GOLDPAN COMPLEX FIRE

FS-2500-8
BURNED-AREA REPORT

BITTERROOT NATIONAL FOREST

INTERIM #1 FUNDING REQUEST
January 31, 2014

Date of Report: **01/31/14**

BURNED-AREA REPORT
(Reference FSH 2509.13)

PART I - TYPE OF REQUEST

A. Type of Report

[**X**] 1. Funding request for estimated emergency stabilization funds
[ ] 2. Accomplishment Report
[ ] 3. No Treatment Recommendation

B. Type of Action

[ ] 1. Initial Request* (Best estimate of funds needed to complete eligible stabilization measures)

[**X**] 2. Interim Report # **1**
[**X**] Updating the initial funding request based on more accurate site data or design analysis
[ ] Status of accomplishments to date
(New text in red font)

[ ] 3. Final Report (Following completion of work)

PART II - BURNED-AREA DESCRIPTION

From BARC analysis 9/7/2012 Image

A. Fire Name: Gold Pan Complex (ID & MT)

B. Fire Number: MT-BRF 013039

C. State: Montana, Idaho

D. County: Ravalli, MT and Idaho, ID

E. Region: 1

F. Forest: Bitterroot National Forest

G. District: West Fork

H. Fire Incident Job Code: P1HR1U (0103)

I. Date Fire Started: July 16, 2013

J. Date Fire Contained: Controlled Oct. 8, 2013

K. Suppression Cost: $11,500,000

L. Fire Suppression Damages Repaired with Suppression Funds
1. Fireline waterbarred (miles): 4.8 proposed, starting 9/23
2. Fireline seeded (miles): ongoing, approx 4.8 miles proposed
3. Other (identify): All hand lines repaired, approx 1.5 miles

M. Watershed Number:

6th-level Watershed Name	HUC
Upper Blue Joint	170102050105
Swet Creek-Selway River	170603010101
Wilkerson Creek	170603010102
Hells Half Acre-Selway River	170603010103
Deep Creek	170603010401

Indian Creek	170603010402
Magruder Creek-Selway River	170603010403

N. Total Acres Burned: **42,928** acres* NFS Acres (Other Federal (0) State (0) Private (0)
**This report considers only the acres burned on the Bitterroot National Forest using 9/12/13 fire perimeter. The final acreage is likely to be slightly higher.*

O. Vegetation Types: The fire area spans many vegetation types. Forested areas include Ponderosa Pine, Douglas Fir, Lodgepole Pine, Whitebark Pine, Grand Fir and Subalpine Fir. Non-forested areas include Mountain Mahogany, Sagebrush, and Bunchgrass. Beargrass, Ninebark, Snowberry, Huckleberry, Shrub Maple, Scolar Willow and other shrubs are common.

P. Dominant Soils: The upper Nez Perce Fork Bitterroot River and Selway River basins includes steep, highly dissected landforms with highly erodible soils. Soils within this area are moderately deep, coarse-textured sandy loams with high rock fragment content. Source areas are mostly granitic, with some areas of quartzite.

Q. Geologic Types: Granitics, Metamorphics, Quartzites

R. Miles of Stream Channels by Order or Class: Perennial: 105 Intermittent: 34
S. Transportation System
Trails: 29 miles open non-motorized, system (high and moderate severity)
Roads: 5 miles open system (high and moderate severity)

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 22,707 (low and unburned within fire perimeter*) 13,552 (moderate) 6,670 (high) Combined with Low Severity (Unburned / no data)
** An error in the satellite sensor created strips of no data in the 9/5/13 imagery. These strips are indistinguishable from unburned areas in the imagery.*

B. Water-Repellent Soil (acres):13,445*
** All high burn severity and 50% of Moderate burn severity.*

C. Soil Erosion Hazard Rating* (acres): 22,707 (low) 13,552 (moderate) 6,670 (high)
**Acres are based on the burn severity rating.*

D. Erosion Potential: 6 – 16 tons/acre

E. Sediment Potential: 8,840 – 10,240 cubic yards / square mile
Assumes 1 cubic yard per ton and 100% effectiveness for delivery to stream.

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years): 3-5 yrs grasses, 5-8 yrs shrubs, 50-80 yrs trees

B. Design Chance of Success, (percent): 75%

C. Equivalent Design Recurrence Interval, (years): 25 years

D. Design Storm Duration, (hours): 0.25 hours

E. Design Storm Magnitude, (inches): 0.53 inches

F. Design Flow, (cubic feet / second/ square mile): 4-6 cfsm

G. Estimated Reduction in Infiltration, (percent): 25 %

H. Adjusted Design Flow, (cfs per square mile) 110 cfsm[1]

PART V - SUMMARY OF ANALYSIS

A. Describe Critical Values/Resources and Threats: No downstream threats to life from storm events were found in the Gold Pan Complex Fire Area, however, the following threats were deemed significant:

General Description

1. Previously weed-free areas within High/moderate burn severity – loss of competing vegetation due to the fire will enable progressive migration of road & trail side weeds into new areas. A new invader to Montana & the Bitterroot-Selway Wilderness is present upwind in Idaho (Rush Skeletonweed). The large amount of bare ground caused by the severe burn creates an opportunity for new invasion by weed species not previously found in the middle Selway basin. If untreated, the high severity of large parts of the burn, and the large percentage of dry habitat types in the burn area result in a high probability that existing noxious weed populations will expand dramatically, and displace native plant communities. This risk is primarily on the south and west aspects within the fire (where the dry habitat types are concentrated), along with areas subjected to high-intensity fire that consumed the duff layer and increased the native vegetation recovery period.

   The Gold Pan Complex Fire has burned in a mosaic pattern with a full range of burn intensities from very high to unburned in discontinuous patches. Invasive plant species present a concern with respect to the goal of retaining native plant communities in order to maintain the structure and function of the local ecosystem. Most of the invasive plant species that occur within the fire perimeter are well-adapted to fire. These species respond favorably to fire events and often spread rapidly after fire. The invasive plant species identified in the fire area listed on the Ravalli County (Montana) Invasive Species List, Idaho statewide containment list, Idaho statewide control list, and/or Idaho County Cooperative Weed Management Area (CWMA) invasive list are shown in **Table 1**. Values at-risk from the invasion of new invasive/noxious species and rapid expansion of established invasive/noxious species include:
   a. Loss of native specie biological diversity and ecological stability on both public and private lands;
   b. Loss of healthy native plant communities currently dominant in weed-free areas will result from invasives encroachment within the fire perimeter;

[1] Use 110 cfsm for watershed less than 2 mi^2; Parret et al. 2003. Fire Hydrology. July 2003.
For watersheds 5-20 mi^2, the design storm should be approximately 23 cfsm; Arkell Richard E, and Frank Richards, 1986. Short Duration Rainfall Relations for the Western United States. August 1986. Gerhardt, N, 2003. Precipitation – Frequency Values for Lolo Pass, Idaho/Montana. Unpublished Paper. September 2003

c. Interference by invasive/noxious weeds with the natural regeneration of native plant communities affected by the burn;
d. Loss of critical big game and bighorn sheep (sensitive specie) foraging habitat throughout the fire affected area by new and/or expanded invasive weed infestations in timbered and open habitat types;
e. Loss of upland soil stability and productivity on open timber and grass/shrub habitat types that typically accompanies invasive/noxious weed infestations.
f. Loss of previous investments and gains in invasive/noxious weed control made by RAC grants, Rocky Mountain Elk Foundation grants, National Fish and Wildlife Foundation grants, Cooperative CD Barrier Zone Project monitoring/treatment work, numerous biocontrol releases in cooperation with the Western Agricultural Research Center (MSU), BNF appropriated fund project work, and cooperative work with the Nez Perce-Clearwater National Forest and Idaho County, Idaho.

2. Infrastructure: Due to fire effects, modest rain events could potentially cause extensive erosion and mass movement on steep hillslopes throughout the burned area. Additionally, reduced canopy interception, combined with lack of groundcover and hydrophobicity will cause areas of increased runoff response compared to pre-fire conditions. Drainages below burned areas will generate higher stormflows in the first few years following the fire. Larger flow events in part are a function of increased surface runoff from bare hillslopes. Furthermore, burned and exposed soils are more susceptible to entrainment and transport to stream channels.

a. There is a high risk to FR468 (Magruder Crossing Road) due to location of the road on the landscape and the existing culverts within the fire area, which are now undersized. 4 road/stream crossings with substantial high to moderate burn severity in their contributing area are at risk of overtopping and erosion. (Initial 2500-8 requested funding for replacing 2 culverts, not 4 as noted here – see Part IV, Intial request) FR468 is an important recreational connection between MT and ID, it lies between the Frank Church River of no Return and the Selway- Bitterroot Wilderness Areas and is the only route providing access. It also allows access to an important whitewater launching point (Paradise on the Wild and Scenic Selway River). Both the Nez Pearce - Clearwater and Bitterroot National Forests, and the communities on both sides of the fire, need to keep this road open as a through route for public safety, recreational, and economic concerns. After the initial 2500-8 was approved, road maintenance workers discovered a previously undiscovered culvert on FR468 below a burned area that is actively transporting fire ash and sediment during rain events. The current culvert is 12" diameter and located in a formerly dry draw that has been producing surface flow since the fire. The inlet basin filled with sediment several times during fall 2013, plugging the pipe and increasing risk of washout to the road prism, which has substantial fill at this location. Engineering and hydrology consultation produced a recommendation for a 36" squash (arch) pipe for this site. Counting this culvert, the total number to be replaced with emergency funding totals (3). Please see page 18 for a location map of the culvert, including burn severity.
b. There is a high risk to FR224 (Hells Half Acre Lookout Road), due to post-fire hydrology effects. The road provides important access to a staffed fire lookout, several trails and an outfitter spike camp. Four road/stream crossings have substantial high to moderate burn severity in their contributing area are at risk of overtopping, stream diversion and road prism erosion. 1.75 miles of road are below high angle slopes with high burn severity and little to no ground cover. This road is built on convex, high-angle slopes and proactive treatments would be cheaper than remediation after damage.
c. Trail prisms/infrastructure – post-fire hydrology driven by high burn severity will increase risk of damage on 29 miles of system trails within moderate and high severity burn, with resulting loss of trail prism and waterbars. These are moderate-use level trails that access unique areas in the Selway-Bitterroot Wilderness Area that the West Fork Ranger District would like to keep for the long term. Post-fire hydrology will increase the occurance of surface runoff from burned slopes onto the trail prism. There is a high risk of intensive trail rutting and stream capture, which causes extensive damage to the trail prism if it occurs. Without treatment,concentrated flow diverrted down the trail tread may induce gully

cutting and reduce downstream water quality. Proactive treatment of fire-affected trail segments would be cheaper than remediation after damage. There is also a risk of falling hazard trees for trail workers implementing prescribed drainage and stabilization treatments

Native Plant Communities and Invasives - Details

The invasive plant species identified in the fire area listed on the Montana and Ravalli County Invasive Weeds List, Idaho statewide containment list, Idaho statewide control list, and/or Idaho County Cooperative Weed Management Area (CWMA) invasive list are shown in **Table 1**. Idaho lists are included as weed control in the Gold Pan Complex Fire area will be a coordinated effort with the Nez Perce- Clearwater NF.

Table 1: Invasive plant species present in the area burned by the Gold Pan Complex fire.

Target Invasive Weed Species with Potential to Colonize Burned Areas in the First Post-Fire Year	Montana and Ravalli County, MT Invasive List	Idaho Statewide containment list	Idaho Statewide control list	Idaho County, ID CWMA Invasive List
Spotted knapweed	X	X		X
Sulphur cinquefoil	X			X
Rush skeletonweed *	X	X		X
Hoary alyssum *	X	X		X
Canada thistle	X	X		X
Houndstongue	X	X		X
Common St. Johnswort	X			X
Dalmatian toadflax	X	X		X
Knotweed	X		X	X
Oxeye daisy *	X	X		X
Puncturevine	X			X

* denotes species of highest priority for first year post-fire detection and treatment for the Bitterroot NF

Much of the Selway River area on the Bitterroot NF burned by the Gold Pan Fire is relatively free of invasive weeds but is now highly susceptible to exotic plant invasion due to habitat types, exposure and fire disturbance frequency. Scattered infestations of spotted knapweed, sulfur cinquefoil, oxeye daisy and houndstongue are also present in intermittent pockets and along the trail system. These species are also poised for rapid expansion into fire disturbed sites.

The potential for establishment and spread of invasive plant species in the burn area is very high. The prevailing wind pattern (southwest) of the region is perfectly aligned to carry the windborne seeds of rush skeletonweed in a north/northeast direction and deposit them in the ideal seedbeds created by the fire. In addition, the fire consumed portions of the physical vegetative timber / shade and surface litter barriers that normally would reduce significantly the opportunities for germination of the invading rush seeds. Many known, mapped infestations that could serve as source areas are found within the fire perimeter along or near roads within the upwind areas of the Nez Perce - Clearwater NF.

There are, however, other vectors as well for weed seeds, including domestic cattle, wildlife species, wind and water. In the case of rush skeletonweed, wind is a primary vector. Another species, sulphur cinquefoil, is spread by rodents and small birds. Sulphur cinquefoil spreads rapidly and is highly competitive; it can even out-compete spotted knapweed and has no forage value to wild ungulates. These two species, rush skeletonweed and sulphur cinquefoil, have a very high potential for disrupting native plant community re-establishment in areas otherwise uninfested by noxious weeds.

The combination of known weed species' presence and invasive capabilities with the vulnerable post fire condition of the soil and vegetation resources puts the recovery of native plant communities within the burn area at a high risk.

Of significant importance is the potential loss of previous investments and gains (2010- 2013) in invasive/noxious weed monitoring and treatment made by the Chief's high priority Selway-Middle Fork Cooperative Forest Landscape Restoration Area initiative (CFLRA) that involves the Bitterroot and Nez-Clear National Forests.

Table 2 (below) displays the Risk Rating to invasion of native or naturalized communities by each of the weed species presently known to occur within the Gold Pan Complex fire area. Road stream crossing and Trail erosion risk within high and moderate severity burn is also included in Table 2.

Table 2. Risk Assessment for Gold Pan Complex

Probability of Damage or Loss	**Magnitude of Consequences**		
	Major	Moderate	Minor
	RISK		
Very Likely	Rush Skeletonweed, Sulphur Cinquefoil spread = **Very High**	Untreated Trail Erosion, Spotted Knapweed spread = **Very High**	Canada Thistle = **Low**
Likely	Houndstongue, Knotweed, Oxeye Daisy spread = **High**	Loss of road stream crossings, Common St. Johnswort, Hoary Alyssum = **High**	**Low**
Possible	Leafy Spurge, Puncturevine spread = **High**	Dalmatian Toadflax, Yellow Toadflax spread = **Intermediate**	Musk Thistle = **Low**
Unlikely	Diffuse Knapweed spread = **Intermediate**	Low	Henbane = **Very Low**

B. Emergency Treatment Objectives:

- **Reduce the threat of significant expansion of existing noxious weeds or invasion of new noxious weeds;Locate and treat new invasive plant species infestations during early stages of spread in ecologically sensitive burned areas in order to maintain the structure and function of the local ecosystem.**
- **Protect road and trail infrastructure from flood flows, debris torrents, and other potential events and maintain access;**
- **Protect trail workers from hazard trees.**
- **Inform the public of burned area hazards using trailhead signs.**

C. Probability of Completing Treatment Prior to Damaging Storm or Event:

Land **75** % Channel **NA** % Roads/Trails **80** % Protection/Safety **95** %

D. Probability of Treatment Success:

	Years after Treatment		
	1	3	5
Land			
Straw bale barrier	80	85	NA
Noxious weed treatment	80	75	70
Roads/Trails			
Road Culvert Cleaning	85	90	95
Road Culvert Installation	85	90	95
Drive-through dip installation	85	90	95
Trail Stabilization	85	90	95
Protection/Safety			
Trailhead Hazard Signs	95	85	80
Noxious weed monitoring	85	NA	NA

E. Cost of No-Action (Including Loss): See Cost-Risk Analysis and Matrix p. 12

F. Cost of Selected Alternative (Including Loss): See Cost-Risk Analysis and Matrix p. 12

G. Skills Represented on Burned-Area Survey Team:

[X] Hydrology	[X] Soils	[ ] Geology	[X] Range	[X] Invasive Species
[ ] Forestry	[ ] Wildlife	[ ] Fire Mgmt.	[ ] Engineering	[ ]
[ ] Contracting	[ ] Ecology	[ ] Botany	[X] Archaeology	[ ]
[X] Fisheries	[ ] Research	[ ] Landscape Arch	[X] GIS	

Team Leader: Ed Snook
Bitterroot National Forest
1801 N. 1st St, Hamilton, MT 59840

Email: esnook@fs.fed.us Phone: (406)363-7103 FAX: (406)363-7106

H. **Treatment Narrative:**

(Describe the emergency treatments, where and how they will be applied, and what they are intended to do. This information helps to determine qualifying treatments for the appropriate funding authorities. For seeding treatments, include species, application rates and species selection rationale.)

Land Treatments

Straw Bale Bale Barrier – LT-1

Objective:

The purpose of the treatment is to protect the historic Shop building at Magruder Ranger Station from overland flow originating in an uphill burned area. A flat area immediately above the shop presents an opportunity for a simple straw bale check dam stretching the length of the building. The purpose of the barrier would be to divert overland flow past the ends of the building.

Methods:

Flatten, clean up and trench ground with hand tools where appropriate to improve the fit between straw bales and the ground. Stake certified weed-free straw bales to the ground with wooden stakes. Extend slightly past the ends of the building so diverted flow reaches the parking lot.

Noxious Weeds Control/Treatment – LT-2

Objective:
The purpose of the treatment is to maintain ecosystem integrity within the Gold Pan Complex Fire Area (Selway River basin), where few noxious weed populations exist. Without treatment rush skeletonweed and other new invaders may spread into the severely burned areas. By reducing the amount of weed seed in the area, native species will have an opportunity to take advantage of the post-fire nutrient flush without competition from noxious weeds.

Methods:
As monitoring indicates, treat fire access road corridors that provide routes invasive weed species could use to expand into the severely burned areas with aminopyralid or Escort. Selected sites include spraying along routes including, but not limited to, Forest Roads 224 and 468 where road surface disturbance and heavy canopy loss has increased the risk of rush skeletonweed, knapweed and other species spreading into the burned area. Trails listed under trail treatments would also receive priority. Newly discovered infestations would receive a high priority for treatment under the EDRR strategy. Effects of herbicide treatments at the proposed rates using aminopyralid, clopyralid or picloram are addressed in the Bitterroot National Forest Noxious Weed Environmental Assessment, and all implemented treatments would be consistent with this document. New invaders and previously weed-free areas would be targeted.

The selection of herbicide, application rate, and time of application will be based on specific weeds being treated, access to the locations of areas where weeds may occur and plant phenology at the time of treatment. The application rates and spraying method would depend on the abundance of the target species, condition of non-target vegetation, soil type, depth to the water table, the distance to open water sources, riparian areas, special status plants, and requirements of the herbicide label. Applications would be scheduled and designed to minimize the potential impacts to non-target plants. Monitoring of treated sites would determine treatment efficacy and the need for follow-up treatments. Monitoring would identify whether treatment methods needed to be changed or if a more effective herbicide should be used. Proposed monitoring of treated sites will locate new infestations.

Channel Treatments: N/A

Road and Trail Treatments:

Clean Culverts – RT-1

Objective:
Removing debris from the inlets and outlets would let culverts function as designed and restore flow capacity. The purpose of this work is to decrease the risk that ditch relief and road stream crossings fail resulting in culvert washouts as well as ditch and road surface water flows being diverted down roadways causing washouts and adding sediment to downstream water bodies. Treatment aims to maintain access, improve road drainage and reduce potential for road prism erosion and high cost repairs.

Methods:
Culverts that are currently plugged or have catchments that are full or brushed in should be cleaned out to insure unobstructed flows. As soon as possible, culvert inlets and outlets would be brushed and cleaned by hand crew using chain saws, hand tools, and in some more difficult situations, with a rubber-tired backhoe.

Install Diversion Dips on Roads – RT-2

Objective:

FR468 has 4 stream and gully crossings currently identified for culvert replacement that have a high probability of being negatively affected by post-fire hydrology. The objective of diversion dips adjacent to these crossings is a low cost safeguard to prevent flood flows from running down the road if a culvert is plugged or overtopped. This is possible even with culvert upsizing, due to jamming of the culvert with woody debris or rock. One extra dip is proposed due to snow cover on the site hiding potential candidate sites during assessment. Treatments would reduce the risk of large road-origin sediment contributions during post-fire thunderstorms. Treatment aims to maintain access and reduce potential for road prism erosion and sediment to important fish habitat.

Methods:

At candidate sites, an armored drive-through dip and berm would be built immediately downgrade of the crossing to divert overtopping flows back into the channel. The upper and lower fills would be rip-rapped at the dip location to prevent downcutting and loss of the structure or road prism. The dips will need seeding of any newly disturbed ground.

Install Culverts - RT-3

Objective:

The purpose of the treatment is to reduce the risk that stream flows will overtop and wash out the road. This would cut off access and add sediment to Bull Trout and salmon habitat to downstream water bodies. Treatments, when combined with armored dips, also reduce potential for debris flow occurence. Sites were chosen based on the amount of high and moderate burn intensity in drainages above the roadways.

Methods:

Excavate existing pipes and install larger culverts at (3) indicated sites. Locally-sourced riprap will be placed at inlets or outlets to reduce risk of scour. Newly disturbed areas will be seeded, fertilized and mulched. Protect roads and crossings from flood flows, debris torrents, and other potential events. The upgraded crossings will also get diversion dips to improve probability of passing a debris flow. Hazard trees threatening workers and fallen trees blocking access would also be cut. The proposed 36" culvert installation near Kim Creek Saddle is at very remote site, located approximately 170 miles from Hamilton, MT, including a substantial length of low-grade native surfaces. Road fill on this site is substantial and will require an excavator be trucked to the site along with materials. These factors added to the engineer's estimate for the installation.

Stabilize Trail Prism – RT-4

Objective:

Approximately 29 miles of trail are within high and moderate burn severity and expected to be at risk of deterioration from additional runoff and sediment from post-fire conditions. The threats are from upland slope erosion and flow staying on the trail. The trails drainage system was not designed for the increased flow that may occur from the fire. This may cause soil erosion on the trail surface and fill-slope. Failure of burned water bars may cause stream capture onto trail surface area causing soil erosion, including loss of the trail by rills and gullying. Trails affected by high and moderate severity burn include: #'s 4.4, 8, 12, 13, 16, 26, 35, 36, 37, 62, 64, 65, 74, 89, 137, 614, 707 and 720. Please reference the trails treatment specification sheet for the fire for more information.

Methods:

To reduce risk, install water bars or outslope sections to direct and divert flow off the trail. Rebuild waterbar leadout ditches where necessary. Some trail segments may require tread stabilization to facilitate the proposed drainage structures. Rebuild puncheon section to protect wetland values. These treatments would reduce the risk of the trail washing out, stream capture and increased sediment to

streams. In most cases hazard trees around the work sites must be felled, and trails are cleared as the crews are horsepacked into remote camps. All work is done with primitive tools as per designated wilderness guidelines.

Protection/Safety Treatments:

Install Trail Warning Signs - PS-1

Objective:

Inform the public of potential post-fire risks to trail user safety. These include hazard trees, stump holes, eroded trail surfaces and unstable tread.

I. Monitoring Narrative:

(Describe the monitoring needs, what treatments will be monitored, how they will be monitored, and when monitoring will occur. A detailed monitoring plan must be submitted as a separate document to the Regional BAER coordinator.)

Noxious Weed Monitoring – M-1

Objective:

Monitor known and high potential infestation sites for noxious weed species in the burned area and determine need and extent of control treatment to be implemented. Monitor weed treatments results to ensure native plant community protection objectives are being met.

Methods :

During 2014, monitor effectiveness of the spraying and establishment of new weed populations. Perform Early Detection Rapid Response to locate new and known minor populations of invasive plant species' infestations during early stages of spread in ecologically sensitive areas in order to maintain the structure and function of the local ecosystem. Accurately map new populations using GPS and GIS. Establish photo plots for potential treatment. Monitor weed treatments results to ensure objectives are being met Accurately map any new populations using GPS. Establish photo plots for documentation as needed.

EDRR activities will begin at known weed infestations and then radiate out from these epicenters to detect, map and treat new infestations. Crews will be trained to recognize and look for new invaders as well that may have been vectored into the burn area by fire suppression crews. This approach served well for Salmon-Challis NF BAER efforts after the 2007 Clear Fire in lower Panther Creek, when an astute crew member found and reported infestations of salt cedar establishing in the riparian area along Clear Creek.

An Invasive Plant monitoring plan was developed and is available for review. Contact Ed Snook, BNF BAER Coordinator for a copy.

Part VI – Emergency Stabilization Treatments and Source of Funds **Interim # 1**

Line Items	Units	Unit Cost	# of Units	BAER $	Other $	# of units	Fed $	# of Units	Non Fed $	Total $
A. Land Treatments										
Straw bale barrier	each	2301	1	$2,301	$0		$0		$0	$2,301
Invasive weed treatme	acre	92	230	$21,160	$0		$0		$0	$21,160
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Land Treatments				$23,461	$0		$0		$0	$23,461
B. Channel Treatments										
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Channel Treat.				$0	$0		$0		$0	$0
C. Road and Trails										
Culvert Cleaning	each	1275	4	$5,100	$0		$0		$0	$5,100
Diversion Dips	each	1082	5	$5,410	$0		$0		$0	$5,410
Install culverts	each	18518	3	$55,554	$0		$0		$0	$55,554
Trail stabilization	mile	2224	29	$64,496	$0		$0		$0	$64,496
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Road & Trails				$130,560	$0		$0		$0	$130,560
D. Protection/Safety										
Trail Hazard Signs	each	100	3	$300	$0		$0		$0	$300
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Structures				$300	$0		$0		$0	$300
E. BAER Evaluation										
	each	7470	1	---	$7,470		$0		$0	$7,470
Insert new items above this line!				---	$0		$0		$0	$0
Subtotal Evaluation				---	$7,470		$0		$0	$7,470
F. Monitoring										
Invasive Weed Monitor	acre	10	350	$3,500	$0		$0		$0	$3,500
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Monitoring				$3,500	$0		$0		$0	$3,500
G. Totals				$157,821	$7,470		**$0**		**$0**	**$165,291**
Previously approved				$118,259						
Total for this request				**$39,562**						

PART VII - APPROVALS

1 _____
Forest Supervisor (signature) Date

2. _____ _____
Regional Forester (signature) Date

Attachement A:
Gold Pan Complex MT 2013
Cost/Risk Assessment

Part 1. Treatment Cost

Treatment	cost
1. Straw Bale Barrier	$2,301
2. Invasive Weed Treatments	$21,160
3. Culvert Cleaning	$5,100
4. Driveable Diversion Dips	$5,410
5. Install Culverts	$55,554
6. Stabilize Trails	$64,496
7. Trail Hazard Signs	$300
8. Invasive Weed Monitoring	$3,500
TOTAL COST	$157,821

Part 2. Probability of Rehabilitation Treatments Successfully Meeting EFR Objectives

Treatment	%
1. Straw Bale Barrier	80
2. Invasive Weed Treatments	80
3. Culvert Cleaning	85
4. Driveable Diversion Dips	85
5. Install Culverts	85
6. Stabilize Trails	85
7. Trail Hazard Signs	90
8. Invasive Weed Monitoring	85

Risk of Resource Value Loss or Damage
Identify the risk (high, medium, low, none or not applicable (NA)) of unacceptable impacts or loss of resources.
No Action- Treatments Not Implemented (check one)

Resource Value	None	Low	Mid	High
Human health and safety			X	
Plant communities at-risk from weed infestation				X
Native Plant community structure, function and composition				X
Aquatic community structure, function and composition			X	
Watershed integrity			X	
Heritage resources			X	
Threatened and Endangered Species (terrestrial)		X		
Threatened and Endangered Species (fish)			X	

Proposed Action - Treatments Successfully Implemented (check one)

Resource Value	None	Low	Mid	High
Human health and safety		X		
Plant communities at-risk from weed infestation			X	
Plant community (PIPO; PIMO) structure, function and composition			X	
Aquatic community structure, function and composition			X	
Watershed integrity			X	
Heritage resources		X		
Threatened and Endangered Species (terrestrial)		X		
Threatened and Endangered Species (fish)			X	

Part 3. SUMMARY

1. **Are the risks to natural resources and private property <u>acceptable</u> as a result of the fire if the following actions are taken?**

Proposed Action Yes |_**X**_| No |__| Rationale for answer:
The proposed straw bale dam is likely to be effective for the dispersed (non-channelized) flows that may come off the burned area above the historic Magruder Ranger Station Shop building. This is a relatively inexpensive treatment to prevent damage to an old, wooden structure.

Major weed invasions can be avoided through early detection, treatment, and monitoring. Several species that exist in the upwind areas of Idaho (Rush Skeletonweed, Dalmation Toadflax, others – see narrative above) are not present within the Gold Pan Complex burned area and have the potential to disrupt and replace currently intact native plant communities. Road and trail systems within the burn area are potential corridors of invasion, and can be effectively monitored and treated.

The engineering/road drainage treatments (culvert replacement/repair, armored dips, culvert cleaning, crossing stabilization, storm patrol, etc.) proposed are effective in stabilizing roads to pass flood events while reducing risks to water quality and important fisheries/aquatic habitat. The engineering treatments will be effective for stabilizing crossings in order to pass increased water and debris flows.

The trail stabilization treatments (trail waterbars, leadout ditches, tread reconstruction) proposed are effective in improving trail resistance against post-fire hydrology. Many native log waterbars have been burned to the point of failure. The treatments will be effective in draining surface flows off of trail prisms, reducing trail incision and potential for stream capture. Incised trails have proven to be almost impossible to recover or restore, and trail waterbars have proven effective in reducing trail erosion, stream capture, and incision. The trails are an integral part of the Selway-Bitterroot and Frank Church River of No Return Wilderness Areas and the public's experience.

No Action Yes |__| No |_**X**_| Rationale for answer:
Restoring a historic building according to guidelines is an expensive process. It is better to invest a small amount in prevention, with a high chance of success, than to not treat and have building damage.

Large areas of native plant communities would be subject to non-native invasive plant expansion into the burned area while native plants are recovering from the fire. Without emergency funding, weed detection and treatment would be severly compromised, creating a high risk that new invasive species would become established in roadless and designated Wilderness areas prior to control funding obtainment through normal channels.

There is a higher probability of culvert and road prism failure on FR468 and FR224 if no action is taken, creating a need for expensive repairs including hauling of fill from off-site to replace that lost at larger creek crossings. FR224 is built on high-angle slopes, which increases costs of repairs.

There is a high probability of trail prism failure in high and moderate burn severity areas if no action is taken, creating a need for expensive repairs including hauling of fill from off-site to replace that lost during hydrologic events. Trails within the fire perimeter are a valued recreational resource (and economic resource for permitted outfitters) and would be subject to post-fire hydrology and erosion without treatment. Incised trails often require either extensive work or relocation to be functional and meet USFS standards, so proactive trail drainage work would save funding in the long run. Relocating trails in Wilderness settings is also problematic.

The areas selected for treatment have a high risk of negative impacts to soil, water, fisheries/aquatic, trails/recreation and vegetation resources.

Alternative(s) Yes |__| No |__| Rationale for answer:
N/A

2. Is the probability of success of the proposed action, alternatives or no action acceptable given their

costs?

Proposed Action Yes |_**X**_| No |__| Rationale for answer:
The straw bale barrier proposed to protect the Magruder Ranger Station Shop is an inexpensive treatment and has a good chance of diverting the expected low to moderate flow coming from uphill areas.

The probability for invasion of weed species not currently found in the Gold Pan Complex fire area will be substantially reduced with the availability of emergency funding to support monitoring and treatment of new invaders.

The engineering or road treatments will be effective for stabilizing crossings in order to pass increased water and debris flows, and reducing the probability that one of these important roads would be closed.

The potential for surface flow and stream capture on trails will be greatly reduced with the repair of burned waterbars within fire-affected slopes. With trail erosion and stream capture reduced, more expensive repairs can be avoided in the long term.

Burned area hazard signs effectively and cheaply provide information to travelers unfamiliar with the risks associated with burned areas.

The beneficial results of treatment implementation are worth the monetary costs of installation.

No Action Yes |__| No |_**X**_| Rationale for answer:
Not building a straw flow diversion barrier saves money in the short term but provides no protection to an historic building that would take substantial funds to retain its cultural values. The no-action alternative would increase risk of damage to this structure.

Although the monetary cost of no action is low, weed invasion will produce long-term ecological costs. Risk of several new, aggressive noxious/invasive weed species establishing themselves in the burned area is increased without emergency treatment and monitoring funds, which would increase ecological damage and weed control costs in the future.

Road damage and loss of access to the Hells Half Acre Lookout, several important trailhead and a permitted outfitter camp would most likely result in a repair project that would be more expensive than the proposed engineering/road treatment activities.

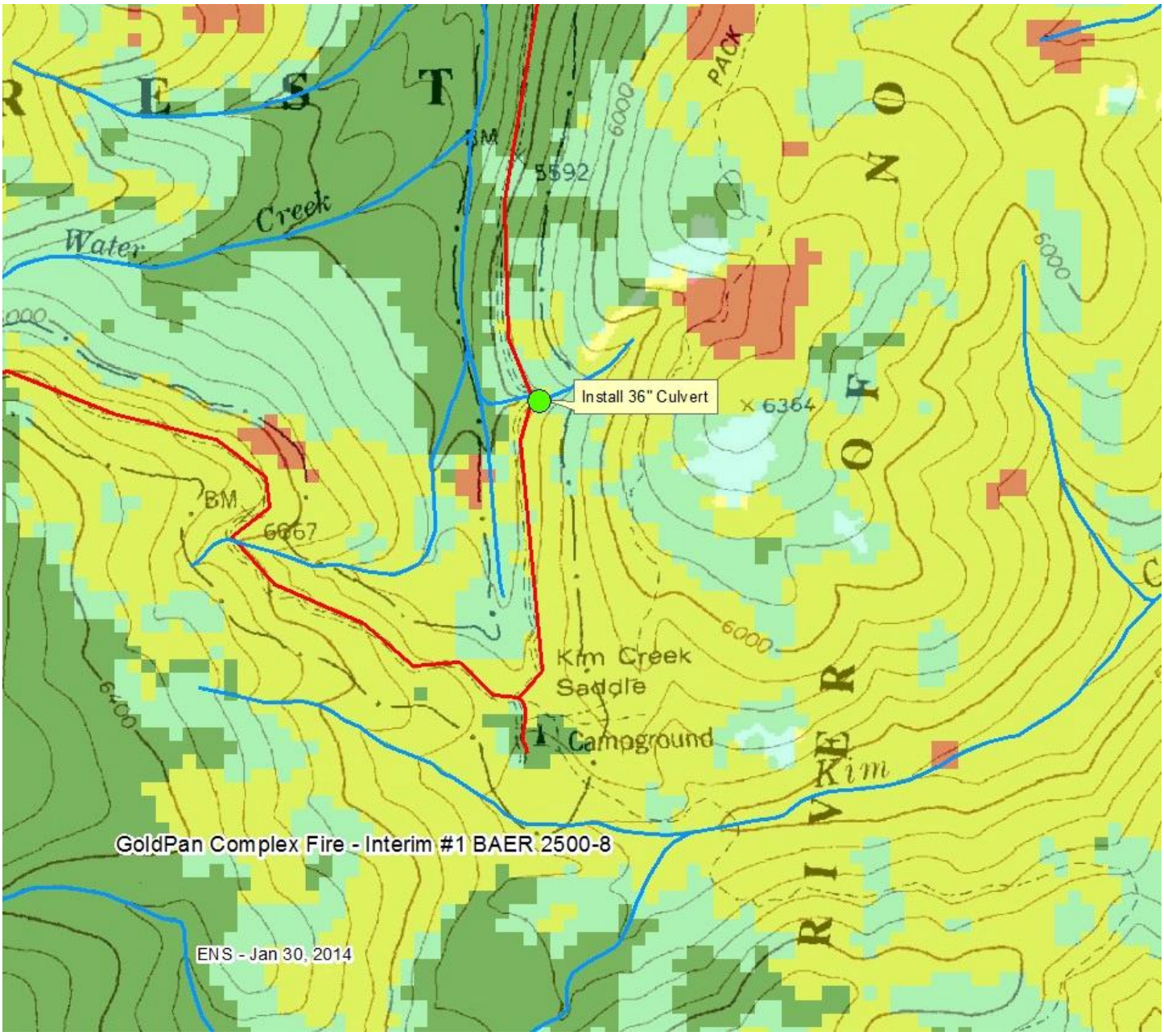
Trail degredation by post-fire hydrology is likely without treatments, and since the Ranger District plans on keeping the trail segments proposed for treatment open, more expensive repairs would likely be needed later.

Trail hazard warning signs are inexpensive and can provide important information to trail users unfamiliar with fire effects.

Alternative(s) Yes |__| No |__| Rationale for answer:
N/A

3. Which approach will most cost-effectively and successfully attain the EFR objectives and therefore is recommended for implementation from a Cost/Risk Analysis standpoint?
Proposed Action |_**X**_|, Alternative(s) |__|, or No Action |__|

Comments:



36” Culvert Installation – location and burn severity
Road is FR468, Magruder-Elk City Road, Idaho portion of Bitterroot National Forest.