT6.623# (Temporary Road, Skid Trail/Skid Road and Landing) will identify that scarification/ripping of compacted landings and closed roads will be a minimum of 4 inches, not to exceed 2 feet.

- a. All temporary roads, landings, and skid trails will also be fertilized to give the new plants extra support in becoming established.
- b. The standard Idaho Panhandle National Forests moist site erosion control seed mix will be used.

PRACTICE 14.06 - Riparian Area Designation

PRACTICE 15.12 - Control of Construction in Riparian Areas

Objective: To minimize the adverse effects on Riparian Areas with prescriptions that manage nearby logging and related land disturbance activities.

Effectiveness: Moderate

Compliance: FPA Rules 3.g.ii, iii, & iv; 3.f.iv - Meets

Implementation: Riparian areas will be protected through the following requirements that will be incorporated into timber sale layout, or into the timber sale contract as identified below:

1. Provide the large organic debris, shading, soil stabilization, wildlife cover, and water filtering effects of vegetation along streams [FPA Rule 3.g.i-iii]. The following measure(s) are implemented during sale layout:
 - (a) Stream Protection Zone that consists of a buffer of 50 feet slope distance from the edge of intermittent channels. No timber harvest activities shall occur within the Stream Protection Zone.
2. Waste resulting from logging operations, such as crankcase oil, filters, grease and fuel containers, shall not be placed inside the Stream Protection Zones [FPA Rule 3.f.iv and TSC Provision BT6.34].

PRACTICE 14.11 - Log Landing Erosion Prevention and Control;

PRACTICE 14.12 - Erosion Prevention & Control During Timber Sale Operations;

PRACTICE 14.15 - Erosion Control on Skid Trails.

Objective: To protect water quality by minimizing erosion and subsequent sedimentation derived from log landings and skid trails.

Effectiveness: Moderate

Compliance: FPA Rules 3.e.i, ii; 3.d.iii - Meets

Implementation: The following criteria will be used in controlling erosion and restoring landings and skid trails to minimize erosion:

General:

1. Deposit waste material from construction or maintenance of landings and skid and fire trails in geologically stable locations at least 100 feet outside of the appropriate Stream Protection Zone [FPA Rule 3.f.iii].
2. Skid trails and landings will be seeded with a mix specified in C6.601#.

Landings:

1. During period of use, landings will be maintained in such a manner that debris and sediment are not delivered to any streams.
2. Landings shall be reshaped as needed to facilitate drainage prior to fall and spring runoff. Landings shall be stabilized by establishing ground cover or by some other means within one year after harvesting is completed [FPA Rule 3.e.ii].
3. Landings will drain in a direction and manner that will minimize erosion and will preclude sediment delivery to any stream.
4. After landings have served the Purchaser's purpose, the Purchaser shall ditch or slope them to permit the water to drain or spread [Provision BT6.63 (Landings)].

Skid Trails:

1. Skid trails and fire trails shall be stabilized whenever they are subject to erosion, by waterbarring, cross-draining, outsloping, scarifying, seeding, or other suitable means. This work shall be kept current to prevent erosion prior to fall and spring runoff [FPA Rule 3.e.i].
2. The sale administrator and/or watershed specialist will designate the spacing of water bars on skid trails. [Reference FSH 7709.56]

PRACTICE 14.19 - Acceptance of Timber Sale Erosion Control Measures Before Sale Closure

Objective: To assure the adequacy of required timber sale erosion control work.

Effectiveness: High

Compliance: No directly related FPA Rule

Implementation and Responsibility: Timber Sale Contract provision B6.35 requires that upon the purchaser's written request and assurance that work has been completed, the Forest Service shall perform an inspection. Areas that the purchaser might request acceptance for are specific requirements such as logging, slash disposal, erosion control, or snag felling. In evaluating acceptance the following definition will be used by the Forest Service: "Acceptable" erosion control means only minor deviation from established standards, provided no major or lasting impact is caused to soil and water resources. Certified Timber Sale Administrators will not accept as complete erosion control measures that fail to meet these criteria.

PRACTICE 15.03 - Road and Trail Erosion Control Plan

Objective: To minimize the effects of erosion and the degradation of water quality through erosion control work and road design.

Effectiveness: Moderate

Compliance: No Related FPA Rule

Implementation: Prior to the start of construction, the Contractor shall submit a schedule for proposed erosion control work as required in the Standard Specifications. The schedule shall include all erosion control items identified in the specifications. Erosion control work to be done by the Contractor will be defined in Standard Specification 204 and/or in the Drawings. The schedule shall consider erosion control work necessary for all phases of the project. The Engineer will certify that the Contractors Erosion Control Plan meets the specifications of Std. FS Spec. Section 204.

PRACTICE 15.07 - Control of Permanent Road Drainage

Objective: To minimize the erosive effects of concentrated water and the degradation of water quality by proper design and construction of road drainage systems and drainage control structures.

Effectiveness: Moderate. Designed and controlled ditches, cross drain spacing, and culvert discharge prevent water from running long distances over exposed ground.

Compliance: FPA Rules 4.c.viii; 4.d.iii(a) & (b) - Meets

Implementation: The following items will be included in the timber sale contract provisions or road contract special project specifications.

1. Drainage ways shall be cleared of all debris generated during construction and/or maintenance that potentially interfere with drainage or water quality [IFPA Rule 4(c)(ii), Timber Sale Contract Clause C5.4, and Standard Road Specifications-Special Project Specification 204.04].
2. During and following operations on out-sloped roads, out-slope drainage shall be retained and berms shall be removed on the outside edge except those intentionally constructed for protection of road grade fills [IFPA Rule 4(c)(vi) and Timber Sale Contract Clause C5.4].

3. Cross drains and relief culverts shall be constructed to minimize erosion of embankments. The time between road construction and installation of erosion control devices shall be minimized. Drainage structures or cross drains shall be installed on uncompleted roads which are subject to erosion prior to fall or spring runoff. Relief culverts shall be installed with a minimum grade of 1 percent [IFPA Rule 4(c)(viii) and Standard Road Specifications-Special Project Specification 204.1].
4. Cross drains and relief culverts will be installed so as to minimize concentrations of intercepted water (see also Practice 15.02 f.(3)).

PRACTICE 15.08 - Pioneer Road Construction

Objective: To minimize sediment production and mass wasting associated with pioneer road construction.

Effectiveness: Moderate

Compliance: No directly related FPA Rule

Implementation: The following contract specifications will be required:

1. Construction of pioneer roads shall be confined to the designed location of the road prism unless otherwise approved by the Contracting Officer (Std. FS Spec. 203.11).
2. Pioneering shall be conducted so as to prevent undercutting of the designated final cut slope, and to prevent avoidable deposition of materials outside the designated roadway limits (Std. FS Spec. 203).
3. Permanent culverts will be installed at wet crossings during the pioneer phase unless positive control of sediment can be accomplished during installation, use, and removal of the temporary structure.

PRACTICE 15.09 - Timely Erosion Control Measures on Incomplete Road and Stream crossing Projects

Objective: To minimize erosion of, and sedimentation from, disturbed ground on incomplete projects.

Effectiveness: Moderate

Compliance: FPA Rules 4.c.ii,iii,iv; & 4.d.iii - Meets

Implementation: The following measures will be implemented during projects:

1. Temporary culverts, side drains, flumes, cross drains, diversion ditches, energy dissipaters, dips, sediment basins, berms, debris racks, or other facilities needed to control erosion will be installed as necessary. The removal of temporary culverts, culvert plugs, diversion dams, or elevated stream crossing causeways will be completed as soon as practical;

2. The removal of debris, obstructions, and spoil material from channels and floodplains;
3. Seeding with an erosion control seed mix approved for use on the Idaho Panhandle National Forests to minimize erosion.
4. Install drainage structures or cross drain uncompleted roads that are subject to erosion prior to fall or spring runoff. (Std Spec 204)

Erosion control measures must be kept current with ground disturbance, to the extent that the affected area can be rapidly "closed," if weather conditions deteriorate. Areas must not be abandoned for the winter with remedial measures incomplete.

PRACTICE 15.10 - Control of Road Construction Excavation and Sidecast Material

PRACTICE 15.18 - Disposal of Right-of-Way and Roadside Debris

See also Practice 13.05

Objective: To insure that unconsolidated excavated and sidecast material, construction slash, and roadside debris, generated during road construction, is kept out of streams and to prevent slash and debris from subsequently obstructing channels.

Effectiveness: High

Compliance: FPA Rule 4.c.iii,iv; & 4.d.i,ii,iii

The slash windrow and other erosion control devices will not be placed in existing stream channels or obstruct culvert outfalls. Large limbs and cull logs may be bucked into manageable lengths and piled alongside the road for fuelwood.

Implementation: In the construction of road fills near streams, compact the material to reduce the entry of water, minimize the amount of snow, ice, or frozen soil buried in the embankment. No significant amount of woody material shall be incorporated into fills. Slash and debris may be windrowed along the toe of the fill, but in such a manner as to avoid entry into a stream and culvert blockage.

Where slash windrows are not desirable or practical, other methods of erosion control such as erosion mats, mulch, and straw bale or fabric sediment fences will be used. Where exposed material (excavation, embankment, borrow pits, waste piles, etc.) is potentially erodible, and where sediments would enter streams, the material will be stabilized prior to fall or spring runoff by seeding, compacting, rip-rapping, benching, mulching or other suitable means.

The following standard specs will be included in all road contracts that include clearing and excavation.

1. Standard Specification 201 (Slash Treatment)
2. Standard Specification 203 (Excavation and Embankments)

PRACTICE 15.21 - Maintenance of Roads

Objective: To conduct regular preventive maintenance operations to avoid deterioration of the roadway surface and minimize disturbance and damage to water quality, and fish habitat.

Effectiveness: Moderate

Compliance: FPA Rule 4.d.i, ii, iii, iv, v - Meets

Implementation: For roads in active timber sale areas standard TSC provision B5.4 (Road Maintenance) requires the purchaser to perform or pay for road maintenance work commensurate with the purchaser's use. Purchaser's maintenance responsibility shall cover the before, during, and after operation period during any year when operations and road use are performed under the terms of the timber sale contract (C5.4 - Road Maintenance). Purchaser shall perform road maintenance work, commensurate with purchaser's use, on roads controlled by Forest Service and used by purchaser in connection with this sale except for those roads and/or maintenance activities which are identified for required deposits in C5.411# and C5.412#. All maintenance work shall be done concurrently, as necessary, in accordance with T-specifications set forth herein or attached hereto, except for agreed adjustments (TSC C5.4- T301, 310).

1. Sidecast all debris or slide material associated with road maintenance in a manner to prevent their entry into streams [IFPA Rule 4(d)(i), Timber Sale Contract Clause C5.4, and Standard Road Specification-Special Project Specification T108].
2. Repair and stabilize slumps, slides, and other erosion features causing stream sedimentation [IFPA Rule 4(d)(ii), Timber Sale Contract Clauses C5.4 and C5.253, and Special Project Specification T108].
3. Active Roads. An active road is a forest road being used for hauling forest products, rock and other road-building materials. The following maintenance shall be conducted on such roads.
 - (a) Culverts and ditches shall be kept functional.
 - (b) During and upon completion of seasonal operations, the road surface shall be crowned, out-sloped, in-sloped or water barred, and berms removed from the outside edge except those intentionally constructed for protection of fills.
 - (c) The road surface shall be maintained as necessary to minimize erosion of the subgrade and to provide proper drainage.
 - (d) If road oil or other surface stabilizing materials are used, apply them in such a manner as to prevent their entry into streams [IFPA Rule 4(d)(iii)] and Timber Sale Contract Clauses C5.441 and C6.341].

Effectiveness: These measures should effectively minimize erosion from roads.

4. Inactive roads. An inactive road is a forest road no longer used for commercial hauling but maintained for access (e.g., for fire control, forest management activities, recreational use, and occasional or incidental use for minor forest products harvesting). The following maintenance shall be conducted on inactive roads.
 - (a) Following termination of active use, ditches and culverts shall be cleared and the road surface shall be crowned, out-sloped or in-sloped, water barred or otherwise left in a condition to minimize erosion. Drainage structures will be maintained thereafter as needed.
 - (b) The roads may be permanently or seasonally blocked to vehicular traffic [FPA Rule 4.d.iv].
 - (c) Roads will be seeded and fertilized.
 - (d) The roads may be permanently or seasonally blocked to vehicular traffic.
5. Abandoned Roads. An abandoned road is not intended to be used again. No subsequent maintenance of an abandoned road is required after the following procedures are completed:
 - (a) The road is left in a condition suitable to control erosion by out-sloping, water barring, seeding, or other suitable methods.
 - (b) Ditches are cleaned.
 - (c) The road is blocked to vehicular traffic.
 - (d) The department may require the removal of bridges and culverts except where the owner elects to maintain the drainage structures as needed.

For roads not in an active timber sale area, road maintenance must still occur at sufficient frequency to protect the investment in the road as well prevent deterioration of the drainage structure function. This will be accomplished by scheduling periodic inspection and maintenance, including cleaning dips and cross drains, repairing ditches, marking culvert inlets to aid in location, and cleaning debris from ditches and culvert inlets to provide full function during peak runoff events (FSH 7709.15).

PRACTICE 15.24 - Snow Removal Controls

Objective: To minimize the impact of snow melt on road surfaces and embankments and to reduce the probability of sediment production resulting from snow removal operations.

Effectiveness: Moderate

Compliance: No directly related FPA Rule

Implementation: For Forest roads that will be used throughout the winter, the following measures will be employed:

1. The Purchaser is responsible for snow removal in a manner that will protect roads and adjacent resources.
2. Rocking or other special surfacing and/or drainage measures may be necessary before the operator is allowed to use the roads.
3. During snow removal operations, banks shall not be undercut nor shall gravel or other selected surfacing material be bladed off the roadway surface. Ditches and culverts shall be kept functional during and following roadway use. If the road surface is damaged, the Purchaser shall replace lost surface material with similar quality material and repair structures damaged in blading operations.
4. Snow berms shall not be left on the road surface or shall be placed to avoid channelization or concentration of melt water on the road or erosive slopes. Berms left on the shoulder of the road shall be removed and/or drainage holes opened at the end of winter operations and before the spring breakup. Drainage holes shall be spaced as required to obtain satisfactory surface drainage without discharge on erodible fills. On insloped roads, drainage holes shall also be provided on the ditch side, but care taken to insure that culverts and culvert inlets are not damaged.

PRACTICE: 15.25 - Obliteration of Temporary Roads

Objective: To reduce sediment generated from temporary roads by obliterating them at the completion of their intended use.

Effectiveness: High. Following use, obliteration would bring full recovery within 3-5 years.

Compliance: No FPA rules directly address road obliteration. Obliteration exceeds standards for abandoned roads (4.04.e.i-iv).

EXPLANATION: Temporary roads are constructed for a specific short-term purpose, such as, ski area development roads, logging spurs on a timber sale, and so forth. In order to prevent continued low level casual use, such roads are obliterated at the completion of their intended use. Due to short-term nature of temporary roads, continued maintenance funds can not be used for work on temporary roads. Temporary roads that are allowed to remain in use beyond their prescribed time are subject to continued, uncorrected damage, and they can become chronic sediment sources.

Effective obliteration is generally achieved through a combination of the following measures:

- a. Road effectively drained and blocked.
- b. Temporary culverts and bridges removed and natural drainage on figuration re-established.
- c. Road returned to resource production through revegetation (grass, browse, or trees).
- d. Sideslopes reshaped and stabilized.

IMPLEMENTATION: For timber sales, temporary road closure, stabilization and removal of temporary structures are accomplished by the Timber Purchaser. The certified Sale Administrator assures compliance with plans and the Timber Sale Contract. Forest Service supervisors are responsible for insuring that other temporary roads developed by the Forest Service met design standards and management requirements. Temporary road development on Forest Service lands that are allowed through special use permits and/or easements are subject to the same obliteration requirements as temporary roads on timber sales. District Rangers or their representatives are responsible for assuring the obliteration of such roads is accomplished.

REFERENCES: Timber Sale Contract provisions B6.62, B6.5, C6.6, and C6.601; FSM 2522; SWCP 11.03, 11.08, 11.09, 13.04, 14.12 - 14, 14.19, and 15.03; NFMA; FSH 2409.15, Timber Sale Administration Handbook; see references in "Best Management Practice" Definition (05--2 and 3).

Idaho Panhandle National Forests Forest Plan Consistency (IPNF, Forest Plan, p. 11-33)

Specific management objectives in the Idaho Panhandle National Forests Forest Plan pertaining to water resources are:

- 1. Management activities on Forest Lands will not significantly impair the long-term productivity of the water resource and ensure that state water quality standards will be met or exceeded.**

Idaho State Best Management Practices (BMPs) are designed to protect the long-term productivity of the water resource and ensure state water quality standards will be met. The South Grouse Hazardous Fuel Reduction Project will meet standard BMPs. Site-specific BMPs were also included with this project as mitigation measures to improve water quality.

- 2. Maintain concentrations of total sediment or chemical constituents within state standards.**

The net production and delivery of sediment from the proposed project is anticipated to be very small. With the implementation of design criteria, State and site-specific BMPs, and INFS standards, the potential for sediment delivery will be further reduced. Since there are no specific water quality standards, or beneficial use of water within the project area, and what little sediment or chemical constituents that may enter an intermittent channel will be further reduced and dispersed before entering any perennial waters. The action alternative will meet State standards for sediment and chemical constituents.

- 3. Implement project level standards and guidelines for water quality contained in the Best Management Practices.**

The proposed action is consistent with consistent with Idaho Forest Practices Rules. In addition to standard State BMPs, other soil and water conservation practices that are approved BMPs are built into the timber sale contract. Site-specific BMPs are specified and are listed in the BMP portion of this appendix. Soil and water conservation principles were used during alternative design to determine the location and types of treatments including

which areas should be avoided or restored. The specified and designed measures surpass those required by the State Forest Practices Act and are consistent with Forest Service standards.

4. Cooperate with the states to determine necessary instream flows for various uses.

Instream flows are not an issue with the proposed project. Therefore, this standard is not applicable.

5. Manage public water system plans for multiple uses by balancing present and future resources with public water supply needs.

Streams not defined as public water systems, but used by individuals for such purposes, will be managed to standards established by the state's forest practices rules and/or the National Forests' BMPs or to the fisheries standards whichever is applicable

6. Activities within non-fishery drainages, including first and second order streams, will be planned and executed to maintain existing biota.

The existing biota will be maintained in first and second order streams through standard and site specific BMPs and the application of INFS standards and guidelines. Site Specific BMPs and applicable INFS standards and guidelines are listed and described in the BMP portion of this appendix.

7. It is the intent of this plan that models be used as a tool to approximate the effects of National Forest activities on water quality values.

This standard has been met for the proposed action. The WEPP model was used to predict sediment yield changes. Road drainage crossings were inventoried to assess erosional hazards and potential risks. The condition of the pipe, fill, and channel were examined and assessed to determine the overall condition of the crossing (project file).

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Appendix D – Fisheries Management Direction & Guidelines

Inland Native Fish Strategy Standards and Guidelines (USDA Forest Service 1995, A7-A13)

Only INFS standards and guidelines that apply to the range of alternatives for the South Grouse Hazardous Fuels Reduction Project are addressed here; those standard and guidelines that do not apply are in the INFS document located in the project file. These INFS standards and guidelines are addressed with comments in italics as follows:

Timber Management (A-7)

TM-1. Prohibit timber harvest, including fuelwood cutting, in Riparian Habitat Conservation Areas, except as described below.

- a. Where catastrophic events such as fire, flooding, volcanic, wind, or insect damage result in degraded riparian conditions, allow salvage and fuelwood cutting in Riparian Habitat Conservation Areas only where present and future woody debris needs are met, where cutting would not retard or prevent attainment of other Riparian Management Objectives, and where adverse effects can be avoided to inland native fish. For priority watersheds, complete watershed analysis prior to salvage cutting in RHCAs.
- b. Apply silvicultural practices for Riparian Habitat Conservation Areas to acquire desired vegetation characteristics where needed to attain Riparian Management Objectives. Apply silvicultural practices in a manner that does not retard attainment of Riparian Management Objectives and that avoid adverse effects on inland native fish.

Using “Standard Widths Defining Interim RHCAs,” no commercial timber harvest activities are proposed under the action alternative within RHCAs in the project area.

Effectiveness: High. No commercial harvest is to occur within the RHCAs.

Roads Management (A-7-8)

RF-1. Cooperate with Federal, Tribal, State, and county agencies, and cost-share partners to achieve consistency in road design, operation, and maintenance necessary to attain Riparian Management Objectives.

The proposed activities are all on National Forest lands, but have been coordinated with all those listed where applicable.

Effectiveness: High. This coordination is standard policy.

RF-2. For each existing or planned road, meet the Riparian Management Objectives and avoid adverse effects to inland native fish by:

RF-2 a. Completing watershed analyses prior to construction of new roads or landings in Riparian Habitat Conservation Areas (RHCAs) within priority watersheds.
No construction of new roads, temporary roads, or landings is proposed within RHCAs.

RF-2 b. Minimizing road and landing locations in Riparian Habitat Conservation Areas.

No new roads or landings are proposed within RHCAs in the action alternative.

Effectiveness: *High.*

RF-2 c. Initiating development and implementation of a Road Management Plan or a Transportation Management Plan. At a minimum, address the following items in the plan:

1. Road design criteria, elements, and standards that govern construction and reconstruction.
2. Road management objectives for each road.
3. Criteria that govern road operation, maintenance, and management.
4. Requirements for pre-, during-, and post-storm inspections and maintenance
5. Regulation of traffic during wet periods to minimize erosion and sediment delivery and accomplish other objectives such as protection of the road surface.
6. Implementation and effectiveness monitoring plans for road stability, drainage, and erosion control.
7. Mitigation plans for road failures.

The interdisciplinary team (IDT) evaluated access and road improvement needs within the project area.

Effectiveness: *Moderate.*

RF-2 d. Avoiding sediment delivery to streams from the road surface.

1. Outsloping of the roadway surface is preferred, except in cases where outsloping would increase sediment delivery to streams or where outsloping is unfeasible or unsafe.

This standard is applied directly for the proposed temporary roads.

Effectiveness: *High.* Roads would be constructed with this design.

2. Route road drainage away from potentially unstable stream channels and hillslopes.

Effectiveness: *High.* Improved road drainage would be part of the road package. Water would be less concentrated below existing roads than at present.

RF-2 e. Avoiding disruption of natural hydrologic flow paths.

Roadwork associated with this project including road reconstruction and decommissioning will be completed.

Effectiveness: High. Road reconstruction projects would restore the hydrologic flow paths.

RF-2 f. Avoid sidecasting of soils or snow. Sidecasting of road material is prohibited on road segments within or abutting RHCAs in priority watersheds.

Sidecasting of snow and/or soils would be prohibited at all stream crossings

RF-3. Determine the influence of each road on the Riparian Management Objectives. Meet Riparian Management Objectives and avoid adverse effects on inland native fish by:

- a. Reconstructing road and drainage features that do not meet design criteria or operation and maintenance standards, or that have been shown to be less effective than designed for controlling sediment delivery, or that retard attainment of Riparian Management Objectives, or do not protect priority watersheds from increased sedimentation.
- b. Prioritizing reconstruction based on the current and potential damage to inland native fish and their priority watersheds, the ecological value of the riparian resources affected, and the feasibility of options such as helicopter logging and road relocation out of Riparian Habitat Conservation Areas.
- c. Closing and stabilizing; or obliterating and stabilizing; roads not needed for future management activities. Prioritize these actions based on the current and potential damage to inland native fish in priority watersheds, and the ecological value of the riparian resources affected.

The proposed road construction and maintenance described in Chapters II and III originate from the above standards. The action alternative would meet this standard.

Effectiveness: High. Existing roads are proposed for maintenance with the Timber Sale Contract, so the likelihood that the projects would be completed is high.

RF-4. Construct new, and improve existing, culverts, bridges, and other stream crossings to accommodate a 100-year flood, including associated bed load and debris, where those improvements would/do pose a substantial risk to riparian conditions. Substantial risk improvements include those that do not meet design and operation maintenance criteria, or that have been shown to be less effective than designed for controlling erosion, or that retard attainment of Riparian Management Objectives, or that do not protect priority watersheds from increased sedimentation. Base priority for upgrading on risks in priority watersheds and the ecological value of the riparian resources affected. Construct and maintain crossings to prevent diversion of streamflow out of the channel and down the road in the event of crossing failure.

The action alternative would meet this standard.

Effectiveness: High. There are no stream crossings for any of the proposed temporary roads.

RF-5. Provide and maintain fish passage at all road crossings of existing and potential fish-bearing streams.

There are no existing or proposed crossings of fish-bearing streams in the project area.

Effectiveness: High. There are currently no crossings that are known fish barriers in the project area.

Fires/Fuels Management (A-11)

FM-1. Design fuel treatment and fire suppression strategies, practices, and actions so as not to prevent attainment of Riparian Management Objectives, and to minimize disturbance of riparian ground cover and vegetation. Strategies should recognize the role of fire in ecosystem function and identify those instances where fire suppression or fuel management actions could perpetuate detrimental conditions, or be damaging to, long-term ecosystem function or inland native fish.

FM-2. Locate incident bases, camps, helibases, staging areas, helispots, and other centers for incident activities outside of Riparian Habitat Conservation Areas. If the only suitable location for such activities is within the Riparian Habitat Conservation Area, an exemption may be granted following a review and recommendation by a resource advisor. The advisor would prescribe the location, use conditions, and rehabilitation requirements, with avoidance of adverse effects to inland native fish a primary goal. Use an interdisciplinary team, including a fishery biologist, to predetermine incident base and helibase locations during presuppression planning.

FM-3. Avoid delivery of chemical retardant, foam, or additives to surface waters. An exception may be warranted in situations where overriding immediate safety imperatives exist, or, following a review and recommendation by a resource advisor and a fishery biologist, when the action agency determines that an escape fire would cause more long-term damage to fish habitats than chemical delivery to surface waters.

FM-4. Design prescribed burn projects and prescriptions to contribute to the attainment of the Riparian Management Objectives.

The proposed prescribed burn projects described in Chapters II and III originate from the above standards. The action alternative would meet this standard

Effectiveness: High. Prescribed burning would not occur within the RHCAs.

FM-5. Immediately establish an emergency team to develop a rehabilitation treatment plan to attain Riparian Management Objectives and avoid adverse effects on inland native fish whenever a wildfire or a prescribed fire burning out of prescription significantly damages Riparian Habitat Conservation Areas.

The proposed fires/fuels management described in Chapter 2, and 3 originate from the above standards. The action alternative would meet this standard.

Effectiveness: Moderate to High. Prescribed fire in the project area is designed to meet these standards.

General Riparian Area Management (A-12)

RA-1. Identify and cooperate with Federal, Tribal, State and local governments to secure instream flows needed to maintain riparian resources, channel conditions, and aquatic habitat. *This project does not adversely affect instream flows.*

RA-2. Trees may be felled in Riparian Habitat Conservation Areas when they pose a safety risk. Keep felled trees on site when needed to meet woody debris objectives.

RA-3. Apply herbicides, pesticides, and other toxicants, and other chemicals in a manner that does not retard or prevent attainment of Riparian Management Objectives and avoids adverse effects on inland native fish.

By following the BMPs listed in the Sandpoint Noxious Weed FEIS, the action alternative would meet this standard.

Effectiveness: High. Standards would be met as required by the Sandpoint Noxious Weed EIS.

RA-4. Prohibit storage of fuels and other toxicants within Riparian Habitat Conservation Areas. Prohibit refueling within Riparian Habitat Conservation Areas unless there are no other alternatives. The Forest Service must approve refueling sites within a Riparian Habitat Conservation Area or Bureau of Land Management and have an approved spill containment plan.

Effectiveness: High. This is a standard BMP that is part of the timber sale contract.

RA-5. Locate water-drafting sites to avoid adverse effects to inland native fish and instream flows, and in a manner that does not retard or prevent attainment of Riparian Management Objectives.

Effectiveness: Moderate. This standard would be applied in the prescribed burn plans associated with the project. However, wildfire suppression is beyond the scope of this project and water drafting associated with such an emergency would be addressed as a separate issue.

Watershed and Habitat Restoration (A-12)

WR-1. Design and implement watershed restoration projects in a manner that promotes the long-term ecological integrity of ecosystems, conserves the genetic integrity of native species, and contributes to attainment of Riparian Management Objectives.

Effectiveness: High. The action alternative would meet this standard.

WR-2. Cooperate with Federal, State, local, and Tribal agencies, and private landowners to develop watershed-based Coordinated Resource Management Plans (CRMPs) or other cooperative agreements to meet Riparian Management Objectives.

Effectiveness: Moderate to High. Cooperation at the multiple levels as listed occurred within the framework for developing the proposed activities of this project.

Fisheries and Wildlife Restoration (A-13)

FW-1. Design and implement fish and wildlife habitat restoration and enhancement actions in a manner that contributes to attainment of the Riparian Management Objectives.

Effectiveness: High. Road maintenance will be implemented in a manner that contributes to attainment of Riparian Management Objectives.

FW-4. Cooperate with Federal, Tribal, and State fish management agencies to identify and eliminate adverse effects on native fish associated with habitat manipulation, fish stocking, fish harvest, and poaching.

Cooperation at the multiple levels as listed occurred within the framework for developing the proposed activities of this project. Using the INFS Standard Widths Defining Interim RHCAs for the project activities, habitat manipulation does not apply. Fish stocking, harvest and/or poaching are all regulated by State management guidelines.

Effectiveness: High. Existing habitat would be preserved under this project.

Forest Plan Guidelines (USDA 1987, pp. II – 29-31)

Fry Emergence (Fish Standard 1 and 2):

On June 2, 2005, the Forest Supervisor for the Idaho Panhandle National Forests signed a decision notice and finding of no significant impact that amended the Forest Plan to modify or remove objectives, standards, and monitoring requirements pertaining to fry emergence success (IPNF, 2005). The amendment was implemented because the fry emergence objectives, standards and monitoring requirements that were in the IPNF Forest Plan did not contribute as well as Inland Native Fish Strategy (INFS) objectives, standards, guidelines, and monitoring direction towards meeting the goals of providing sufficient habitat in support of maintaining diverse and viable populations of fish species across the forest. In addition, because of the limited application of the fry emergence models and their unreliability and the inability to determine fry emergence success in the field due to high variability affected by multiple natural and human-caused factors, the Forest Service was not able to state with any degree of certainty whether measures of fry emergence success were accurate or precise.

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Appendix E – Cumulative Effects Analysis Information

Past, ongoing, and foreseeable activities and events

PAST ACTIVITIES AND EVENTS					
Legal Location (T54N, T53N; R1W)	Drainage	Estimated Acres	Year	Description	Miles of Road Construction or Use
Project area and surrounding sections	North Gold Creek, South Twin Creek, North Twin Creek, Tumbledown Creek, Cedar Creek, Canyon Creek, Brush Creek	Landscape	Mid 1800's	Severe Wildfire Stand-replacing fire destroyed most of the tree cover, as evidenced by the current age, structure, and tree heights of the stands.	N/A
Project area and surrounding sections	North Gold Creek, South Twin Creek, North Twin Creek, Tumbledown Creek, Cedar Creek, Canyon Creek, Brush Creek	Landscape	1894	Severe Wildfire Stand-replacing fire destroyed most of the tree cover, as evidenced by the current age, structure, and tree heights of the stands.	N/A
Project area and surrounding sections	North Gold Creek, South Twin Creek, North Twin Creek, Tumbledown Creek, Cedar Creek, Canyon Creek, Brush Creek	1500	Late 1800's – 1930's	Homesteading, Mining, Salvage Logging, and Road Construction	6

Project area and surrounding sections	North Gold Creek, South Twin Creek, North Twin Creek	Landscape	1910	Severe Wildfire Stand-replacing fire in 1910 destroyed most of the tree cover, as evidenced by the current age, structure, and tree heights of the stands.	N/A
Project Area	North Twin Creek, Tumbledown Creek, Canyon Creek	1500	1919	Severe Wildfire Stand-replacing fire in 1919 destroyed most of the tree cover, as evidenced by the current age, structure, and tree heights of the stands.	N/A
Project area and surrounding sections	North Gold Creek, South Twin Creek, North Twin Creek, Tumbledown Creek, Cedar Creek, Canyon Creek, Brush Creek.	Landscape	1926	Severe Wildfire Stand-replacing fire in 1926 destroyed most of the tree cover, as evidenced by the current age, structure, and tree heights of the stands.	N/A
Project area and surrounding sections	North Gold Creek, South Twin Creek, North Twin Creek, Tumbledown Creek, Cedar Creek, Canyon Creek, Brush Creek	Landscape	1934	Severe Wildfire Stand-replacing fire in 1934 destroyed most of the tree cover, as evidenced by the current age, structure, and tree heights of the stands.	N/A
Project area and surrounding sections	North Gold Creek, South Twin Creek, North Twin Creek, Tumbledown Creek, Cedar Creek, Canyon Creek, Brush Creek.	320	1952	Permanent clearing In the 1950's, a large electrical transmission line was constructed through the analysis area. Powerline Access Road constructed, FSR #278.	10
Project area and surrounding sections	South Twin Creek, North Twin Creek, Tumbledown Creek, Cedar Creek, Canyon Creek, Brush Creek.	20	1964-65	Road Construction Construction of FSR #1050	8

Project Area	North Gold Creek, South Twin Creek, North Twin Creek, Tumbledown Creek, Cedar Creek, Canyon Creek, Brush Creek.	618	1920-1975	Salvage, Permanent Land Clearing, Stand Clearcutting – National Forest Lands Harvest of larger scattered trees on areas covered with good stands of reproduction. Assume tractor yarding.	N/A
Project Area	North Gold Creek, South Twin Creek, North Twin Creek, Tumbledown Creek, Cedar Creek, Canyon Creek, Brush Creek.	10	1985	Road Construction Re route of of FSR # 278 North from Lakeview	3
Project Area	North Gold Creek	73	1986-1987	North Gold Timber Sale Regeneration Harvest	0
Project Area	Cedar Creek/Brush Creek	31	1991-1992	Falls Creek Timber Sale Regeneration Harvest	No new road construction in Project area.
Project Area	Tumbledown Creek /Cedar Creek	342	1993-1995	Barton Hump Timber Sale 131 acres of Regeneration Harvest 211 acres of Selection/Improvement Harvest	3.1 miles of new road
Project Area	Canyon Creek	78	1995-1996	Barton Way Timber Sale Selection/Sanitation Salvage	0

Project Area	North Gold Creek, South Twin Creek, North Twin Creek, Tumbledown Creek, Cedar Creek, Canyon Creek, Brush Creek.	464	1977-1996	Activity without Sale Name 399 Regeneration Harvest 65 Selective Harvest Approximatley 400 acres of timberland in the project area was acquired by the USFS in the late 1970's. Much of this Land had been commercially harvested prior to federal acquisition. Also included in these activity acres are small volume salvage sales that occurred in the project area prior to 1996.	N/A
Project Area	North Gold Creek	75	1998	Thin Gold Timber Sale Selection/Sanitation Salvage	0
Project Area	Cedar Creek/Brush Creek	301	2000	Upper Cedar Timber Sale 124 acres Regeneration Harvest\ 177 acres Selection/Improvement Harvest	2.2 miles of new road
Project Area	North Gold Creek	191	2001-2003	Packsaddle South Timber Sale Regeneration Harvest	0
Project Area	South Twin Creek, North Twin Creek	120	2006	Commercial thinning with Group Selection, Private Lands, leaving 2 mbf/acre. Tractor yarding systems.	0.5 mile
ONGOING ACTIONS (Includes Past Activities)					
Legal Location (T54N, T53N; R1W)	Drainage	Year	Description		Miles of Road Construction or Use
Project area and surrounding sections	North Gold Creek, South Twin Creek, North Twin Creek, Tumbledown Creek, Cedar Creek, Canyon Creek, Brush Creek	Ongoing	Urban Development in Rural Areas – Consists of logging, subdivisions and development of open lands		May or may not include new road development

Project area and surrounding sections	North Gold Creek, South Twin Creek, North Twin Creek, Tumbledown Creek, Cedar Creek, Canyon Creek, Brush Creek North Gold Creek	Ongoing	Hunting – Consists of individuals primarily on foot using existing adjacent roads to access the project area for hunting. Off-road use is limited/minor.	N/A
Project area and surrounding sections	North Gold Creek, South Twin Creek, North Twin Creek, Tumbledown Creek, Cedar Creek, Canyon Creek, Brush Creek	Ongoing	Motor Vehicle Use – Consists of the use of FS road system and private roads within the project area.	Approx. 25 miles of existing road use
Project area and surrounding sections	North Gold Creek, South Twin Creek, North Twin Creek, Tumbledown Creek, Cedar Creek, Canyon Creek, Brush Creek	Ongoing	Firewood Cutting -- Consists of individuals primarily using existing adjacent roads to access the project area for Firewood gathering. Off-road use is limited/minor.	
Project Area	North Gold Creek, South Twin Creek, North Twin Creek, Tumbledown Creek, Cedar Creek, Canyon Creek, Brush Creek	Ongoing	Road Maintenance – Consists of the maintaining of FS and private road system within the project area boundary.	Approx. 25 miles
Project area and surrounding sections	North Gold Creek, South Twin Creek, North Twin Creek, Tumbledown Creek, Cedar Creek, Canyon Creek, Brush Creek	Ongoing	Motorized and Nonmotorized Recreation – Motorized recreation consists of occasional ATV use on nonsystem trails. Nonmotorized recreation consists of local residents hiking/horseback riding within the project area.	N/A
Project area and surrounding sections	North Gold Creek, South Twin Creek, North Twin Creek, Tumbledown Creek, Cedar Creek, Canyon Creek, Brush Creek	Ongoing	Wildfire Suppression – Consists of extinguishing either human or natural fire ignition.	N/A
Project area and surrounding sections	North Gold Creek, South Twin Creek, North Twin Creek, Tumbledown Creek, Cedar Creek, Canyon Creek, Brush Creek	Ongoing	Powerline Right of Way Clearing – Consists of limiting the height of vegetation in BPA and Avista Powerline ROW	N/A
Project area and surrounding sections	North Gold Creek, South Twin Creek, North Twin Creek, Tumbledown Creek, Cedar Creek, Canyon Creek, Brush Creek	Ongoing.	Noxious Weed Treatment Consists of monitoring and treatment of noxious weeds on federal and private lands.	Noxious Weed Treatment Consists of monitoring and treatment of noxious weeds on federal and private

					lands.
REASONABLY FORESEEABLE ACTIONS					
Legal Location (T54N, T53N; R1W)	Drainage	Est. Acres	Year	Description	Miles of Road Constructi on or Use
Project area and surrounding sections	North Gold Creek, South Twin Creek, North Twin Creek, Tumbledown Creek, Cedar Creek, Canyon Creek, Brush Creek	Not Avail.	Ongoing	Certificate of Compliance Fire Hazard Management Agreement* from the Idaho Department of Lands. As of 2/13/07 No permits have been issued or are open.	Various
Project area and surrounding sections	North Gold Creek, South Twin Creek, North Twin Creek, Tumbledown Creek, Cedar Creek, Canyon Creek, Brush Creek	Not Avail.	Ongoing	Noxious Weed Treatment Consists of monitoring and treatment of noxious weeds on federal and private lands.	N/A

*These permits are obtained by the landowner from the Idaho Department of Lands. Issuance of these permits does not mean that all or any will happen in a given time frame.

In *Lands Council v. Powell*, the U.S. Court of Appeals for the 9th Circuit held that, under the circumstances presented in the case, proper cumulative impact analysis required some cataloging of past projects and their effect on the current project area. Furthermore, such cataloging should provide sufficient detail to allow for analysis of the differences between prior projects and proposed projects, which could provide the information necessary to consider alternatives that might have less impact on the environment.

Within this Environmental Assessment (EA), we have provided information concerning relevant past, present and reasonably foreseeable projects and activities that have occurred, are occurring, or are proposed to occur within each of the resource cumulative effects areas examined in this analysis. Additionally, an adequately detailed discussion of the effects of these past, ongoing, and reasonably foreseeable activities has been provided in Chapter 3 to promote an informed assessment of environmental considerations.

The Council on Environmental Quality (CEQ), whose responsibility it is to coordinate federal environmental efforts and work closely with agencies and other White House offices in the development of environmental policies and initiatives, has provided guidance to federal agencies on the consideration of past actions in cumulative effects analysis (CEQ 2005)¹. CEQ stated that “generally, agencies can conduct an adequate cumulative effects analysis by focusing on the current aggregate effects of past actions without delving into the historic details of individual past actions” (CEQ 2005 p. 2). Cumulative impact is defined in CEQ’s NEPA regulations as the “impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions...” (40 CFR 1508.7). CEQ has interpreted this regulation as referring only to the cumulative impact of the direct and indirect effects of the proposed action and its alternatives when added to the aggregate effects of past, present, and reasonably foreseeable future actions (CEQ 2005 p. 2).

During the preparation of the EA, the Forest Service determined what information regarding past actions was useful and relevant to the analysis of cumulative effects. While CEQ found that cataloging past actions and specific information about the direct and indirect effects of a past project’s design and implementation could in some contexts be useful to predict the cumulative effects of the proposal, the regulations do not require the Forest Service to catalog or exhaustively list and analyze all individual past actions (CEQ 2005 p. 3).

This EA has provided a description of known past activities and their effects; however, due to the marked difference between past and current land management practices and policies, this analysis did not further aid in assessing whether one form or another of the proposed activities would assist in meeting the project’s purpose and need for action with minimal environmental harm. The evolution that has occurred in land management practices is the result of science and our ongoing monitoring actions. The following discussion explains how past forest management activities have changed over time.

On the forest, early to mid 20th century road construction activities focused construction mainly through river valleys, riparian areas, floodplains, and adjacent hillsides. The roads efficiently provided access but decreased the land’s effectiveness as wildlife habitat and constricted stream channels, while providing a new avenue for erosion and discharge of sediment into streams. Roads on national forest lands often were simply an expansion of existing trails and paths that provided access so that they would accommodate newer equipment and current land uses. In

¹ CEQ Memorandum to the Heads of Federal Agencies regarding Guidance on the Consideration of Past Actions in Cumulative Effects Analysis, June 24, 2005.

some situations, roads were developed on abandoned railroad beds. In both cases, the location and design were predetermined from the previous use and era. As time progressed, roads were “designed” and located to achieve their primary purpose, which was to provide access and haul product at a minimal cost. In the decades following World War II (1950s – ‘70s), the road network was rapidly expanded to support the domestic need for lumber in housing construction. Over the last twenty years, both road design and location have evolved as necessary tools to not only provide efficient access; but also to protect the valuable watershed resources they encroached upon. Forest Service Best Management Practices (BMPs) (FSH 2509.22 Soil and Water Conservation Practices Handbook) currently incorporated into road construction/reconstruction activities on the forest include:

- Road surfacing (gravel, etc...) was incorporated to not only provide better trafficability; but also to prevent and control erosion from the road surface.
- Road drainage controls are now being incorporated into designs that:
 - Reduce the erosive flows in ditches by providing frequent cross-drains to relieve ditch flows;
 - Avoid water movement down the road by dispersing the drainage quickly by crowning or outsloping the road surface;
 - Stabilize ditches by lining; and
 - Disperse drainage water (that often carries sediment) onto stable forested slopes before ditches discharge into waterways.
 - Allow new and existing stream crossings to safely pass extreme events (i.e. 100 year flood event).
- Special construction techniques and designs have been utilized (i.e., full- or partial-benching of roads) to avoid unstable side casting of waste materials; windrowing clearing slash to prevent sediment delivery to streams from construction activities themselves as well as from erosion of road fills and treads that are not yet protected with erosion control vegetation.
- Some roads now are designed to take advantage of the non-uniformities of the slopes they cross by “rolling grades” and grade breaks to prevent the potential for accumulations of water or excessive ditchflows that have destabilized the road bed or cause surface erosion in the past.
- Designers and planners develop road networks that avoid highly erosive or unstable slopes utilizing the *land system inventory*, hydrologists, soil scientists, and geotechnical engineers.
- Road crossings are being located at more stable sites and crossing designs are now considering water quality and fish passage as primary design criteria, rather than criteria that just account for costs and traffic efficiency.
- Roads are being located well away from streams and their riparian areas where ever practicable; and the number of crossing sites is being minimized. These features are in stark contrast to past road locations that sometimes resulted in chronic sources of sediments, extended exposure of streams to direct sunlight resulting in temperature elevations, and nearly permanent reductions of the replacement sources of the structural components of streams and aquatic cover, riparian deadfall.
- In the past, when a road’s utility ended, the road was simply abandoned. These abandoned roads have been a substantial water quality and slope stability issue as they have deteriorated, especially without any maintenance. Current practice is to restore key abandoned or no longer useful roads to a “hydrologically neutral” condition where its remnants are self-maintaining and are no longer disturbing slope stability or the

movement of slope water, either on or below the soil surface or the natural functions and adjustments of streams, wetlands, and other water bodies.

Impacts to forest water and soil resources from logging practices and road activities have also been reduced over the past 20 years with the introduction of Best Management Practices (BMPs) and Inland Native Fish Strategy (INFS) management direction. Based on research studies, current BMPs and INFS Riparian Habitat Conservation Areas (RHCAs) can reduce sediment yields compared with historical practices (Quigley and Arbelbide 1997a, USDA Forest Service 1995).

In 1972, Section 208 of the Clean Water Act Amendments established the regulatory framework for non-point source pollution control through use of BMPs. BMPs are defined in Idaho as a practice or combination of practices determined to be the most effective and practicable means of preventing or reducing the amount of pollution generated by non-point sources (IDAPA 20.02.01). BMP monitoring is annually conducted by the forest to validate the implementation and effectiveness of BMPs associated with land management activities. Monitoring results are used to adapt future management actions where improvements in meeting water quality objectives are indicated. Forest monitoring of BMPs indicates that in most cases they continue to function as expected and are meeting their intent (USDA Forest Service 2002b, 2003, 2004). At the time the IPNF Forest Plan was written (1987), the emphasis was on developing a commodity production strategy while minimizing impacts to watersheds and aquatic resources, including fish. The strategy for watershed management was constructed in the forest plan as a “maintenance” objective. In some situations, thresholds, or “minimum impact” standards defined the criteria for maintenance. To ensure that watersheds and aquatic resources were maintained during forest management activities, BMPs were applied. Despite the existing forest plan standards and BMPs, the condition of fish habitat on the forest was declining, primarily due to timber harvest and road building activities (USDA Forest Service 1992).

In 1995, the forest plan was amended to include INFS management direction (USDA Forest Service 1995). The implementation of INFS gave greater protection to aquatic resources, especially riparian-dependent systems. The management direction provided by the INFS amendment is designed to protect and maintain the structure and function of riparian and aquatic systems. INFS contains goals for healthy, functioning watersheds, riparian areas, and associated fish habitats; Riparian Management Objectives (RMOs), and performance-based standards and guidelines for land management activities (i.e., timber, roads, grazing, recreation, minerals, fire/fuels, lands, riparian area management, watershed restoration, fisheries and wildlife restoration). Instead of allowing some “acceptable” level of effects on riparian and aquatic systems, INFS aims to protect aquatic resources from detrimental effects. INFS gives riparian-dependent resources priority over other resources in the Riparian Habitat Conservation Areas (RHCAs), so that while RHCAs are not “lock out” zones, activities that occur in them must either benefit riparian and aquatic resources or at least “not slow the rate of recovery below the near natural rate of recovery if no additional human caused disturbance was placed on the system” (USDA Forest Service 1995). Incorporation of the INFS management direction into the forest plan has led to improvement in the condition of aquatic resources by offering greater protections to the critical riparian areas. In addition, INFS allows for and encourages watershed restoration. Restoration has occurred over the years across the IPNF. Over 1,300 miles of roads have been decommissioned on the IPNF from 1991-2003 (USDA Forest Service 2003).

Harvest methods and removal of timber products from the national forest has changed substantially over time. Early harvest methods (1950s, '60s, and '70s) focused primarily on financial objectives of providing low cost wood products. Harvest placement often occurred in

the highest volume, easily accessible stands. Timber harvest often occurred within riparian areas and adjacent to streams. Most of the harvest prescriptions were primarily designed to produce healthy young stands with shorter rotation ages.

Modern timber harvest prescriptions and design emphasizes desired conditions of the forest after the harvest. This usually results in the retention of various amounts of trees in a post-harvest stand, addressing objectives that may include wildlife habitat, watershed conditions, hazardous fuels, visual quality, soil productivity, forest health and others. On sites determined suitable for timber production, timber harvest may also produce timber products on a regulated basis while compatible with these other resource objectives and values. Some examples where timber production and resource objectives can be achieved simultaneously are:

- Reducing tree densities to decrease bark beetle hazard, thereby prolonging the development of the forest and maintaining tree cover
- Managing tree canopies to limit fire spread from the forest floor to the tree crowns
- Developing flammulated owl habitat in ponderosa pine forest through removal of smaller stems crowding larger trees, thereby providing more room to grow for the remaining trees, and open stand conditions favored by the owl
- Designing harvest patterns across the landscape to facilitate wildlife movement, such as providing corridors and preserving travel routes for ungulates. Also, using harvest prescriptions and landscape patterns as part of a wildfire hazard reduction strategy
- Increasing the amount of native western white pine, western larch and ponderosa pine, which generally are insect and disease resistant and are long-lived, as well as increasing western red cedar in valley bottoms, where it historically was more abundant than today
- Using variable retention harvests to meet visual management objectives

Other elements of modern harvest prescriptions that address specific resource objectives include retention of snags for cavity nesters, retention of down wood for soil nutrition and wildlife habitat, maintaining sediment-filtering vegetation near riparian areas, and maintaining vegetation diversity through hardwood retention and protection of rare plants.

Increased environmental awareness has also led to improvements in logging systems that we use to remove trees from the forest. Early harvests emphasized cheap, labor intensive logging methods, such as railroad, horse, short distance jammer systems, and tractor logging. Logging systems were selected primarily by the least expensive method to transport the trees from the forest to the mill. This sometimes involved harvesting on steep slopes, creating excessive soil disturbance and increasing the risk of erosion. Streams were sometimes used as a method to transport logs from the harvest site, causing impacts to the aquatic system and adjacent riparian habitat. Road systems were sometimes dense (ten miles/square mile) to facilitate rapid and inexpensive removals, in some cases compromising water quality.

Today's logging systems recognize and reduce the threat of environment harm in a number of ways. Tractor logging generally occurs on slopes 35 percent or less, and is limited to designated locations, reducing soil impacts. Skyline and other cable yarding systems are used on steeper slopes, which greatly reduces the amount of soil disturbance. Increasingly, helicopter logging is used, which extends yarding distances and thereby reduces road densities. A suite of best management practices and forest plan standards and guidelines aids in the development of the least impactful design possible. Monitoring during and after the sale is completed provides a valuable feedback loop that quickly identifies and corrects variances should they occur.

The forest ceased regeneration harvest of allocated old growth stands a number of years ago. Presently, our focus is on maintaining the old growth stands that we have and allocating additional stands for future old growth as they mature. On drier sites, restoration of old growth may include various mixes of prescribed fire, and thinning to restore historic more open old growth stand structures and reduce risk of stand replacing fire. Planting of shade-intolerant, fire-adapted species may also be done if these are in short supply. On these dry sites, our objective is to restore and sustain the old growth by retaining the large old trees, preserving the old growth characteristics, and restoring historic old growth structures and processes (USDA Forest Service 2003, USDA Forest Service 2004, Quigley and Arbelbide 1997).

For the above stated reasons, changes in road construction/reconstruction and maintenance practices; implementation of INFS management direction and watershed BMPs; and changes in harvest practices and objectives, an individual analysis of past projects cannot be clearly compared to analysis of the proposed actions.

However, for most resources analyzed, the effects of past actions are accounted for in the discussion of the existing condition. Additionally, the effects of past actions that are similar to activities proposed are discussed when they would be useful in describing the possible effects of the proposed action.

Tumbledown Hazardous Fuels Reduction Project Environmental Assessment

Appendix F - Forest Plan Standards for Old Growth and Old Growth Review

10a. A definition for old growth is being developed by a Regional task Force and will be used by the forest when completed. As an interim guideline, stands classified as old growth should meet the definition given by Thomas (1979).

Allocation of old growth within the Tumbledown project area is based on current and widely accepted science and follows current old growth definitions from the Forest Plan (page II-29), the Regional Task Force Report including “Old Growth forest Types of the Northern Region” (Green, and others. 1992 (errata corrected 2/05) and Forest Supervisor letters of direction for implementing Forest Plan old growth standards. This standard would be fully met under all alternatives.

10b. Maintain at least 10 percent of the forested portion of the IPNF as old growth.

The Forest Plan identified 2,310,000 forested acres on the IPNF. Therefore, the Forest Plan standard requires maintaining 231,000 acres of old growth. The most recent Forest Plan Monitoring Report (2008) indicates that based on Forest Inventory and Analysis (FIA) data, the estimated percent of old growth on the forested lands of the IPNF is 12.85% . We have identified and allocated 278,552 acres of forest stands (12.1% of IPNF forested acres) to be retained as old growth. Therefore, standard 10b has been met. Detailed information confirming the IPNF’s standing relative to this standard is contained in the project file (Zack 2006).

Sandpoint Ranger District’s old growth allocation - The IPNF old growth allocation of 10% old growth was distributed among the districts as documented in the Forest Supervisor’s May 7, 1991 letter concerning the subject “Forest Plan Explanation: Implementing Old Growth Standards (project file). The Sandpoint Ranger District was responsible for allocating 21,500 acres of old growth. The 2005 and 2006 Forest Plan Monitoring Report indicates that 24,591 acres have actually been allocated in the Pend Oreille River Subbasin (USDA Forest Service 2008). Therefore, the Forest Supervisor’s allocation was exceeded in the District. Detailed information District’s standing relative to this standard is contained in the project file (Zack 2006).

10c. Select and maintain at least five percent of the forested portion of those old growth units that have five percent or more of existing old growth.

The project area falls within two old growth management units, OGMUs 15 and 16. OGMUs 15 and 16 have 4.9% and 5.6% allocated old growth respectively, all of which is outside the project area. While several stands in the project area have a component of large, old trees, there are no unallocated stands in the project area that meet minimum old

growth criteria (based upon field reviews by the District Wildlife Biologist and Silviculturist completed in July 2005 located in the Vegetation section of the project file).

10d. Existing old growth stands may be harvested when there is more than 5% in an old growth unit and the Forest Total is more than 10%.

Harvest of allocated old growth was **not** proposed for any of the alternatives.

Table 1. Current old growth allocations within Project Area Old Growth Management Units (OGMU)

OGMU (Unit #)	Total Acres Of OGMU	Allocated Old growth (OG)		Acres of Project Area per OGMU	Acres of OG in Project Area
		Acres	Percentage of OGMU	Acres	Acres
15	13,560	660	4.9	961	0
16	14,378	812	5.6	4613	0
Total	27,938	1472	5.2	5574	0

10e. Old growth stand should reflect approximately the same habitat type series distribution as found on the IPNF.

The habitat type series distribution of the allocated old growth on the IPNF reflects approximately the same habitat type series distribution on the IPNF. The 2005 and 2006 Forest Plan Monitoring report supports this finding (USDA Forest Service 2008). Old growth standard 10e would be met. Additional information IPNF's standing relative to this standard is contained in the project file (Zack 2006).

10f. One or more old growth stands per old growth unit should be 300 acres or larger. Preferences should be given to a contiguous stand; however the stand may be subdivided into stands of 100 acres or larger if the stands are within one mile. The remaining old growth management stands should be at least 25 acres in size. Preferred size is 80 plus acres.

No harvest of allocated old growth is proposed in the Tumbledown project area; therefore, the size of allocated old growth stands within the OGMU would not be reduced by the alternatives.

10g. Roads should be planned to avoid old growth management stands to maintain unit size criteria.

No road construction is proposed in or adjacent to allocated old growth stands.

10h. A long-term objective should be to minimize or exclude domestic grazing within old growth stands.

Activities proposed do not include domestic grazing allotments. There are currently no grazing allotments in the project area.

10i. Goals for lands to be managed as old growth within those lands suitable for timber production are identified in the management area prescriptions.

The 2005 and 2006 Forest Plan Monitoring Report (USDA Forest Service 2008) includes a table showing the Forest Plan management areas that have acre goals associated with them for old growth allocation. The table also shows the existing amounts of allocated old growth for those same areas. Current old growth allocations meet and far exceed those Forest Plan goals. Therefore, old growth standard 10i has been met.

**A review of Stand Data (TSMRS) including an
Old Growth Review for Tumbledown Fuel Reduction Project**

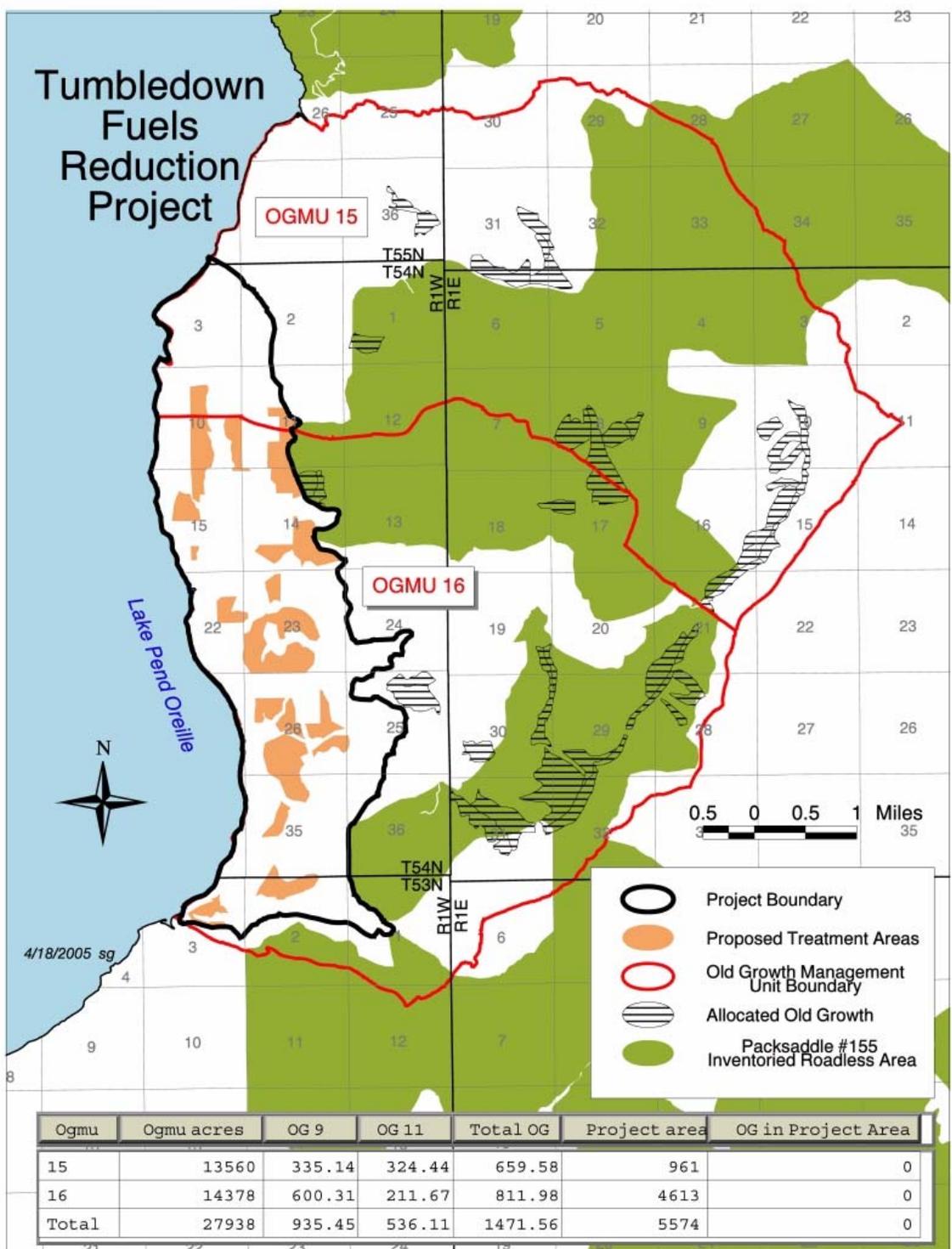
In recognition of the dynamic nature of disturbances and growth affecting all vegetation including Old Growth and to assure that the old growth inventory completed on the Sandpoint Ranger District in 1993 was correct for the Tumbledown analysis area, a review of all stands was done to verify or correct stand data. These stands were visited using photo and walk through reviews by Sandpoint District personnel (vegetation project file). Prior to analysis for vegetation, wildlife, and watershed the vegetation data was adjusted, if needed, to reflect any significant changes which may have occurred from the time of the original stand examinations to the present day. Data used for analysis can be viewed in the Tumbledown Stand Units spreadsheets in this project file.

Old Growth Review:

An inventory of old growth was completed on the Sandpoint Ranger District in 1993 as directed by then Forest Supervisory Bill Morden in a letter to Suzanne Hempleman President, Spokane Audubon on March 27, 1990. Sandpoint Ranger District worked with the Audubon Society, represented by Liz Sedler, in delineation and selection of the old growth stands.

As noted in the Draft 2004 Forest Plan Monitoring Report under Old Growth, "The IPNF has approximately 6,500 individual old growth stands distributed across 2.5 million acres of National Forest. It is not practical to visit every old growth stand every year. Because natural changes are going on continually (this includes both disturbances that remove old growth, and other stands maturing into old growth), information about some allocated stands may be outdated at any given time. However, to ensure that all management actions are designed based upon current old growth conditions, we take a closer look at old growth allocations within a project area whenever any management activity is being considered that could possibly impact old growth. And to ensure that

we're meeting Forest Plan old growth standards forest-wide, we use FIA estimates to monitor the amount of old growth across the forest and at other large scales."



In our reviews of the Tumbledown analysis area, no stands were found to meet Old Growth Definitions. Most stands are immature. Stands designated as mature will retain the large relic component, while removing the understory and younger codominant vegetation.

Within the Tumbledown analysis area stands or portions of stands that are proposed for regeneration cutting are not expected to trend toward old growth structures due to mortality presently occurring or expected to occur. Some stands prescribed for thinning have the potential for trending toward large diameter long-lived seral trees. These stands have the possibility of reaching old growth structure in the future. In addition, other stands with long lived species (example: cedar in riparian areas), which are not proposed for cutting, may reach old growth structures if disturbance does not trend them back toward early succession.

A review of designated old growth within Old Growth Management Units (OGMU) #15 and #16 indicates that stands designated as Old Growth within this OGMU currently meet Old Growth Definitions. None of these stands are within the Tumbledown Project area

References Cited

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USDA Forest Service. 2008. 2005 and 2006 Forest Plan Monitoring and Evaluation Report. Idaho Panhandle National Forests, Northern Region.

Zack, Arthur C. 2006. Review of Old Growth Assessments for the Idaho Panhandle National Forests. US Forest Service. Idaho Panhandle National Forest. Coeur d'Alene, ID

Bonner County, Idaho

County Wildfire Protection
Plan (CWPP)

Revised 2007

**Bonner County Wildfire Protection Plan
(CWPP)
Certification and Agreement**

The County Wildfire Protection Plan developed and amended for/by Bonner County:

- Was collaboratively developed. Interested parties, fire departments and state and federal land management agencies with jurisdictions in Bonner County have been consulted.
- This plan identifies and prioritizes areas for hazardous fuel treatment and recommends types and methods of treatment that will protect Bonner County.
- This plan addresses public awareness and education regarding the reduction of the ignitibility of structures throughout the County.
- This plan developed in accordance with Public Law 106-390, Disaster Mitigation Act of 2000 contains all the required elements, and serves the same purpose as a Community Wildfire Protection Plan. (As described under Public Law 1087-148, Healthy Forest Restoration Act.)

The following entities attest that the standards listed above have been met and mutually agree with the contents of this County Wildfire Protection Plan.

Lewis Rich, Chair Bonner County Board of Commissioners	Date
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Bob Howard, Dept. of Emergency Management/LEPC	Date
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Edward Robinson Idaho Department of Lands	Date
--	------

ACKNOWLEDGEMENTS

This is the first of many anticipated revisions to this living document. After three years of operation, the plan is being revised to incorporate changes derived from the mitigation that has been accomplished and to reflect the actual focus of the work on the ground. Many people have contributed to the revision of this Plan and their participation is gratefully acknowledged.

Bonner County CWPP Steering Committee

Bob Hatfield, Chairman
Mike Tucker, County Fire Chief's Representative
Bob Howard, Bonner County Department of Emergency Management
Chris Remsen, Idaho Department of Lands
Dave Lux, Forest Service
Kurt Pavlat, Bureau of Land Management
Art Bews, Public Member
Janis Goonan, Administrative Assistant to Committee

Project Manager

Larry Isenberg, Synergistic Solutions, Inc.

Fire Chiefs

John De Bernardi, Spirit Lake Fire District
Les Kokanos, West Pend Oreille Fire District
Paul Madden, Hope/East Hope Fire
Brad Mitton, Northside Fire District
Spencer Newton, Schweitzer Fire District
Rob Goodyear, Sagle Fire District
Tim Ventress, Coolin-Cavanaugh Bay FPD
George Cordingly, Clark Fork Fire District
Mike Tucker, Westside Fire District
Robert Tyler, Sandpoint Fire Department
Tim Ventress, West Priest Lake Fire District
Bob Wathen, Sam Owen Fire District
Dean Fiedler, North of the Narrows Fire District

Idaho Department of Lands
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Dave Lux, Sandpoint RD
Matt Butler, Priest Lake RD
Gary Weber, Priest Lake RD
Angelic Koch, Sandpoint RD

Bureau of Land Management

Kurt Pavlat
Brad Wagner

INTRODUCTION

This annual update references the original plan completed in 2004 which was authored by Inland Forest Management, Inc. BONFIRE has become a viable wildfire mitigation program in Bonner County, Idaho, as evidenced by 3 years of successful hazardous fuels treatment projects which have increased the safety of area residents through completion of 341 projects that treated 456 acres and provided protection to 745 structures throughout the county.

In 2006, Bonner County contracted Larry Isenberg of Synergistic Solutions, as Project Manager. Under Larry's very capable guidance, BONFIRE has moved forward smoothly and has increased efficiency in work on the ground.

Throughout the last three years BONFIRE has given increased emphasis to the creation of shaded fuel breaks as a means of protecting large tracts of developed areas; although the primary tool of the program remains the creation of defensible space around homes and other structures.

A prime example of the effectiveness of a shaded fuel break is the demonstration project developed along the access road to Schweitzer Mountain. This is a single access road that serves many millions of dollars in residential and commercial development associated with Schweitzer Mountain Ski Resort. Participants in the project include BONFIRE, Schweitzer Mountain Development, Schweitzer Fire Department, the City of Sandpoint, BLM, IDL, and US Forest Service. The demonstration project extends for ¼ mile along both sides of the access road and treats fuels in a band 100 feet below the road and 50 feet above the road.

In addition to the Schweitzer work BONFire has concentrated extensively on two other areas in the county which are described as follows:

- Valuable work was completed this year on Gold Hill including the Rocky Road Subdivision. Fuels were treated adjacent to roadways in the development and on private property to reduce the fire hazard throughout the subdivision.
- BONFire also accomplished a significant amount of work around homes in the Hwy 57-Nordman corridor.

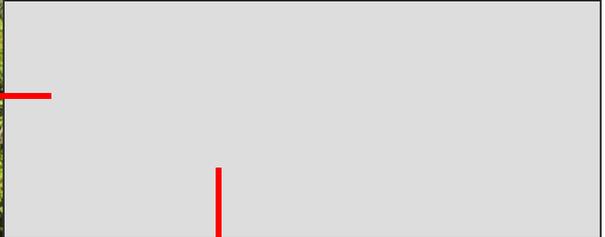
For a complete list of projects on federal and public land, please see Appendix H. BONFIRE continues to work with the US Forest Service to develop projects in the Priest Lake area. These include Lakeview-Reeder Fuels Reduction Project, Outlet to High Bridge FRP, and Hwy 57 Safety Project. Bonfire is also involved with the US Forest Service on a project at South Grouse which included collaborative attendance at the initial public meeting in Sagle. The program is participating on projects in the vicinity of Elmira in northern Bonner County with the Bureau of Land Management.

The BONFire Steering Committee has determined that continued funding of the program at the highest possible levels is vital to provide protection for the lives of residents and fire fighters, and to preserve property, natural resources and economic viability in the County. The development and monitoring of proper maintenance practices for defensible space and shaded fuel breaks, and the implementation of an aggressive public awareness/education program are key elements in continuing the success BONFire has achieved. The future of the **BONFIRE** program looks bright and full of challenges. We have a strong, diverse working group which will continue to address the issues of protecting life, increasing fire fighter safety and preserving the resources that make Bonner County and north Idaho special.

PROJECT MANAGERS REPORT

Forest fires are a part of nature-past, present, and future-in Bonner County. Their occurrence is not a matter of if but when. Therefore, homeowners living in the interface between the forest and urban areas must expect to be impacted by wildfire. These homeowners can choose to be proactive before the arrival of the fire or passively accept whatever the fire does to their families and cherished possessions. BONFIRE is dedicated to communicating and accomplishing these proactive actions and programs for the homeowners. The Before and After pictures below show some of these proactive steps, which result in both a safe and pleasing park like situation. We are all in this together and in the case of wildfire, every chain is only as strong as its weakest link.





We have made a great start in Bonner County, but there is much left to do. With the rapid influx of new people who love to live in the Wildland Urban Interface area the “left to do list” is undoubtedly greater than our “done list”. This common sense program depends on both educating the public and continuing funding. It is with great pleasure that Synergistic Solutions, Inc. is associated with BONFIRE.

Future goals as the Project Manager are as follow:

- Provide as much assistance as funding allows for the creation of defensible space throughout the county.
- Continue our education efforts throughout the county.
- Explore and adopt greater efficiencies for both of the above items.

Larry Isenberg, Synergistic Solutions, Inc.
 BONFire Project Manager

POPULATION UPDATE

Table 1, on page 2 in the original Plan lists the population of Bonner County since 1960. The table is to be updated by listing the population for 2005 (the most recent year available) at 40,908. This new data is from the US Census Bureau Annual Estimates of the Population for Counties of Idaho, April 1, 2000 to July 1, 2005 (CO-EST2005-01-16).

WEATHER UPDATE

A review of Table 2, page 3 in the original Plan, shows that the record low temperatures for February and March are reversed. The record low for February should be -35 degrees F (1933) and the record low for March should be -10 degrees F (1955). No other changes are required to this table.

FIRE HISTORY UPDATE

The most significant fire in Bonner County since the Original Plan was the Plowboy Fire last year that burned 1234 acres. That fire combined with the Hughes Fire (in Boundary County) burned the most acreage in the Priest Lake Ranger District since 1939. This gives emphasis to the fact that fires are getting larger and more complex. Additional fires burn each year and those totals have been updated as follows:

Table 3

Cumulative Number of Wildfires by Cause and Acreage for Bonner County

	Human Caused	Lightning Caused	Total
Number of Fires	1138	1108	2246
Number of Acres	6685	7208	13893

Information was contributed by IDL and USFS.

WILDLAND FIRE RISK ASSESSMENT

Input from local fire districts, on-site home assessments and field evaluations were used to assess the overall risk of wildfire in Bonner County. Fire district personnel identified areas they determined to be of high priority in need of hazardous fuels treatment work. The BONFIRE steering committee chairman contacted local Fire Chiefs to get updated information regarding their concerns relative to interface fire issues and preparedness. Issues and concerns of the chiefs are included in the following risk assessment.

HIGH RISK AREAS IDENTIFIED BY FIRE DISTRICTS

The fire districts were asked by BONFIRE to update the risk of wildfire in their districts and identify areas at high risk. Housing density, access, topography and surrounding vegetation, available water supply, and communications issues were used by the fire districts to determine which locales in the county are at the highest risk from wildfire.

As a consequence, the following areas in the county were established as high risk by the district Fire Chiefs. The areas identified are:

A) An area which includes portions of the Westside Fire District, Northside Fire District and the City of Sandpoint has been identified as high risk. The area is approximately 2000 acres and bounded by Baldy Road on the south, Selle Road on the north and lies west of the BNSF railroad tracks. Using estimates for population density (300 people/sq.mi.) and the number of people per housing unit (2.49 people/housing unit) found in the 2000 census data, it is estimated there are 900 people and 361 homes within the area described.

Although specific locations will vary, this same procedure was used to provide an indication of population and number of homes for the rest of the areas described below.

B) An area of approximately 3000 acres of wildland urban interface in West Oden Bay and Sunnyside Area is considered to be at high risk by the Northside Fire District. There are approximately 500 people and 200 homes at risk to wildfire in this area.

C) Nineteen hundred twenty (1920) acres at lower Riser Creek and nearby Sam Owen Peninsula were rated as high risk. Recent fuel treatment at the Sam Owen Peninsula in the vicinity of Beyond Hope Resort has reduced the fire risk in the immediate vicinity of approximately 8 homes. There are still approximately 300 people and 120 homes at risk to wildfire in this area.

D) In the City of Sandpoint two areas were identified as high risk by the Sandpoint

City Fire Department. One area is along Sand Creek and the other adjacent to Chuck Slough. The combined areas encompass about 640 acres. There are approximately 300 people and 120 homes at risk to wildfire in this area.

E) The Spirit Lake Fire District identified the Wild Meadows and Stoneridge as high risk areas. The total area is approximately 2500 acres. There are approximately 1500 people and 600 homes at risk to wildfire in this area.

F) Schweitzer Mountain. Rd., sole source for ingress and egress from the Schweitzer community was identified as a high priority. The highest hazard area encompasses about 320 acres and threatens the City of Sandpoint's watershed. The priority area begins at a ridge from Granite Ridge at the bottom of the mountain up to the south bowl antenna site of Schweitzer Mountain. Providing secondary egress off the west side of Schweitzer Mountain is also a concern that is currently roughed in by logging roads and could easily be modified for emergency egress. There are over 2000 people, 800 homes at risk to wildfire in this mid-slope, thermal band area.

H) The West Settlement Road area near Priest River was identified as a high risk area by the West Pend Oreille Fire District. Approximately 640 acres are included in this area. There are approximately 150 people and 80 homes at risk to wildfire in this area.

I) The Hoodoo Loop area in western Bonner County has also been identified as being at high risk and covers about 2500 acres. There are approximately 150 people and 50 homes at risk to wildfire in this area.

J) An area of 640 acres around the communities of Coolin and Cavanaugh Bay are also rated at high risk. There are approximately 200 people and 80 homes at risk to wildfire in this area.

K) The area on Vay Road, Estate Loop Housing, with only one egress exit, and Hoodoo Mountain area. These areas total approximately 3200 acres and include 250 people and 100 homes.

L) The areas of Rena Road and Womack Road in southwestern Bonner County have been identified as high risk areas by West Pend Oreille Fire District. This area comprises 320 acres, 150 people and 60 homes.

M) The new development areas above Hope and East Hope are high risk. Steep terrain and the proximity of the development to dense fuels in the adjacent forest lands are factors in determining the high risks.

N) North of the Narrows fire district has identified the areas of Ridgeview Terrace and Ridgeview Lane as high risk. This area includes approximately 300 acres and 11 homes.

O) Sagle Fire District has identified all aspects of Gold Mountain, especially the south aspect from Sagle Road to the top, the area west of Cocollala Lake (south and east aspects), and the area around Garfield Bay (east, south and west aspects) as high priority.

P) West Priest Lake Fire District has identified West Lakeshore Road from the Outlet to Luby Bay (narrow) and Neopit Road access to cabin areas (steep and narrow) as high priority areas.

Q) The areas around Nordman, Kalispell Creek Road, the Reeder Bay resort areas and the Kalispell Bay resort areas have been all been identified as high priority areas due to housing density, limited water supply, fuel density, and limited access.

R) Quail Ridge Homes near Blanchard has a single access to the development on 1200 acres with 112 homes and 300 people.

The common problems of numerous structures, high fuel loading, steep narrow access roads, and inadequate water supply systems contribute to the high priority rating.

HIGH RISK AREAS OUTSIDE OF FIRE DISTRICTS

The portion of Bonner County not covered by some form of Fire Protection District presents a unique set of high risk factors. Principally, these areas have longer response times and many have fewer water supplies available. The following areas have been identified:

S) Gleason-McAbee area between West Pend Oreille Fire District coverage and West Priest Lake coverage. This is an area of many homes, narrow access roads and high fuel loadings.

T) The Upper Pack River area beyond Northside Fire District coverage. This is another area of long response times, a large number of homes and no developed water supplies.

U) Lakeview community and the portion of the county on the east side of Lake Pend Oreille are not covered by any fire protection district and are not immediately accessible by fire equipment.

V) The Clark Fork Valley to the Montana state line excluding the communities of Clark Fork, Hope, East Hope and Sam Owen. The area is characterized by a south facing slope, limited access and water supply.

W) Upper Grouse Mountain and Lightning Creek beyond the coverage of Northside Fire District is steep and accessed by narrow roads.

X) Upper Baldy Mountain beyond Westside Fire District has limited access which makes long response times. The area has very limited water supply.

FIRE DISTRICT RESOURCES

There are 12 fire districts and two (2) City Fire Departments in Bonner County with varying degrees of capability. The fire districts are primarily structure protection oriented and will fight wildfires when homes are threatened. The majority of the fire fighters in the fire districts are volunteers. Following is a list of equipment, personnel, and facilities for each of the fire districts/departments in Bonner County. The size of each district is also included. Each district has updated this information for 2007.

Coolin-Cavanaugh Bay Fire District

The district covers 6,187 acres and has one fire station located in Coolin.

Fire apparatus includes:

Two Type 2 Engines

One Type 6 Engine (CAFS)

Personnel:

The district has five volunteer fire fighters

Plans for the future include the construction of a new fire station in Cavanaugh Bay.

North of the Narrows Fire District

The district covers 2,270 acres and has one fire station.

Fire apparatus includes:

One Type 2 engine

One Type 5 engine

One Type 6 engine

One Fire Boat (350 gpm, 100 ft. 2½" hose, and 700 ft. 1½" hose)

Personnel:

The district has 10 year round and 16 seasonal volunteers.

Plans for the future include the expansion of the existing fire station or the addition of a second station in a more central location.

Northside Fire District

The district covers 71,313 acres and has four fire stations located. The stations are located in Ponderay, north of Ponderay on state highway 95, on Lightning Creek Road and on Samuels Road.

Fire apparatus includes:

Five Type 2 Engines

Three Type 6 engines

One 1700 gallon Water Tender
One 1500 gallon Water Tender
One 1000 gallon Water Tender

Personnel:

Two paid and twenty-five volunteer fire fighters.
There are no plans to expand facilities or district boundaries at this time.

Sagle Fire District

The district has four fire stations. The stations are located in Sagle, Cocollala, Careywood, and Bottle Bay. The district covers 104,400 acres.

Fire apparatus includes:

Three Type 2 Engines
One Type 6 Engine
Two Type 1 Water Tender
One Type 2 Water Tender

Personnel:

Nine full time, 24 volunteers and one chief
Plans for expansion: The District will be building a 5th station in the Seneacquoteen area in 2007.

Schweitzer Fire District

The district covers 203 acres and has one fire station located at 7094 Schweitzer Mountain Road.

Fire apparatus includes:

Two Type 1 Engines
One Aerial w/ 1500 gpm pump
One Type 6 Engine

Personnel:

One paid and fourteen volunteer fire fighters.
Additional subdivisions are in the works or planned which border the district. The new subdivisions will need to be annexed into the district sometime in the future. Additional fire substations will be necessary to provide adequate fire protection for the subdivisions.

Spirit Lake Fire District

Although located in Kootenai County, Spirit Lake provides fire protection for a large area in southwest Bonner County. The total area covered by the Spirit Lake Fire District is 24,204 acres. The district has three fire stations, one at Spirit Lake, at Blanchard, and one at Spirit Lake Cut-off.

Fire apparatus includes:

Three Type 1 Engines
One Type 2 Engine
Two Type 5 Engines
Two Type 6 Engines
Four Type 2 Water Tenders

Personnel:

Seven paid and twenty volunteer fire fighters.
There are no plans to expand facilities or the district at this time.

West Bonner Fire District

This district contracts with the City of Newport, Washington for fire protection.
West

Bonner provides three volunteers for Newport.

There are no plans to build facilities or expand the district in Bonner County.

West Pend Oreille Fire District

This district covers 64,000 acres and includes the cities of Priest River and Oldtown.

There is one fire station located on Hwy 57 near the airport in Priest River and a second station downtown in Priest River.

Fire apparatus includes:

Five Type 1 Engines

One Type 2 Engine

Four Type 6 Engines

One Type 7 Engine

Two Type 2 Water Tender

One Type 3 Water Tender

Personnel:

Fifty-one volunteer fire fighters.

Future expansion plans include a new station on the Old Priest Rive Road south east of Oldtown, and a new station in the vicinity of the Blue Lake Community Center.

West Priest Lake Fire District

The district has two fire stations. One station is located at Nordman and the other is located at Kalispell Bay. The district covers 10 square miles.

Fire apparatus includes:

Two Type 1 Engines

One Type 3 Tender

One 3000 Gal. Tender

One type 4 Fire Boat

Personnel: The District has twenty-five volunteer fire fighters

A third fire station is planned for the Lamb Creek area. There are no plans to expand the district at this time.

Westside Fire District

The district covers 13,458 acres and recently annexed Laclede that includes additional acres. The district has two fire stations. One station is located in Dover and the other is located at Laclede. A new station in Dover is expected to be complete by March 1, 2007.

Fire apparatus includes:

Three Type 1 Engines

Three Type 2 Engines
One Type 3 Engine
One Type 6 Engine
One Ladder Truck (102') w/2000 gpm pump
One 2500 gal. Tender
One 2000 gal Tender
One 1800 gal. Tender
One 1200 gal. Tender
One 1000 gal. Tender
Two jet skis with trailer
Three ambulances (2 ILS, 1 ALS CCT)
Equipment expected soon includes 6-wheel Gator with fire fighting and EMS capabilities and Fire boat with 3000 gpm pump

Personnel:

Two paid and twenty volunteer fire fighters.
Future plans for facilities include the construction of a new station at Wrenco Loop and Baldy Mountain. Plans also include relocation of the station in Dover plus completion of a training facility/office for the Laclede Station.

SamOwen Fire District

The district covers the Riser Creek area and the Hope Peninsula. (Approximately 4.5 square miles.) A new station has been constructed at the intersection of Hwy 200 and Peninsula Road. The district has automatic aid agreements with Hope/East Hope and Clark Fork fire districts.

Fire Apparatus includes:

Two Type 1 Engines
One Type 6 Engine
One Type 2 Tender
Two Type 3 Tenders

Personnel: Eleven volunteer fire fighters.

Future plans for facilities include a satellite station on Upper Spring Creek Rd. The Fire Chief expects the district to expand in the near future.

Clark Fork Volunteer Fire Department

The Clark Fork Fire Department has two fire stations in Clark Fork. The district provides services to 77 square miles extending from the Montana border to the eastern shore of Lake Pend Oreille, plus class 8 protection to the City of Clark Fork. Automatic aid is provided to the cities of Hope/East Hope and Sam Owen Fire Protection District. Mutual aid is available to the Heron, Montana Fire District, IDL and the USFS.

Fire Apparatus includes:

One Type 1 Engine
One Type 2 Engine
One Type 7 Engine
One Type 4 Tender

Personnel:

The Department has twelve volunteer fire fighters.
There are no plans to expand the fire district.

Hope/East Hope City Fire Department

The fire district has one fire station located in East Hope and provides structure protection for Hope and East Hope. The district also has automatic aid agreements with Clark Fork and Sam Owen fire districts.

Fire Apparatus includes:

One Type 2 Engine

One Type 4 Engine

One Type 3 Tender

Personnel:

The department has twelve volunteer fire fighters.

The department has no plans for expansion or new facilities at this time.

Sandpoint Fire Department

The district includes the City of Sandpoint. The City has one fire station located at 1123 Lake Street in Sandpoint.

Fire Apparatus includes:

One Type 1 Engine

Two type 2 Engines

Personnel:

Ten paid and seven volunteer fire fighters.

There are no plans to expand the district or facilities at this time.

Idaho Department of Lands Resources

In general, Idaho Department of Lands is responsible for fire suppression on private and public lands within their response area. In Bonner County, the Department of Lands has two Protection Districts, one for the Priest Lake area and the other for the remaining portions of the county.

Priest Lake Forest Protective District

The Priest Lake District includes the east side of Priest Lake north to the Bonner Co./Boundary Co. line. The District has one fire station located at Coolin, Idaho near Priest Lake.

Fire apparatus includes:

One Type 4 Engine

One Type 5 Engine

One Type 6 Engine

One Type 7 Engine

One Medium Dozer (Cat D-5)

Personnel:

Three permanent and eleven seasonal paid employees.

There are no plans to expand facilities at this time

Pend Oreille Forest Protective District

The Pend Oreille District includes all of Bonner County except for the area covered by the Priest Lake District and the areas covered by the U.S. Forest Service. The District has one fire station located in Sandpoint.

Fire apparatus includes:

One Type 4 Engine

One Type 6 Engine

Two Type 7 Engines

One Type 3 Dozer

One Type 3 Water Tender

There are no plans to expand facilities at this time.

United States Forest Service resources

The Forest Service is responsible for suppression of fires on federal lands and private lands within their response area

Priest Lake Ranger District

The Priest Lake Ranger District covers the west side of Priest Lake north to the Bonner County line.

Fire apparatus includes:

One Type 4 Engine

Two Type 6 Engines

Sandpoint Ranger District

This district covers the east side of Bonner County and Lake Pend Oreille to the Montana border, south to Farragut State park and north to Elmira Peak.

Fire apparatus includes:

One Type 4 Engine

One Type 5 Engine

One Type 6 Engine

There are no plans for expansion.

Equipment/Facility Needs Identified

The fire districts/departments in Bonner County were asked to identify equipment and facility needs to help mitigate the risks associated with wildland fire. Following is the list of needs identified by the fire districts/departments.

Clark Fork Fire Department

- One 2,100 gallon Tanker/Pumper
- One Interface Type 2/3 Engine
- Twelve new style fire shelters

Northside Fire District

- 9 dry hydrants

Sagle Fire District

- 1 Type 2 Engine
- 2 Type 1 or 2 water tenders
- Wildland PPE
- Structure PPE for volunteers
- Structure and Wildland hose, nozzles and fittings
- Communications equipment specifically portable radios, P-25 capable

Sam Owen Fire District

- Satellite fire station
- 4 dry hydrants on the peninsula
- Newer and more reliable Type 6 engine

Schweitzer Fire District

- Expansion of community water system to Fire Station
- Substation
- 1200 ft of LDH

Westside Fire District

- 3 dry hydrants
- Water storage system at remote station
- Barricade Gel Package
- New fire station in Wrenco area

Hope/East Hope Fire District

- Extrication Truck
- Dry Hydrant at Trestle Creek
- PPE
- Boat for water rescue and access to Warren Island
- Additional Type 5 (Wildland) Engine

North of the Narrows Fire District

- Hose, 2 ½", 1 ½", 1", nozzles and fittings
- Dry hydrants at Bear Creek and Sandpiper Shores
- PPE and SCBA's
- Chainsaws, wildfire packs and shelters, wildfire tools
- Water tender
- Addition to current fire station or satellite station in central location.

West Pend Oreille Fire District

- New Fire station on Old Priest River Rd.
- Site acquisition and new fire station in vicinity of Blue Lake Community Hall
- Dry hydrants at river locations (6)

- Hose, 1 ½", 1 ¾", 2 ½", nozzles and fittings
- 1 Type 5 Engine (Wildland)
- Additional fire hydrants in Priest River (8)
- Replace fire hydrants in Priest River (17)
- PPE, Wildland and Structural
- 20 Handheld radios, narrowband
- Radio Repeater Station
- 4 Mobile Radios, narrowband

West Priest Lake Fire District

- New Fire Station in the Lamb Creek area
- Two new trucks Triple Combination, Class 1 Engines
- Two Type 2 water tenders (3000 gallon, 250 gpm pump)
- New Fire Boat (750 gpm pump)
- Wildland PPE
- Structural PPE
- SCBA's
- Hose; 5", 2 ½", 1 ¾", nozzles and fittings
- Portable injection fans
- Fire tools, (axes, pike poles, etc)
- Radios, mobile and handheld, P-25 compatible
- Ladders
- Thermal Imaging Camera
- Gas detector
- Two AED's
- CAFS system, slide in
- Air Compressor and cascade system for filling air bottles for SCBA's

Coolin-Cavanaugh Bay Fire District

- New Fire Station in Cavanaugh Bay area
- Community Water System in Coolin
- Two new trucks Triple Combination, Class 1 Engines
- Two Type 2 water tenders (3000 gallon, 250 gpm pump)
- New Fire Boat (750 gpm pump)
- Wildland PPE
- Structural PPE
- SCBA's
- Hose; 5", 2 ½", 1 ¾", nozzles and fittings
- Portable injection fans
- Fire tools, (axes, pike poles, etc)
- Radios, mobile and handheld, P-25 compatible
- Ladders
- Thermal Imaging Camera
- Gas detector

- Two AED's

County-wide Concerns

The issues of life safety, including fire fighter safety, water supply, communications, training and public education remain at the forefront as described in the original Plan. Development continues in remote areas of the county without regard to water supply for fire fighting purposes. The development of dry hydrants of a standardized design will assist in times of mutual aid. Better still would be a requirement for developers to address the issue of water supply.

Interoperable communications is a theme at all levels from Homeland Security to county emergency planning. Some advances are being made at the state and local levels in the development of communications plans. For years first responders have encountered difficulties when attempting to communicate between agencies: the most common problem being that each discipline uses a separate frequency. The communications plans, and other protocols instituted by Idaho Bureau of Homeland Security, such as requiring all radios purchased with federal grant funds to be P25 compliant are meant to address these gaps in the ability of agencies to communicate with each other. Implementation, particularly the costs associated with replacing and purchasing new equipment and the availability of the hardware are among the largest hurdles at this time. Changing the frequencies and radios does not address the other problems of "dead spots" and voids where signals don't penetrate due to extreme terrain or areas without adequate repeater coverage. Working toward a resolution of the communications problems is identified in the Preparedness Action Plan section of this document.

Training is being conducted by the Bonner County LEPC during table-top exercises. These sessions help work out some of the logistics of a local large scale emergency. Needs still exist in the identification of personnel to fill the Command and General staff positions in the event a local disaster occurs. Once identified, training for the specific positions needs to take place.

It is recommended that the County adopt the International Fire Code in its entirety and that it be applicable for all new construction across the county, not just subdivisions.

Educating the public to be aware of wildfires, and the threat they pose to life and property must be a constant and consistent process. The ever changing and increasing population demands an education program that addresses the differing knowledge and experience levels of residents, and requires frequent repetition to reach the maximum audience. The development of new brochures,

programs for schools, fairs and other public gatherings is a primary function of the BONFIRE Program.

The development of a new BONFIRE web site will aid in the Public Awareness campaign. It will strengthen communication with the public and the local fire districts.

The original Plan, page 27, stated the need for a Fire Safe Ordinance very clearly. The chances a structure will survive a wildfire are increased when a defensible space is created around the home or business. Bonner County Fire Chiefs continue to work with the county to develop ordinances that enhance the work of BONFIRE and to adopt standards and codes that support the Fire Safe environment.

MITIGATION AND ACTION PLAN

The Bureau of Land Management has designated all of the communities in Bonner County as Communities at Risk to wildfire. Consequently all of Bonner County is designated as a high priority area. The terrain and fuel conditions that exist across the county dictate that all areas are at equal risk to wildfire. The risk to individual homes and businesses can be assessed at the time of participation in BONFIRE.

The BONFIRE Steering Committee has purposely not been rigid when setting priorities for HFT projects. Funds provided through the National Fire Plan vary by agency and program; some carry restrictions with significant limitations where and how they may be used. When unrestricted, consolidated funds are available they allow the program the flexibility to meet the needs of the greatest number of residents.

MITIGATION OF WILDFIRE HAZARDS

Goals and Objectives: Reduce the risk to life and property, increase fire fighter and public safety and reduce fire suppression costs.

Who is Responsible: Bonner County through the BONFIRE program in cooperation with private property owners, Federal, state, and local government agencies, and fire departments and protection districts.

Funding Sources: National Fire Plan, State Fire Assistance Hazard Mitigation Program, Idaho Dept. of Lands: Forest Stewardship Program, Idaho Dept. of Lands: Communities at Risk, Bureau of Land Management.

Timeframe for Completion: Ongoing

Protecting lives, property, natural resources and the economy in Bonner County is the number one priority of the BONFire program. BONFire has determined that hazardous fuels treatment around homes provides an effective means to meet that goal. Over 700 structures have been protected to date in Bonner County. Additionally the landowner can improve safety by cleaning the roof and gutters, screening a deck or porch and utilizing fire resistive building and landscaping materials. These items are identified when an assessment of the home is made during the initial contact with the Project Manager.

Fire Agency Identified Projects

The BONFIRE Committee continues to work with local fire districts to develop mitigation strategies to address the threat of wildland fire to our communities. Each of the districts provided a list of areas where they feel hazardous fuels treatment (HFT) should be a high priority mitigation action. Because grant funding for hazardous fuels treatment projects is limited from year to year, the BONFIRE committee working with the federal fire agencies has developed a list of fuel treatment projects. Most fuels treatment projects consist of creating defensible space around homes; in some cases it may be more advantageous to construct shaded fuel breaks. The first objective of the mitigation plan is to determine the most effective and responsible method of reducing the threat to residents and their property. HFT activities to create defensible space around the high-risk homes in the county may be identified as the best or first mitigation action to be completed. The specific risk to an individual home is determined at the time the landowner requests to participate in the BONFIRE program. The Project Manager meets with the landowner, assesses the risks to the home or other structure, discusses concerns such as roof decomposition, or LPG locations, and if appropriate develops a plan to construct defensible space.

- **Baldy Mountain Rd., West Pine St. Area**
The project area includes hazardous fuels treatment work on approximately 640 acres. Hazardous fuels treatment work will be concentrated on providing defensible space around homes and businesses.
- **Schweitzer Mountain Road Area** - The project encompasses 320 acres of hazardous fuels treatment work. The project will provide defensible space around homes and businesses and create a fuel break along the length of Schweitzer Mountain Road. Protection for the City of Sandpoint watershed is an integral part of the project.
- **Gold Hill Area** - Approximately 640 acres will be treated in the Gold Hill Area. Again the emphasis of this priority will be to provide defensible space for homes.

- **West Settlement** - This adds 320 acres of hazardous fuels treatment work in the Priest River area. Defensible space will be developed around homes and businesses.
- **Coolin-Cavanaugh Bay Area** - This adds another 640 acres of hazardous fuels treatment work in the Priest Lake area. Again the emphasis is to provide defensible space for homes and businesses.
- **Blanchard Area** - This adds 320 acres of hazardous fuels treatment work in the Blanchard Area. This area includes Stoneridge, Wild Meadows, Treeport and the Blanchard Cutoff areas. The emphasis will be to develop defensible space around homes and businesses.
- **West Oden Bay/Sunnyside Area** – An area of 3000 acres containing approximately 200 homes.
- **Riser Creek/Sam Owen Peninsula** – This area has received some treatment in the form of a shaded fuel break protecting approximately 25 homes. Approximately 1900 acres remain to be treated to provide defensible space around homes.
- **City of Sandpoint (Sandcreek and Chuck Slough Areas)** – Approximately 640 acres require treatment to provide defensible space for 120 homes.
- **An area NW of Sandpoint** – This area has been identified as that area bounded by Baldy Road, Selle Road and west of the BNSF railroad tracks containing about 2000 acres to be treated to provide defensible space around homes and businesses.
- **Hoodoo Loop Road Area** – This area contains approximately 2500 acres in western Bonner County requiring treatment to protect approximately 50 homes.
- **Vay Road Estate Loop** – This area contains approximately 640 acres and 50 homes with single access.
- **Hoodoo Mountain Area** – This area contains approximately 2500 acres requiring treatment to provide defensible space around 50 homes.
- **Stoneridge and Wild Meadows Estates** – This development contains approximately 2000 acres and contains 600 homes with single access.
- **Quail Ridge Development** – Approximately 112 homes are situated on 1200 acres requiring defensible space around homes.
- **Outback Loop** – This is a development of 70 homes on a tract of 1200 acres with single access and high fuel loading.
- **Rena Road/ Womack Road** – Treatment of 320 acres to provide defensible space to 60 homes is required here.
- **New Developments above Hope and East Hope** - These areas are to be targeted for developer treatment at the time of development.
- **Ridgeview Terrace and Ridgeview Lane** – These areas east of Priest Lake include approximately 300 acres to be treated to provide defensible space around homes.
- **Cocollala Lake Area** – The south and east aspects around the lake require treatment to provide defensible space around homes.

- **Garfield Bay Area** – The east, south and west aspects require treatment to provide defensible space around homes. Some work has been accomplished here but more remains to be completed.
- **West Lakeshore Road (Outlet to Luby Bay) and Neopit Road** - These areas along the west side of Priest Lake require treatment to improve ingress/egress and to provide defensible space around homes.
- **Nordman, Reeder Bay, and Kalispell Bay Resort Areas** – Require treatment to provide defensible space around homes and to improve ingress/egress.
- **Kalispell Creek Road** – Requires treatment to improve a major evacuation route from the west side of Priest Lake.
- **Highway 2 Corridor (West of Priest River to Sandpoint)** – This major traffic route requires treatment to improve evacuation and fire access.
- **Highway 95 Corridor (South County Line to North County Line)** – Requires treatment to improve evacuation route and fire access.
- **Highway 200 Corridor (Sandpoint to Clark Fork and State Line)** – Requires treatment to improve evacuation route and fire access.
- **Highway 41 Corridor (Oldtown to Blanchard)** – Requires treatment to improve evacuation route and fire access.
- **Highway 57 (Priest River to Nordman)** – Requires treatment to improve highway safety, evacuation route and fire access.

Hazardous Fuels Treatment Beyond Defensible Space

Hazardous fuels treatment as part of the implementation strategy for the National Fire Plan focuses on a collaborative effort among local, state, and federal governments in setting priorities that emphasize protection for communities and high-priority watersheds at risk. The creation of defensible space around individual homes is only a part of a strategy necessary to ensure adequate protection from wildfire. It is beneficial to perform hazardous fuels treatment (HFT) beyond and in addition to defensible space within the Wildland Urban Interface in order to more completely address the threat from wildfire. For purposes of this plan, **the Wildland Urban Interface (WUI) includes any area within two miles of dwellings used for human habitation and/or infrastructure that serves these points of habitation** (see Appendix A for a complete definition of Wildland Urban Interface).

Projects proposed on state and federal land within/or adjacent to the WUI can greatly reduce the threat to life and property from wildfire. A list of proposed USDA Forest Service and BLM HFT projects that would provide added protection to the WUI can be found in Appendix H. Where possible, **BONFIRE** HFT work associated with the mitigation strategy of this plan has been coordinated and, if practicable, co-located near or adjacent to USDA Forest Service and BLM HFT projects.

PREPAREDNESS ACTION PLAN

The Preparedness Action Plan presented in the Original Plan remains in effect. It should be noted that the Timeframe for Completion for the individual actions is “Ongoing”. This plan will be reviewed annually, and updated as appropriate.

Public Education

Home Hazard Assessments

Standardization has been achieved in the evaluation of risks for home owners; the evaluation is done by the Project Manager at the time of participation in the fuel reduction project. The IDL Home Hazard Assessment form is not being used when the evaluation is performed by the Project Manager with a property owner who is participating in the fuel reduction program. The IDL form is available and may be most beneficial when used as a teaching tool.

CONCLUSIONS

BONFIRE is well on its way to providing an effective and proactive program for Bonner County residents to protect themselves from wildfire. The County Wildfire Protection Plan is meant to be a living and adaptable document. The public is encouraged to become involved and provide input because, “we are all in this together.” In the event of wildfire, every chain is only as strong as its weakest link. Therefore, it is our goal to make every link as strong as possible.

APPENDIX A

Wildland Urban Interface Definition

Hazardous fuels treatment to create defensible space for the protection of homes and businesses is defined in this plan, and provides an effective and essential element of mitigation planning and implementation. The communities and residents of Bonner County have utilized this document (County Wildfire Protection Plan) to establish a localized definition and boundary for the wildland urban interface (WUI). The external boundary, within which, modification of forest fuels would reinforce this work and help assure its success in the event of a wildfire, is defined as the perimeter of the wildland urban interface. *This perimeter is two (2) miles beyond places of human habitation and/or the infrastructure that serves these points of habitation.*

The WUI is described as the zone where structures and other human development meet and intermingle with undeveloped wildland or vegetative fuels. This WUI zone poses risks to life, property, and infrastructure in associated communities and is one of the most dangerous and complicated situations firefighters face. Infrastructure includes gas, power and communication lines and towers, transportation routes, including ingress, egress and evacuation, rail lines, and watersheds where citizen groups have organized for joint collection of water for domestic uses. In instances where topography immediately outside the two-mile zone would allow “anchoring” to good fire control points, such as ridge tops or roads, the zone will be extended to the anchor point.

Rationale for designating a distance of two miles for the Wildland Urban Interface

The forested landscape of north Idaho has adapted with wildland fire disturbances for centuries. Large fires events in north Idaho have historically been wind-driven events, occurring when uncontained fires were fueled by strong winds (such as the north Idaho and western Montana fires of 1910, MacPherson Fire of 1931, and Sundance Fire of 1967). These wind-driven fires often spread several miles within mere hours – the Sundance Fire traveled 16 miles in 9 hours (Anderson 1968). Firebrands were found 10-12 miles in advance of the Sundance Fire (Anderson 1968), and indicate the potential for spot-fires to develop well ahead of the main fire. It is during times of extreme fire behavior such as these when the communities in Bonner County, and fire fighters’ safety is at the greatest risk from wildfire.

Fuel treatments to protect the values at risk within the county also aid in: reducing potential fire intensities, property and environmental damage, and increasing the effectiveness of suppression activities. Through the reduction of

ground fuels, thinning of trees, and removal of ladder fuels, flame lengths will be lower in the event of a fire, which will reduce fire intensities and (where desirable) allow for more efficient and effective fire suppression. As canopy base height is raised through fuel treatments, and surface flame lengths are reduced, the potential of fire moving into the canopy is lessened and the effectiveness of suppression efforts increased. The values at risk within the county include much more than homes and other structures, encompassing recreation opportunities, water supplies, radio and telecommunications, public facilities, urban trees, shrubs, fences, utility poles and wires, street lights, private property, just to name a few. Indirect impacts of wildland fires include undesirable consequences such as erosion, sedimentation, loss of wildlife habitat, negative aesthetic effects, damage to timber resources, etc.

Fuels treatments around the communities within the county are performed with the goal of reducing flammability, fire intensity, firebrand production, potential for crown fire, and increasing the ability to suppress wildland fire. The amount of fuel reduction treatments and the location of those treatments on the landscape directly influence the growth of large wildland fires (Graham, McCaffrey, and Jain 2004). In addition, Graham, McCaffrey, and Jain (2004) state that reducing the potential for crown fire and fire growth will decrease the chance of developing a large wildland fire that affects human values in the wildland urban interface.

The effectiveness of fuel treatments in reducing potential fire intensities is well researched and supported. The amount of treatment necessary across the landscape for protecting values at risk from a wildland fire event is subject to site specific variability; such as the position on slope, windspeed, access, flammability, duration of the fire event, time of day, etc. Peterson et al. (2005) states that management of fuel across large landscapes is required to effectively reduce the area and severity of fires, as well as effects on local communities. The management of fuel within the two miles of values at risk within the county is consistent with these findings.

Research by Cohen (2000) has provided information on how structures catch on fire, and how once on fire the structures can contribute to the growth and spread of the fire. Cohen (2000) has shown that structures with typical ignition characteristics (wood sided, wood framed, asphalt composition roof) are at risk of catching on fire from several different sources. Structures can become ignited by direct exposure from intense flames from a nearby source, which could be intensely burning vegetation or another structure. Structures may be at risk if the flame front is no more than about 100 feet away. Structures may be ignited from less intense sources against or very near the side of the structure. This can occur if firewood or other flammable material next to the structure is ignited by a ground fire or firebrands. Lastly, firebrands falling directly on roofs can ignite the structure if the roof is flammable (wooden shakes, for example) or if flammable debris is present, such as dry tree leaves or needles (Cohen 2000). In addition to individual structure ignition and combustion concerns, Finney and Cohen

(2003) suggest that in order to effectively protect communities the amount of land that needs to be treated to reduce fire risk depends on the current structure of the vegetation, fuel loadings, topographic location, fire regime, and suppression concerns.

With the current forest structure, fire regimes changes, and suppression concerns in north Idaho; observed fire behavior indicates that a major component of risk exposure is created by a combination of rate-of-spread and long range spotting. In the absence of non-lethal fires (due to 80 + years of fire suppression), both ground and ladder fuels have increased due to tree growth, normal tree mortality, and insects and diseases, changing forest structures. Fire regimes are general classifications of the role fire would play across a landscape in the absence of modern human intervention, but includes aboriginal activities (Agee 1993, Brown 1995).

Successful establishment of spot fires in excess of one mile from the flaming front of an active fire occurred during the Sundance Fire (1967). In this condition, the spot-fires grew rapidly and generated burning embers that established additional spot-fires for miles down-wind. It is felt that for adequate fuel modification work to successfully protect habitation and infrastructure, in these conditions, a buffer of two miles is needed. Fuel modification in this buffer would add tremendously to the effectiveness of hazardous fuels treatment work around individual homes, provide for increased fire fighter safety, and protect values at risk.

Other considerations for the rationale include:

- Fuel modification work within the 2-mile zone along evacuation routes greatly reduces the potential that the routes would be cut off during a wildfire.
- During wind events, downed power lines are frequent ignition sources for fires. Fuel modification treatments in a zone along these structures would significantly reduce the risk to humans and their habitations.
- Bonner County is dependent on surface waters for domestic purposes. This dependency includes residents of cities as well as smaller communities of residents who have developed water intake systems scattered throughout the county. Protection of water sources and water quality is a high priority.
- In fire control operations, “anchoring” the fire line is a fundamental practice, for both effectiveness and for safety of personnel.

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APPENDIX H

U.S. Forest Service and Bureau of Land Management Hazardous Fuels Treatment Projects

Bureau of Land Management

Status of Bonner County Projects on BLM Managed Public Lands

- I. Elmira Stand Density Reduction and Species Restoration
 - A. Implement a pre-commercial thinning via contract to reduce stand density on approximately 21 acres on public lands approximately two miles southwest of Elmira, ID. This portion of the project would remove much of the Douglas fir, grand fir, western hemlock and western red cedar in-growth thus releasing the rust-resistant western white pine, western larch and ponderosa pine. The site is located in the NE $\frac{1}{4}$ SE $\frac{1}{4}$, Sec. 18, T. 59 N., R. 1 W. Contract would be awarded during the summer of 2007.
 - B. Implement slashing followed by prescribed burning and a reforestation effort on approximately 60 acres of public land. This portion of the project would reduce hazardous fuels and through reforestation efforts, move the site towards a cover type more closely resembling its historic species composition. After broadcast burning of the site, rust-resistant western white pine, western larch and ponderosa pine would be planted. The site is located in the E $\frac{1}{2}$ SE $\frac{1}{4}$, SW $\frac{1}{4}$ SE $\frac{1}{4}$, Sec. 18, T. 59 N., R. 1 W. The slashing contract would be awarded during the summer of 2007.
- II. East Harlem Fuels Reduction and Thinning
 - A. Reduce hazardous fuels and remove smaller diameter in-growth on approximately 40 acres of public land thus releasing the larger diameter trees present on-site. A timber sale contract has been awarded with work to begin during the late spring/early summer of 2007. The project area is located on Long Mountain approximately four miles southwest of Cocolalla Lake in the NW $\frac{1}{4}$ SW $\frac{1}{4}$, Sec. 28, T. 55 N., R. 3 W.
- III. Schweitzer Mountain Road Fuel Break
 - A. The treatment on public lands would primarily entail the removal of brush and smaller diameter trees 100 feet below and 50 feet above the road by hand and by mechanical means (masticator on a small

tracked excavator) thus reducing hazardous surface fuels, ladder fuels and opening the forest canopy. The activity and natural fuels would be either hand piled or mechanically piled and subsequently burned or chipped; or masticated on-site. Monitoring will consist, at a minimum, of pre- and post-treatment photos taken at representative sites.

- B. The legal description for this treatment on public lands is T. 57 N., R. 2 W., Sec. 4, NE $\frac{1}{4}$ NE $\frac{1}{4}$ and T. 58 N., R. 2 W., Sec. 28, SE $\frac{1}{4}$ SW $\frac{1}{4}$. Total public land acreage to be treated would be less than 20 acres. Upon completion of the categorical exclusion, this treatment would be implemented during the 2007 field season.

IV. Gold Mountain Fuels Reduction Project

- A. Currently a conceptual project. Inventory of forest vegetation and fuels data would be initiated during the latter part of the 2007 field season. Based on the data collected, future treatments would be proposed in collaboration with adjacent landowners, interested publics, Bonner County and other federal, state and local agencies. Following analysis via NEPA, treatments would not be initiated until at least 2009. The project area includes those public lands located in Sections 6, 7, and 8, T. 56 N., R. 1 W. and Sec. 12, T. 56 N., R. 2 W.

V. Little Sand Creek Watershed Fuels Reduction/Forest Health Project

- A. Currently a conceptual project. Inventory would be required to be completed prior to initiation of any proposed treatments. Inventory efforts could be initiated as soon as the 2007 field season. Based on the data collected, future treatments would be proposed in collaboration with adjacent landowners, interested publics, Bonner County and other federal, state and local agencies. The project area would include those public lands located in Sections 4, 5, and 6, T. 57 N., R. 2 W. and Sections 28, 29, 30 and 34, T. 58 N., R. 2 W.

VI. Long Mountain #3 Mechanical Piling

- A. Implement a mechanical piling contract for logging slash located on public land in the NE $\frac{1}{4}$ SW $\frac{1}{4}$, Sec. 28, T. 55 N., R. 3 W. Upon the piling of the logging slash, the piles will be burned during 2008 followed by reforestation with rust-resistant western white pine and western larch in the spring of 2009. The piling will be implemented during the 2007 field season.

USDA Forest Service, Sandpoint ID, 5-year fuels program

1: Projects currently in Implementation phase:

Project	Summary (Purpose and Need)	Benefit to the Community	Location	Description	Acres
Wrenco Loop	Improve forest health and wildlife habitat. Reduce hazardous fuels and improve forest health by changing Condition Class within the Wildland Urban Interface.	Decrease the risk of a wildland fire burning structures or forest resources. Provide economic opportunities through timber sale/mechanical treatments	National Forest system lands in the Johnson Creek drainage, approximately 8 air miles west of Sandpoint, ID	Treat National Forest System lands with mechanical harvest/thinning and prescribe fire to reduce the risk of crown fire, improve firefighter and public safety and improve Condition Class/forest health.	680 Acres
Sam Owen	Reduce hazardous fuels and improve forest health by changing forest Condition Class on National Forest System land adjacent to the Wildland Urban Interface.	Decrease the risk of wildland fire burning structures or forest resources. Provide economic opportunities through timber sale/mechanical fuels treatment.	National Forest System lands on the Hope Peninsula.	Treat National Forest System lands with mechanical harvest/thinning and prescribe fire to reduce the risk of crown fire, improve firefighter and public safety and improve Condition Class/forest health.	280
Little Blacktail Ecosystem Restoration	Improve forest health and wildlife habitat. Reduce hazardous fuels improve forest health by changing Condition Class along Forest Boundary adjacent to the Wildland Urban Interface.	Decrease the risk of wildland fire burning structures or forest resources. Provide economic opportunities through timber sale/mechanical fuels treatment	National Forest System Lands three air miles from Cocolalla Lake and approximately 12 air miles south of Sandpoint, ID	Treat National Forest System lands with mechanical harvest/thinning and prescribe fire to reduce the risk of crown fire, improve firefighter and public safety , and improve Condition Class/forest health	1,231 acres

2,191 total

2. Projects where planning (NEPA) is complete:

Project	Summary (Purpose and Need)	Benefit to the Community	Location	Description	Acres
West Gold	Improve forest health and watershed integrity. Reduce hazardous fuels and improve forest health by changing Condition Class within Wildland Urban Interface.	Decrease the risk of wildland fire burning structures or forest resources. Provide economic opportunities through timber sale/mechanical fuels treatment.	National Forest System Lands with in the Gold Creek drainage, approximately 2 mile southwest of Lakeview, Idaho.	Treat National Forest System lands with mechanical harvest/thinning and prescribe fire to reduce the risk of crown fire, improve firefighter and public safety, and improve Condition Class/forest health	1,338 acres
South Grouse	Reduce hazardous fuels within the project area to lessen wildfire risk to communities and infrastructure, private and National Forest System lands, and resource values.	Decrease the risk of wildland fire burning structures or forest resources. Provide economic opportunities through timber sale/mechanical fuels treatment.	National Forest System Lands with in the Grouse Mountain area, near the community of Sagle Idaho and the rural residences of Garfield Bay.	Treat National Forest System lands with mechanical harvest/thinning and prescribe fire to reduce the risk of crown fire, improve firefighter and public safety, and improve Condition Class/forest health	965 acres

2,303 total

3. Projects where planning is currently underway or being worked on:

Project	Completion Priority/ Year	Summary (Purpose and Need)	Benefit to the Community	Location	Description	Acres
Tumbledown	2/ 2007	Improve forest health and watershed integrity. Reduce hazardous fuels and improve forest health by changing Condition Class within Wildland Urban Interface.	Decrease the risk of wildland fire burning structures or forest resources. Provide economic opportunities through timber sale/mechanical fuels treatment.	National Forest System Lands within Tumbledown Creek drainage. It is located on the east shores of Lake Pend Oreille near the rural residences of Cedar Creek and Lakeview ID	Treat National Forest System lands with mechanical harvest/thinning and prescribe fire to reduce the risk of crown fire, improve firefighter and public safety, and improve Condition Class/forest health.	671 acres
Rising Cougar	3/ 2007	Improve forest health and wildlife habitat. Reduce hazardous fuels improve forest health by changing Condition Class along Forest Boundary within the Wildland Urban Interface.	Decrease the risk of wildland fire burning structures or forest resources. Provide economic opportunities through timber sale/mechanical fuels treatment.	National Forest lands that face Lake Pend Oreille between East Hope and the Montana border.	Treat National Forest System lands with mechanical harvest/thinning and prescribe fire to reduce the risk of crown fire, improve firefighter and public safety, and improve Condition Class/forest health.	2,372 acres
Gold Crown	12/2007	Reduce hazardous fuels and improve forest health by changing Condition Class within the Wildland Urban Interface.	Decrease the risk of wildland fire burning structures or forest resources. Provide economic opportunities through timber sale/mechanical fuels	National Forest lands on Gold Hill, near the community of Sagle and the rural residences around the shores of Lake	Treat National Forest System lands with mechanical harvest/thinning and prescribe fire to reduce the risk of crown fire, improve firefighter and	Unknown at this time.

			treatment.	Pend Oreille.	public safety, and improve Condition Class/forest health.	
Schweitzer	12/2008	Reduce hazardous fuels and improve forest health by changing Condition Class within the Wildland Urban Interface.	Decrease the risk of wildland fire burning structures or forest resources. Provide economic opportunities through timber sale/mechanical fuels treatment.	National Forest lands in the Sand Creek drainage downhill from the structures and residences near the Schweitzer mountain ski hill.	Treat National Forest System lands with mechanical harvest/thinning and prescribe fire to reduce the risk of crown fire, improve firefighter and public safety, and improve Condition Class/forest health.	Unknown at this time.
Careywood	12/2008	Reduce hazardous fuels within the project area to lessen wildfire risk to communities and infrastructure, private and National Forest System lands, and resource values.	Decrease the risk of wildland fire burning structures or forest resources. Provide economic opportunities through timber sale/mechanical fuels treatment.	National Forest System Lands near the rural residences of Careywood and Farragut Idaho.	Treat National Forest System lands with mechanical harvest/thinning and prescribe fire to reduce the risk of crown fire, improve firefighter and public safety, and improve Condition Class/forest health	110 acres
						3,263 total

4: Future projects in concept:

Future Fuels projects identified for which no formal planning efforts have yet occurred:

- Sugar Ant
- Ponder Granite
- Kilroy Bay
- Lakeview
- Talache Pearl
- Trestle Creek
- Mineral Point/Green Bay
- Jewel/ Horn Mountain

USFS Sandpoint WUI Project Development and Implementation Timeframes

Project	<i>Planning Timeframe</i>	Implementation Timeframe
Wrenco Loop	Completed EA spring 2006	Begin implementation 2007
South Grouse	Completed EA in fall 2006	Begin implementation 2007
West Gold	Completed EIS in fall 2006	Begin implementation 2007
Tumbledown	Complete CE in 2006	Begin implementation 2007
Rising Cougar	Complete EIS by fall 2007	Begin implementation 2008
Gold Crown	Complete CE by fall 2007	Begin implementation 2008
Schweitzer	Complete CE by fall 2008	Begin implementation 2009
Careywood	Complete CE by fall 2008	Begin implementation 2009

US Forest Service Priest Lake RD WUI treatments being considered in Bonner County, Idaho.

Projects currently in Planning phase

Project	Summary (Purpose and Need)	Benefit to the Community	Location	Description	Acres
Lakeview Reeder HFRA (formerly Kalispell and Granite-Reeder projects)	Reduce hazardous fuels and improve forest health by changing Condition Class along Forest Boundary adjacent to Wildland Urban Interface.	Decrease the risk of a wildland fire burning structures or forest resources. Provide economic opportunities through timber sale/mechanical treatment.	National Forest System lands within the lower reaches of Granite Cree, Kalispell Creek, and Reeder Creek, adjacent to private land within the Nordman area.	Treat National Forest System lands with mechanical harvest/thinning and prescribed fire to reduce the risk of crown fire, improve firefighter and public safety, and improve Condition Class/forest health	Total project area is 30,000 acres. Treat estimated 8000 acres within Bonner County.
Beaver Creek CE	Reduce hazardous fuels and improve forest health by changing Condition Class along Forest Boundary adjacent to Wildland Urban Interface, in and adjacent to developed recreation site, and along egress routes.	Decrease the risk of a wildland fire burning structures or forest resources. Provide economic opportunities through timber sale/mechanical treatment.	National Forest System lands within the Beaver Creek, Tepee Creek, Tango Creek and Priest Lake drainages, adjacent to private land and developed recreation site, and along egress routes.	Treat National Forest System lands with mechanical harvest/thinning, hand piling, and prescribed fire to reduce the risk of crown fire, improve firefighter and public safety, and improve Condition Class/forest health	Treat estimated 350 acres within the estimated 2000 acre project area
Stone Johnny	Improve wildlife habitat and reduce hazardous fuels along Forest boundary, adjacent to Wildland Urban Interface.	Decrease the risk of a wildland fire degrading wildlife winter range or forest resources.	National Forest System lands adjacent to private land in the Stone Johnny Mountain area 5 miles north of the community of Oldtown.	Treat National Forest System lands with prescribed fire to improve wildlife habitat and reduce hazardous fuels.	Treat approximately 250 acres.

Projects currently in Implementation phase

Project	Summary (Purpose and Need)	Benefit to the Community	Location	Description	Acres
Lakeface Lamb Fuels Reduction	Reduce hazardous fuels and improve forest health by changing Condition Class along Forest Boundary adjacent to Wildland Urban Interface.	Decrease the risk of a wildland fire burning structures or forest resources. Provide economic opportunities through timber sale/mechanical treatment.	National Forest System lands within the existing Lakeface Lamb Fuels Reduction Project area, located adjacent to private land and federal lease lots within and adjacent to the Lamb Creek community.	Treat National Forest System lands with mechanical harvest/thinning, hand piling, and prescribed fire to reduce the risk of crown fire, improve firefighter and public safety, and improve Condition Class/forest health	1700 acres
Lakeface Lamb Fuels CE	Reduce hazardous fuels and improve forest health by changing Condition Class along Forest Boundary adjacent to Wildland Urban Interface. Tiers to Lakeface Lamb Fuels Reduction EIS.	Decrease the risk of a wildland fire burning structures or forest resources. Provide economic opportunities through timber sale/mechanical treatment.	National Forest System lands within the existing Lakeface Lamb Fuels Reduction Project area, located adjacent to private land and federal lease lots adjacent to the Lamb Creek community.	Treat National Forest System lands with mechanical harvest/thinning, hand piling and prescribed fire to reduce the risk of crown fire, improve firefighter and public safety, and improve Condition Class/forest health	Treat approximately 110 acres
Kedish Ridge	Reduce hazardous fuels and improve forest health by changing Condition Class along Forest Boundary adjacent to Wildland Urban Interface.	Decrease the risk of a wildland fire burning structures or forest resources. Provide economic opportunities through timber sale/mechanical treatment.	National Forest System lands along Kedish Ridge in the Reynolds Creek and Lamb Creek drainages 8 miles south of Nordman.	Treat National Forest System lands with mechanical harvest/thinning and prescribed fire to reduce the risk of crown fire, improve firefighter and public safety, and improve Condition Class/forest health	Treat 400 acres.
57 Bear Paws	Reduce hazardous fuels and improve forest health by changing Condition Class along Forest Boundary adjacent to Wildland Urban Interface.	Decrease the risk of a wildland fire burning structures or forest resources. Provide economic opportunities through timber sale/mechanical treatment.	National Forest System lands adjacent to private property and emergency egress routes in the Lower West Branch drainage, approximately 11 miles north of Priest River.	Treat National Forest System lands with mechanical harvest/thinning, hand piling, and prescribed fire to reduce the risk of crown fire, improve firefighter and public safety, and improve Condition Class/forest health	Treat 700 acres

Binarch DFB	Reduce hazardous fuels and improve forest health by changing Condition Class along Forest Boundary adjacent to Wildland Urban Interface.	Decrease the risk of a wildland fire burning structures or forest resources. Provide economic opportunities through timber sale/mechanical treatment.	National Forest System lands within the Binarch Creek and Lamb Creek drainages, south and west of the community of Lamb Creek	Treat National Forest System lands with mechanical harvest/thinning and prescribed fire to reduce the risk of crown fire, improve firefighter and public safety, and improve Condition Class/forest health	Treat 456 acres.
Gleason Pine	Improve forest health and watershed integrity. Reduce hazardous fuels and improve forest health by changing Condition Class within the Wildland Urban Interface	Decrease the risk of a wildland fire burning structures or forest resources. Provide economic opportunities through timber sale/mechanical treatment.	National Forest System lands within the Moores Creek drainage, approximately 17 miles north of Priest River.	Treat National Forest System lands with mechanical harvest/thinning and prescribed fire to reduce the risk of crown fire, improve firefighter and public safety, and improve Condition Class/forest health.	Treat 62 acres.
High Bridge - Outlet Fuels CE (HBO) (combined projects formerly named Dubius and Outlet to High Bridge)	Reduce hazardous fuels and improve forest health by changing Condition Class along Forest Boundary adjacent to Wildland Urban Interface.	Decrease the risk of a wildland fire burning structures or forest resources. Provide economic opportunities through timber sale/mechanical treatment.	National Forest System lands within the Dubius and Upper West Branch drainages, adjacent to private land and along emergency egress routes.	Treat National Forest System lands with mechanical harvest/thinning, hand piling, and prescribed fire to reduce the risk of crown fire, improve firefighter and public safety, and improve Condition Class/forest health	Treat approximately 900 acres within the estimated 3800 acre project area

Future Fuels projects identified for which no formal planning efforts have yet occurred:

Lower Priest
Kavanaugh Pee Wee
South Falls
West Quartz
Tunnel
Lower West Branch Flats
West Fork Moores
Gleason Meadow
Squaw Valley and Goose Creek

Hanna Flats
Priest Lake Islands
Lamb Creek
Dickensheet to High Bridge

USFS Priest Lake WUI Project Development and Implementation Timeframes

Project	<i>Planning Timeframe</i>	Implementation Timeframe
Lakeview Reeder HFRA	Complete FEIS by Fall 2007	Begin implementation in Summer of 2008
Beaver Creek CE	Currently on hold due to higher priorities	
Stone Johnny	Currently on hold due to higher priorities	

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