

Date of Initial Report: August 14, 2003

Edits – J.Bruggink: August 17, 2003

Date of Interim Report: January 21, 2004

BURNED-AREA REPORT

(Reference FSH 2509.13)

PART I - TYPE OF REQUEST

A. Type of Report

☒ 1. Funding request for estimated WFSU-SULT funds

☒ 2. Accomplishment Report

☐ 3. No Treatment Recommendation

B. Type of Action

☐ 1. Initial Request (Best estimate of funds needed to complete eligible rehabilitation measures)

☒ 2. Interim Report

☒ Updating the initial funding request based on more accurate site data or design analysis

☒ Status of accomplishments to date

☐ 3. Final Report (Following completion of work)

PART II - BURNED-AREA DESCRIPTION

A. Fire Name: Hot Creek

B. Fire Number: P41942

C. State: ID

D. County: Elmore

E. Region: 4

F. Forest: Boise

G. District: Idaho City

H. Date Fire Started: July 19, 2003

I. Date Fire Contained: August 7, 2003

J. Suppression Cost: \$9,000,000

K. Fire Suppression Damages Repaired with Suppression Funds

1. Fireline waterbarred (miles): 47.34 miles

2. Fireline seeded (miles): 0.53

3. Other (identify): Green Valley Ranch and Atlanta Airstrip

L. Watershed Number: 1705011107

M. Total Acres Burned: 26,490

NFS Acres (26,430) Other Federal (0) State (0) Private (60)

N. Vegetation Types: Warm Dry Subalpine Fir, High Elevation Subalpine Fir, Cool Moist Douglas-fir, other Douglas-fir types, non-forest grass or shrub types.

O. Dominant Soils: Sandy loamy

P. Geologic Types: Idaho Batholith granitics

Q. Miles of Stream Channels by Order or Class:
Order 1: Order 2: Order 4:

R. Transportation System
Trails: 20.5 miles Roads: 19.1 miles

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 5,725 low 11,089 moderate 5,411 high

B. Water-Repellent Soil (acres): 14,922

C. Soil Erosion Hazard Rating (acres):
15,667 (low) 1,469 (moderate) 9,354 (high)

D. Erosion Potential: 1.46 tons/acre

E. Sediment Potential: 202 cubic yards/square mile

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years): 2-5

B. Design Chance of Success, (percent): 49

C. Equivalent Design Recurrence Interval, (years): 5

D. Design Storm Duration, (hours): 0.25

E. Design Storm Magnitude, (inches): 0.41 (based on 8/10/2003 event)

F. Design Flow, (cubic feet / second/ square mile): 17.0

G. Estimated Reduction in Infiltration, (percent): 35

H. Adjusted Design Flow, (cfs per square mile): 23

PART V - SUMMARY OF ANALYSIS

A. Describe Watershed Emergency:

The Hot Creek Fire ignited on July 19 as a result of a lightning strike near Hot Creek and has burned about 26,560 acres. The fire resulted in a severe watershed disturbance within the Middle Fork Boise River (MFBR) drainage. The BAER team has focused on five issues identified through field reconnaissance and our experience with the previous Trail Creek Fire. These issues include travel routes, safe travel during storms, road drainage, cultural sites, fisheries, and soil productivity. The most immediate emergency is the risk of loss to the two transportation routes into Atlanta. There is a very real emergency in protecting the life of individuals traveling to and from Atlanta. Atlanta, Idaho has only two transportation routes (James Creek and MFBR) in the summer months and travel is limited to only one of these routes (MFBR) during the winter months.

This concern became very real on Sunday, August 3rd when four major drainages, Bear Creek, Lake Creek, Steel Creek, and Black Warrior Creek received above average rainfall. This rainfall event caused debris flows damming or rerouting the MFBR in three locations below Bear Creek, Lake Creek, and Steel Creek. These debris flows also blocked access to the town of Atlanta via the MFBR route leaving only the one alternate route through James Creek. The James Creek route is of a location and grade that holds a very high risk to being closed by future precipitation and runoff events. Individuals traveling on this route during a storm event are exposed to serious risk for a time period up to 40 minutes long. This route also does not support vehicles much larger than pickups and has a bridge that only supports 8 tons with 3 axles. Because of the road grade being at or below stream channel level in several locations, the James Creek road is expected to experience event-caused closures frequently in the next few years. Due to the rainfall event and associated debris flows closing the MFBR road during the fire it is evident that there is also a very real risk that at any given time, one of these transportation routes will be closed. The following list of treatments serves as a cost-effective prevention or mitigation of the emergencies identified, however, the size and duration of storms above the area could still initiate events that cannot be managed with treatments.

Summary of Issues

- Potential threats to human life and property downstream of the Hot Creek Fire from potential increases in storm flow runoff, flooding and debris flows.
- Threats to transportation routes into Atlanta.
- Ability of existing drainage structures to pass flood and debris flows, leading to failures, plugging, and detrimental downstream effects to water quality and fisheries.
- Concerns to Federally listed bull trout populations downstream due to undersized culverts not allowing fish passage and dispersal of fish during future flood or debris flow events.
- Noxious weeds were found to occur extensively within and near the burned area, which will create a high potential for further invasion, by these species.
- Potential increased erosion and subsequent loss of soil productivity.

- Cultural sites that have been identified for the National register are located in areas that may be subject to excessive increases in erosion.
- BAER cannot design treatments to protect against all scales of flood and debris flow events.

B. Emergency Treatment Objectives:

- Protect the lives and property of the inhabitants of Atlanta, Idaho.
- Locate and stabilize, where feasible, severely burned slopes that pose a direct threat to human life, property, or critically important cultural and natural resources.
- Invasive plant species readily out compete native species following a burn; therefore, it will be necessary work to prevent this from occurring.
- Recommend post-fire rehabilitation prescriptions that prevent irreversible loss of natural and cultural resources.
- Conduct immediate post-burn reconnaissance for fire related impacts to threatened and endangered (T&E) species, related habitat, and cultural sites.
- Provide monitoring recommendations intended to ensure the success of rehabilitation efforts.

C. Probability of Completing Treatment Prior to First Major Damage-Producing Storm:

Land: 80% Channel: 50% Roads: 80% Other: NA
The fire has already received a damage-producing storm. These estimates represent probability from this point forward.

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land	60	70	80
Channel	0	80	80
Roads	80	85	90
Other	NA	NA	NA

E. Cost of No-Action (Including Loss): \$3,000,000

F. Cost of Selected Alternative (Including Loss): \$1,433,087

G. Skills Represented on Burned-Area Survey Team:

<input checked="" type="checkbox"/> Hydrology	<input checked="" type="checkbox"/> Soils	<input checked="" type="checkbox"/> Geology	<input checked="" type="checkbox"/> Range
<input type="checkbox"/> Forestry	<input checked="" type="checkbox"/> Wildlife	<input type="checkbox"/> Fire Mgmt.	<input checked="" type="checkbox"/> Engineering
<input type="checkbox"/> Contracting	<input type="checkbox"/> Ecology	<input checked="" type="checkbox"/> Botany	<input checked="" type="checkbox"/> Archaeology
<input checked="" type="checkbox"/> Fisheries	<input checked="" type="checkbox"/> Research	<input type="checkbox"/> Landscape Arch	<input checked="" type="checkbox"/> GIS

Team Leader: TJ Clifford

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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:

1. Straw Mulch/Flowcheck

Description: Straw mulch is applied to the ground by hand as a continuous cover to replace ground cover lost in the fire. Flow Checks are installed in designated portions of the watershed to reduce soil erosion.

Location (Suitable) Sites: Slopes along the James Creek road with High Severity burns (refer to Watershed Map).

Design/Construction Specifications:

Straw Mulch Site Selection: Suitable sites are designated on the BAER Watershed

Treatment map and in the field by either watershed or operations staff. Treat 430 acres by hand and helicopter mulching:

1. Slopes between 0 to 60 percent,
2. Where needle cast is not expected.
3. Type of straw: Straw must conform to Idaho State Department of Agriculture (ISDA) Certified Noxious Weed Free Standards. Suitable straw includes barley, rice, and wheat grasses. The straw should be dry for easier application.
4. Application: The rate of application is determined by qualified individuals who have been trained in the principles of BAER treatments. Application rate will be 1.0 ton/acre (2,000 pounds) and applied as a continuous cover. This is about 35-40 straw bales per acre, spread one-quarter inch deep, if evenly distributed (approximately three straw shafts deep).
5. Storage: The straw bales should be delivered early to the staging area and kept dry. This may require use of canvas tarps or plastic covers to protect from precipitation and condensation. Special ground support and equipment needs: straw bales can vary from 50-80 pounds in weight. For small bales a loading crew of 20 people can be used to help load cargo nets.

Flow Checks

1. Site Selection: Suitable sites are designated on the BAER Watershed Treatment Map and in the field by either watershed or operations staff.
2. Installation: Design is determined by qualified individuals who have been trained in the principles of BAER treatments.

Purpose of Treatment:

The intent of the straw mulch is to stabilize the steep slopes above James Creek road by replacing the natural ground cover consumed by the fire. In addition to providing immediate soil protection from erosion and loss of nutrient capital, and the associated sediment deposition in streams, mulching also helps reduce downstream peak flows by absorbing and slowly releasing accelerated overland runoff due to bare soil, hydrophobic soils and compacted soils. Mulching even small areas at the source of floodwaters, and other areas critical to slope stabilization, can often protect much larger downstream areas from the cumulative effects of hill slope runoff. Mulching also helps to secure seeds that are either stored in the soil, or applied as an emergency treatment, that may otherwise be eroded off-site and maintains a favorable moisture and temperature regime for seed germination and growth.

The purpose of the Flow Checks is to stabilize the lower slopes above James Creek road. The structures are intended to control excessive erosion and keep detached soils from leaving the hillsides by: (1) slowing down overland flow allowing for increased infiltration, (2) preventing mobilization of soil particles, and (3) trapping sediment so it does not result in downslope damage.

Treatment Effectiveness Monitoring: Visually inspect effectiveness of treatments and repair as needed.

2. Cultural Site Protection

Description: Emergency stabilization is necessary to minimize impacts to at-risk cultural resources on site BS-1384.

Location (Suitable) Sites: BS-1384 is located on both sides of the James Creek Road approximately 5 miles from the James Creek road/MFBR road intersection. As recorded, the site boundary encompasses a total area of 2 acres. Treatments are proposed on a total of approximately 1 acre of the site. Straw mulch will be spread on the upslope side of the James Creek road between the intermittent drainage and the James Creek road. A trash rack will be installed in the permanent stream channel above its confluence with the intermittent drainage. Water routing structures will be placed along the downslope edge of the intermittent drainage. A backhoe or excavator will be used to rip and place riprap for a barricade on the upper and lower portions of the dispersed recreation road. See attached site map for specific locations.

Design/Construction Specifications:

Straw Mulch

1. Site selection: Straw mulch application is proposed for the area of the site located on slopes above the James Creek road (especially adjacent to the structure remains). The dispersed recreation road should also include straw mulch after the road treatments are implemented (see Design/Construction Specifications 8).
2. Straw must conform to Idaho State Department of Agriculture Certified Noxious Weed-Free Standards.

3. Type of Straw: Suitable straw includes barley, rice, and wheat. Size of bales must be such that employees do not suffer injury from handling the bales, usually 50-80 pounds.
4. Application of Straw: The rate of application is approximately 2,000 pounds per acre. This is about 35-40 bales per acre, spread one-quarter inch deep.

Trash Rack

1. Install steel or locally constructed trash rack to catch any moving debris in permanent stream channel above its confluence with the intermittent drainage.

Routing Water Off-site

1. Route water off west half of site using logs, straw bales, wattles, or other structure. Routing structures should be placed along the downslope edge of the intermittent drainage.

Ripping

1. A backhoe will be used to rip the lower portion of dispersed recreation road. Ripping should occur to a depth of no more than 4-6" below surface and should be completed within the compacted width of the dispersed recreation road.

Barricading Dispersed Road

1. A backhoe or excavator will be used to place riprap for a barricade on the upper and lower portions of the dispersed road. A total of seven Class 5 riprap should be used with three boulders placed at the top of the dispersed recreation road and 4 boulders placed at the bottom of the dispersed recreation road where it joins the James Creek road¹. Riprap will consist of local material that occurs within a 2-mile radius of the site and approved by a Forest Service technician. Riprap must be brought to the site with the backhoe or truck. Riprap should be placed as to not allow dispersed ORV or 4X4 traffic to use the repaired road.

Purpose of Treatment: The purpose of the straw mulch is to replace only the natural Ground Cover Density (GCD) that was consumed by the fire. Straw will effectively control overland runoff resulting from increased bare soil. The purpose of the trash rack is to catch any moving debris in permanent stream channel above its confluence with the intermittent drainage. If large amounts of debris make it to the culvert where the stream crosses the James Creek road, the culvert has the potential to fail causing numerous impacts to the archaeological site including the loss of at-risk structure remains and subsurface cultural deposits. The purpose of routing the water off of the west half of the site is to prevent water from the intermittent drainage and hillside to further erode the site, resulting in the potential loss of at-risk subsurface cultural deposits. A small surface wetland area is located between the intermittent drainage and the James Creek road on the upslope side of known cultural deposits. The purpose of ripping is to prevent gullying in the dispersed road area that is likely to occur now that GCD has been consumed by fire. Gullying will potentially result in the loss of at-risk subsurface cultural deposits. The purpose of barricading the upper and lower portions of the dispersed roads is to prevent further use within the dispersed recreation road area. The resulting gullies will potentially result in the loss of at-risk subsurface cultural deposits.

Treatment Effectiveness Monitoring: Visually inspect effectiveness of treatments and repair as needed. In addition, implementation work will be monitored to inform workers of possible impacts to the archaeological site, and to look for impacts to subsurface cultural deposits by the use of the backhoe.

3. Weed Treatment

Description: When monitoring actions are initiated, Forest or CWMA personnel will be equipped to immediately treat new infestations of noxious weeds. For example, monitoring of roads, trails, fire line, etc., will be conducted by personnel with ATV mounted herbicide application equipment, horse mounted application equipment or backpack sprayers. This allows for the immediate treatment and eradication of new infestations as they are discovered. BAER funding authorization will be used for the 1st three years. Existing infestations will also be treated as prescribed by CWMA plans at the same time. As appropriate, these actions may be carried out under a combination of BAER and other management authorities. Initial treatment supplies would be funded with program dollars until monitoring (funded through BAER) indicates the actual treatment need resulting from the fire. This will allow for more accurate cost tracking for treatments required as part of BAER through fund code reimbursement. This treatment will be split and tracked between actions on sites disturbed by suppression activities and actions on sites appropriate under BAER authorities. Treatment and monitoring activities occurring after the first three years following the fire will be carried out under non-BAER authorizations.

Location (Suitable) Sites: Existing and new infestations within the burned areas.

Design/Construction Specifications: Select herbicide, application rate, and application timing based on specific weed being treated and access to the location of the infestation

Purpose of Treatment: Prevent establishment of new infestations, prevent spread of existing infestations, prevent increase in weed density in existing infestation.

Treatment Effectiveness Monitoring: Monitor location, size and density of infestations following treatments.

4. Road and Trail Weed Prevention Treatment

Description: A 20-foot swath along each side of 0.2 mile of roads and 6.2 miles of trails that are within high severity burn areas will be aerially or ground broadcast seeded to establish sufficient vegetative ground cover sufficient to minimize the potential for noxious weed establishment. The seed mix and application rates will be the same as those prescribed for soil stabilization in the burned area. Costs were based on an actual seed mix applied within the Trail Creek Fire and includes Mountain Brome *Bromus Marginatus Bromar* at a rate of 12.5 pls lb./acre and Thickspike Wheatgrass *Elymus lanceolatus ssp. Dasystachyum Critana* at a rate of 12.5 pls lb./acre. Preference will be given to native seed selection where available and cost effective. Seed will be required to be tested for pure live seed and noxious weed seed content. Contract specifications will require that the seed mix be relatively free of any noxious weed species included on the Federal Noxious Weed List or designated as noxious by States in the Intermountain Region. Seed mixes will be sampled and sent to the Idaho Seed Lab to verify that seed from these noxious weed species are not present (certified weed-free to an acceptable standard identified by Forest Service representative) in the seed mix. Seed will be aerially or ground broadcast and should be applied just prior to or shortly after the 1st persistent snowfall to promote good germination the following spring. This should equate to a late October or an early November application.

Location (Suitable) Sites: Roads and trails within the burned area in high severity burned areas.

Design/Construction Specifications: Use same seed mix prescribed for slope stabilization

Purpose of Treatment: Ensure that areas with highest potential for weed invasion in the burned area and on disturbed sites are managed to provide vegetative cover sufficient to reduce the potential for invasion of non-native invasive plants.

Treatment Effectiveness Monitoring: Monitor post-fire and presence of non-native invasive plant species

Channel Treatments:

5. Culvert Replacement

Description:

1. Preconstruction and construction engineering for survey, design and contract administration. The survey and design will identify the minimum measures necessary to protect both the road facility and the Federally listed (threatened) bull trout from increased runoff (debris flows and/or flooding).
2. Construction of Bottomless Arches or large culverts that:
 - a. Process increased streamflow as a result of the burn,
 - b. Provide passage of all life stages of bull trout at all flows,
 - c. Provide a long-term solution to an immediate emergency, and
 - d. Provide routes for bull trout to disperse quickly during debris flow/flooding events within and downstream from the burned area.
3. Ensure that maintenance agreements reflect any changes to the road template or drainage structures.
4. REQUEST FOR FUNDING IS BEING SOUGHT BY HIGHWAY DISTRICTS AND OTHER COOPERATORS IN PARTNERSHIP WITH FOREST SERVICE.

Location (Suitable) Sites: A total of four culverts where the MFBR road (FR 268) crosses Eagle Creek, Snyder Creek, Steppe Creek, and Smith Creek.

Design/Construction Specifications:

1. Survey, design and contract administration by A&E Consulting Contractors
2. Forest Service Specifications for Construction of Roads and Bridges

Purpose of Treatment:

1. To increase capacity to pass expected increases in streamflow, especially during those events that include large amounts of bedload and debris.
2. An additional benefit of this treatment includes the improvement of fish passage by providing connectivity to suitable dispersal habitat for Federally listed (threatened) bull trout and other fish displaced by the Hot Creek Fire and associated debris flows.

Treatment Effectiveness Monitoring: Culvert surveys after storm events and fisheries studies.

6. Rock Vanes

Description: This treatment is recommended for [Atlanta Highway Dept.] application on the MFBR road (FR 268) to protect road fill slopes, and maintain/enhance pool habitats in the MFBR that were affected by post-fire debris torrents and associated road reconstruction. Construct sets of three or more rock vanes at several sites where meanders of the MFBR are immediately adjacent to road fill slopes on the MFBR road (FR 268) between Black Warrior Creek and Bald Mountain Creek. REQUEST FOR FUNDING IS BEING SOUGHT BY HIGHWAY DISTRICTS AND OTHER COOPERATORS.

Location (Suitable) Sites: In reaches of the MFBR where stream meanders are immediately adjacent to fill slopes along the MFBR road (FR 268) between Black Warrior Creek and Bald Mountain Creek. Limit construction to sites where stream energy is directed into the road fill slope.

Design/Construction Specifications:

1. The Boise NF and Atlanta Highway Department will identify approximately six sites along the MFBR road (FR 268) between Black Warrior Creek and Bald Mountain Creek where stream meanders are immediately adjacent to road fill slopes.
2. Construct sets of three vanes spaced approximately 30 feet apart at each of the sites that Boise NF and Atlanta Highway Department identify on the MFBR road (FR 268) using the following procedure:
 - a. Excavate a trench 4 feet deep by 6 feet wide extending from one-third of the way across the active channel to a point 6 feet into the bank. The trench should be oriented upstream at a 20-30° angle to the bank.
 - b. Construct the vanes with an excavator, using class 5 riprap. Layer the entire length of the trench with class 5 riprap, such that the stack is widest (three across) at the bottom and forms a triangle in cross section.
 - c. The top of the vane must slope downward from the bank into the channel at a 4-10 percent gradient from 1 foot above bankfull elevation. The top of the vane should be approximately 1 foot above the bankfull elevation at the end that is keyed into the bank, and 6 inches above the streambed where it terminates in the channel.
 - d. A hydrologist and fisheries biologist must be present for implementation.

Purpose of Treatment: These structures are designed reduce hydrologic stress in the near-bank region by redirecting stream energy from the outside edge of meanders to the central part of the channel. This treatment will also improve fish habitat by scouring deep pools in the central part of the channel downstream from each vane.

Roads and Trail Treatments:

7. Culvert Cleaning

Description: Culverts that are in areas at risk to flooding and/or debris flows should be cleaned in year 2003 and monitor culverts for additional cleaning needs in 2004 to ensure maximum flow capacity. Treatment in 2004 will be implemented through an interim request for additional funding when culverts are found to require further cleaning to

restore proper function. Subsequent to flood events culverts should be inspected and if necessary re-cleaned.

Location (Suitable) Sites:

1. Atlanta Highway District – MFBR road FS road 268,
2. Mountain Home Highway District - James Creek FS road #126, .
3. Forest Service - Black Warrior FS road 210, Hot Creek FS road 241, Hot Creek spur a FS road 241a, and Hot Creek spur b FS road 241b

Design/Construction Specifications:

1. Mechanically shovel and flush debris from culverts and place outside of channel where it cannot re-enter stream channels.
2. Use backhoe and dump truck to remove debris and fill from channel and around culvert. Use water tender and/or fire engine to flush any debris out of culverts.
3. Manually remove woody debris around catchbasin and in channel upstream from culvert.

Purpose of Treatment: To maximize culvert and channel capacity to handle flood flows and protect roadbeds.

Treatment Effectiveness Monitoring: Visually inspect each culvert in flood prone areas subsequent to major rain events and clean those blocked.

8. Culvert Removal

Description: Use explosives to remove culvert on the brushed in 241A road.

Location (Suitable) Sites: Forest Service Road 241A.

Design/Construction Specifications: Idaho City Ranger District blasting services to remove culvert from perennial stream. Blasting will be performed by qualified, certified personnel.

Purpose of Treatment: This particular culvert is in a portion of road that is not drivable due to brush and template, however, a culvert still exists within the template that crosses a perennial stream. To remove a culvert that has a very high potential for becoming blocked by debris conveyed by flood and/or debris flows. These blockages cause floodwaters to leave the channel and go around or over the drainage structure, thereby increasing flooding, and creating damage to the transportation system.

9. Road Drainage Improvement

Description: Blade the road to restore the original template driven down by fire traffic, clean out ditches and remove berms. Construct Drivable Dips 50 feet down the road and down slope from CMP's, construct waterbars at locations designated on the roadway by district engineers

Location (Suitable) Sites:

Drivable Dips

- Forest Service - Second 3.1 mile section of the Hot Creek road FS 241

Waterbars

- Forest Service - Forest Service road numbers 241a and 241b

Roads and Ditches

- Atlanta Highway District - MFBR FS road 268
- Mountain Home Highway District – James Creek FS road 126

- Forest Service – Black Warrior FS road 210, Hot Creek FS road 241, Hot Creek spur FS road 241a, and Hot Creek spur FS road 241b

Design/Construction Specifications:

Driveable Dips

1. At drain dip locations, centered at the hydraulic bottom of the dip, place seven certified weed free straw bales placed end to end and held in place by two number 5 rebar stakes per bale, the stakes shall be driven into the ground a minimum of 0.3 meters and shall be driven between 10 and 75 millimeters below the top surface of the bale.
2. The hydraulic bottom of the drain dip shall be 300 mm (minimum) below the original grade line on the downhill slope of the road template on the roadfill shoulder. The hydraulic bottom of the drain dip shall be 150 mm (minimum) below the original grade line on the downhill slope of the road template on the upper roadbank of the road template. Total length of the drain dips shall be 12 meters.

Waterbars

1. Waterbars shall slope diagonally out and downgrade at a minimum angle of 60 degrees with the centerline of the road. The waterbar shall be tied securely to the upper bank and shall be cut as follows.
 - a. For road grades from 0 to 6 percent, 75mm deep at the upper roadbank and sloped to a depth of at least 150mm on the road fill shoulder.
 - b. For road grades over 6 percent, 150 mm deep at the upper roadbank and sloped to a depth of at least 300mm on the road fill shoulder.
 - c. The waterbar outfall shall be clear of material so that no dike or barrier is formed that could restrict drainage.

Roads and Ditches

1. Blade and shape the existing traveled way, shoulders and ditches, including turnouts, to remove minor surface irregularities and debris. Maintain the existing cross slope or crown. Establish a blading pattern that will retain the surfacing on the roadbed and provide a thorough mixing of the materials within the completed surface width.

Purpose of Treatment: To control water flows that exceed CMP's, restore the road template drainage and the ability of the entire road system within the fire to process the expected increased runoff.

10. Evaluate James Creek Road Engineering Assessment

Description: Contract Professional Engineering firm to evaluate James Creek road drainage structures and assess the feasibility of elevating the road grade, and road relocation. REQUEST FOR FUNDING IS BEING SOUGHT BY HIGHWAY DISTRICTS AND OTHER COOPERATORS.

Location (Suitable) Sites: James Creek FS road 126

Design/Construction Specifications: To provide Civil Engineering and Hydrological services to evaluate drainage structures and new road alignment

Purpose of Treatment: Improve road drainage and ability to process increased runoff.

Treatment Effectiveness Monitoring: Annual Road condition survey's conducted by Idaho City Ranger District Engineering.

11. Evaluate MFBR road Engineering Assessment

Description: Contract Professional Engineering firm to evaluate James Creek road drainage structures and assess the feasibility of elevating the road grade, and road relocation. REQUEST FOR FUNDING IS BEING SOUGHT BY HIGHWAY DISTRICTS AND OTHER COOPERATORS.

Location (Suitable) Sites: MFBR FS road 268

Design/Construction Specifications: To provide Civil Engineering and Hydrological services to evaluate drainage structures and new road alignment

Purpose of Treatment: Improve road drainage and ability to process increased runoff.

Treatment Effectiveness Monitoring: Annual Road condition survey's conducted by Idaho City Ranger District Engineering.

12. Trash Rack

Description: Complete site-specific designs for placement of up to 69 trash racks to protect culvert inlets at recommended locations

Location (Suitable) Sites: Forest Service Roads 126, 210, 241, 241A, 241B, and 268.

Design/Construction Specifications:

1. Provide Idaho City Ranger District civil engineering services to evaluate recommend debris racks locations and complete construction designs including specifications, cost estimates, construction diagrams, and drawings.
2. Provide civil engineering services for contract oversight of debris rack construction and installation.

Purpose of Treatment: To design trash racks that will reduce the possibility of debris to plug culverts and to oversee installation. To prevent culverts and bridges from becoming blocked by debris conveyed by flood and/or debris flows. These blockages cause flooding water to leave the channel and go around or over the drainage structure, thereby increasing flooding, and creating damage the transportation system.

Treatment Effectiveness Monitoring: Visually inspect debris racks subsequent to flood events and make any necessary improvements.

Structures:

13. Early Warning System

Description:

1. Install automated flashing light signs, to warn travelers on MFBR road and on the James Creek road, that can be activated remotely when the National Weather Service (NWS) issues severe weather warnings that could result in flood events from burned areas within the Hot Creek fire.
2. The attached public safety signs were developed for immediate installation along the MFBR road and the James Creek road that are likely to sustain damage from flooding and mudflows generated from the Hot Creek Fire.

Location (Suitable) Sites:

1. The flashing signs would be located at the intersections of Phifer and Swanholm Creeks, the Yuba River Bridge in Atlanta, ID, and at Rocky Bar, ID.

2. Along the MFBR, 20 warning signs would be located before the burned drainages (two for each drainage, one facing each direction) including one before entering the burn on west and 1 before entering the burn on the east side. Along the James Creek Road, six signs would be installed, two at the switchback, two at the NE end just after entering the burned areas, and one on the south end before entering the burned area and one at the James Creek turnoff in Atlanta.

Design/Construction Specifications:

1. See attached design layout.
2. The early warning system will be managed by the NWS and implemented by the Elmore County Sheriff's office. Using storm radar the NWS will inform the dispatch center for the Elmore County Sheriff's office. The sheriff's office (or dispatch center) will then activate signs remotely along to warn travelers of the danger. See attached design layout

Purpose of Treatment: The flashing signs will provide an early warning system in response to anticipated flood events resulting from the burned areas above Forest roads 268 and 126. The early warning system allows people to evacuate the area when flood hazards are imminent. The warning signs will designate specific areas along the roads that are dangerous during and immediately after rain events.

Treatment Effectiveness Monitoring: Following flood events determine if signs work effectively in keeping the public out of areas at risk.

14. Structure Protection

Description: A patented land claim (Jachalyn Mines) lies within the burn perimeter. Several structures, including at least one dwelling are present. Placement of K-rails (jersey barriers) or other equivalent treatments to protect structures on private land adjacent to the MFBR downstream from Atlanta, Idaho. **REQUEST FOR FUNDING IS BEING SOUGHT THROUGH EMERGENCY WATERSHED PROTECTION AND OTHER COOPERATORS.**

Location (Suitable) Sites: Locate K-rails (jersey barriers) between the toe of the slope and the structures (residence and outbuildings).

Design/Construction Specifications: Obtain permission from the landowner for treatments to be implemented on private land. Place barriers as to prevent flow of mud from reaching structures. Placement of barriers must be approved by qualified BAER team personnel.

Purpose of Treatment: K-rails (jersey barriers) are needed to divert sediment from hillslopes above treatment area away from the structures. Hillslopes suffered a moderate burn severity and are at a moderate to high risk of sliding.

Treatment Effectiveness Monitoring: Visually inspect effectiveness of treatments and repair as needed.

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.)

15. Large Woody Debris (LWD) Placement

Description: Conduct monitoring using the R1/R4 aquatic inventory protocol (habitat plus population) on lower 3 miles of Bald Mountain Creek to assess post-fire status of stream habitat and documented bull trout population. Compare post-fire bull trout population and habitat status with documented pre-fire inventory (on file). This treatment is meant to provide immediate habitat components to the Federally listed (Threatened) bull trout.

If post-fire monitoring indicates that a bull trout population is still present, but LWD and associated pool habitats were adversely modified by the fire, use fallers to place large conifer boles (>12 inches diameter and >35 feet long) in aggregations of 3 to 4 pieces at sites in Bald Mountain Creek as needed to restore LWD metric. This treatment would be requested through an interim 2500-8 request.

Location (Suitable) Sites: Lower 3 miles of Bald Mountain Creek.

Design/Construction Specifications:

1. Monitor stream habitat conditions and bull trout population in the lower 3 miles of Bald Mountain Creek using R1/R4 AI protocol (habitat plus population).
2. Compare post-fire monitoring with pre-fire inventory (on file).
3. Trigger: If the results indicate that a bull trout population is present and LWD and associated pool metrics have been adversely modified by the fire implement the following:
 - a. Identify sites with 3 to 4 standing dead conifers of suitable size (>12 inches diameter and >35 feet long) within falling distance of the stream channel.
 - b. Directionally fall suitable logs into place in aggregations of 3 or 4 pieces as illustrated in the attached typical drawings. Final log placement may be refined using a come-along or chainsaw winch.
 - c. Note that the logs should have an upstream orientation and key into existing structure on the floodplain or hillslopes adjacent to the channel (such as standing trees or large boulders), such that they tend to bind on the opposing bank if swept by strong currents.
 - d. These log accumulations are intended to work primarily to provide scour elements and cover, but will also dissipate stream energy and trap sediment and debris during high flows. Note that less than half of each log is within, or suspended over, the active channel; very little is actually wetted during summer low-flow conditions. Most of the length of each log should rest on the adjacent floodplain or hillslopes.
 - e. Hydrologist or fisheries biologist must be present for implementation.

Purpose of Treatment: This treatment is designed to immediately replace LWD consumed by the fire to provide scour elements and cover, dissipate stream energy and trap sediment and debris during high flows associated with increased runoff from areas of high-intensity burn. The addition of large woody debris will help protect stream habitat occupied by Federally listed (Threatened) bull trout and redband trout, and quickly replace or enhance certain critical habitat elements (i.e., deep pools with complex cover) that were adversely affected by the fire.

16. Rare Plant Monitoring

Description: Monitoring of known and documented rare plant locations with the Hot Creek burn perimeter, including Idaho douglasia (*Douglasia idahoensis*) and Kellogg's bitterroot (*Lewisia kelloggii*) populations. Idaho douglasia is on the Region 4 Sensitive Species list for the Boise NF and Kellogg's bitterroot is Proposed Sensitive.

Location (Suitable) Sites: There is a known population of Idaho douglasia on the ridgeline between James Creek Summit and Steel Mountain, on the divide between the Idaho City and Mountain Home Ranger Districts. (T5N, R10E, S $\frac{1}{2}$ SW $\frac{1}{4}$ SW $\frac{1}{4}$, Sec 16; NE $\frac{1}{4}$ and NE $\frac{1}{4}$ SW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec 20; SE $\frac{1}{4}$ and SW $\frac{1}{4}$ NW $\frac{1}{4}$ NW $\frac{1}{4}$, NW $\frac{1}{4}$ SW $\frac{1}{4}$ NW $\frac{1}{4}$).

There is also known population of Kellogg's bitterroot on the ridgeline between James Creek Summit and Steel Mountain, on the divide between the Idaho City and Mountain Home Ranger Districts, including plants in close proximity to the James Creek Repeater site (T5N, R10E, E $\frac{1}{2}$ Sec 21, W $\frac{1}{2}$ Sec 22 and W $\frac{1}{2}$ Sec 14).

Design/Construction Specifications: Sites will be monitored by Forest Service Botanists during the appropriate field season (early-mid summer 2004) to determine impacts on plant populations related to the fire, fire suppression activities or any weather/natural events such as mudslides that may have been exacerbated by fire occurrence. Information collected will include site condition, current threats, population counts, associated plants and plant communities and GPS locations. This assessment is designed to be an ocular walk-through that collects enough qualitative information to evaluate and design additional treatment if determined necessary. From this data Element of Occurrence (EOC) Records will be produced and submitted to the Idaho Conservation Data Center, and determinations of any necessary mitigation to protect plant populations will be made. Purpose of Treatment: Monitoring will be conducted as a status assessment of the populations. Monitoring results will be used to identify and develop additional treatments, which will be proposed only as necessary to prevent population degradation.

17. Weed Monitoring

Description:

1. Monitoring of prevention requirements. During BAER treatment activities, authorized individuals will need to monitor to insure that:
 - a. All equipment brought into the site is cleaned before beginning earth-disturbing activities.
 - b. Samples are taken from any seed purchased for Rehab activities and taken to the State of Idaho Seed Lab and tested for federally listed noxious weeds or state listed noxious weeds by states in the Intermountain Region of the Forest Service. Any straw or mulch materials used will be sampled to ensure that they meet Idaho State Department of Agriculture

certification as noxious weed seed free or equivalent certification from appropriate neighboring states.

2. Monitoring areas disturbed by suppression actions. The following areas will be monitored for establishment or spread of noxious weeds:
 - a. Fire camps at Lycos Flat, Dutch Creek and Green Valley Ranch. Monitoring at Lycos Flat and Dutch Creek will be conducted by Forest or CWMA personnel. Monitoring the fire command post at the Green Valley Ranch will be conducted by Ranch personnel or CWMA personnel.
 - b. Roads (James Creek and Phifer Creek) and trails within the fire and immediately adjacent. Note: this does not include ongoing actions that are currently being monitored and treated for noxious weed infestations along access roads such as the MFBR road, etc. Crews will monitor roads with truck or ATV mounted spray equipment. New weeds or areas where the infestations are increasing in size will be treated for eradication upon discovery.
 - c. Cat lines and hand lines. These sites will be monitored by crews from trucks, ATV's, and by horseback as appropriate. Helispots, drop sites, and water dip sites. Monitoring helispots and other remote sites will require helicopter transportation.
3. Monitoring areas disturbed by BAER and other recovery actions. Aerial seeding treatment areas and straw mulch treatment areas will be sampled for noxious weed establishment as part of the monitoring requirements.
4. Monitoring the burned area. Monitoring within the burned area will focus on areas with existing noxious weed infestations and adjacent areas. Monitoring will be at an intensity and frequency to identify the spread or occurrence of weed infestations following the wildfire event and recovery actions. This monitoring will be funded in part by BAER and in part through other authorities where pre-fire management has taken place through the Forest Service or CWMA. Monitoring will be conducted this fall and for the next three growing seasons under BAER authorization. Monitoring needs following this period will be conducted under normal program authorities. A minimum of five years of monitoring should be implemented in combination between BAER and other program authorities.

Location (Suitable) Sites: See descriptions in A above.

18. Cultural Resources Monitoring and Consultation

Description: Each of the four significant archaeological sites within the burn area will require future monitoring to mitigate the processes of erosion over time and their increased visibility from decreased vegetative cover. Monitoring will also be used to evaluate the effectiveness of rehabilitation efforts at BS-1384. In addition, monitoring of BAER treatments at locations other than known archaeological sites should take place. Monitoring and consultation will be conducted by Boise NF Heritage Program personnel (2 crew members x 15 days).

Location: Personnel will monitor and consult with crew leaders during implementation of proposed BAER treatments throughout the entire burn area. Priority will be given to those areas where archaeological site locations are more likely to be present (i.e., slopes and flats where flow check structures may be placed rather than culvert replacements locations).

Design/Construction Specifications: Only cultural resources monitoring and consultation will be conducted. No design or construction specifications are necessary.

Purpose of Treatment: The purpose of the cultural resources monitoring and consultation is to help Boise NF Heritage Program personnel meet federal legal requirements with regards to cultural resources. In addition, consultation with crews and crew leaders will be used to educate and inform them of the possible presence of cultural resources that may exist within the specified BAER treatment areas.

Treatment Effectiveness Monitoring: A report will be produced that documents to the Idaho State Historic Preservation Office (SHPO) the results of the cultural resources monitoring and consultation (i.e. if new cultural resources are identified and the significance of any cultural resources encountered).

PART VI – EMERGENCY REHABILITATION TREATMENTS AND SOURCE OF FUNDS BY LANDOWNERSHIP

Line Items	Units	Unit Cost	NFS Lands				Other Lands			All Total \$
			# of Units	WFSU SULT \$	Other \$		# of units	Fed \$	# of Units	
A. Land Treatments										
Straw Mulching/FlowCheck	acres	727	430	\$312,800						\$312,800
Cultural Site Protection	site	3200	1	\$3,200						\$3,200
Weed Treatment	lump su	0.25	26490	\$0	\$500					\$500
Road & Trail Weed Prevention	acres	115	31	\$3,565						\$3,565
Subtotal Land Treatments				\$319,565	\$500		\$0		\$0	\$320,065
B. Channel Treatments										
Culvert Replacement	each	32151	2	\$64,302				2	\$64,302	\$128,604
Rock Vanes	each	844						18	\$15,192	\$15,192
Subtotal Channel Treat.				\$64,302	\$0		\$0		\$79,494	\$143,796
C. Road and Trails										
Culvert Cleaning 2003	each	82	27	\$2,212				62	\$5,079	\$7,291
Culvert Cleaning 2004	each	80	27	\$0				62	\$4,960	\$4,960
Culvert Removal	each	1684	1	\$1,684						\$1,684
Road Drainage Improvement	miles	141	37.1	\$5,220						\$5,220
Evaluate James Creek Road	lump su	47380						1	\$47,380	\$47,380
Evaluate MFBR Road	lump su	47380						1	\$47,380	\$47,380
Trash Racks	each	252	20	\$5,043				49	\$12,355	\$17,398
Subtotal Road & Trails				\$14,159	\$0		\$0		\$117,155	\$131,314
D. Structures										
Early Warning System	signs	668	29	\$19,372				29	\$19,372	\$38,744
Structure Protection	site	19160						1	\$19,160	\$19,160
Subtotal Structures				\$19,372	\$0		\$0		\$38,532	\$57,904
E. BAER Evaluation										
Team Assessment	report	55000	1	\$55,000					\$0	\$55,000
Subtotal Evaluation				\$55,000	\$0		\$0		\$0	\$55,000
F. Monitoring										
LWD Placement	mile	2291	3	\$6,873						\$6,873
Rare Plant	acres	48	40	\$1,920						\$1,920
Weed Monitoring	lump su	0.25	26490	\$6,123	\$500					\$6,623
Cultural Resources Monitoring	days	432	15	\$6,480						\$6,480
Subtotal Monitoring				\$21,396	\$0		\$0		\$0	\$21,896
G. Totals				\$493,794	\$500		\$0		\$235,181	\$729,975

PART VII - APPROVALS

- /s/ Richard A. Smith
Forest Supervisor (signature)

January 21, 2004
Date
- _____
Regional Forester (signature)

Date

Interim Accomplishment Report - Hot Creek Fire BAER

The following table and narrative summarize the FY 2003 accomplishments and estimated costs for implementing BAER treatments on NFS lands burned in the Hot Creek Fire.

Hot Creek Fire - BAER Cost Summary			
[period ending October 31, 2003]	Authorized	Expended	Balance
Land Treatments			
Straw Mulching/FlowCheck	\$296,270	\$312,800	-\$16,530
Cultural Site Protection	\$5,697	\$3,200	\$2,497
Weed Treatment	\$0		\$0
Road & Trail Weed Prevention	\$3,565	\$0	\$3,565
Channel Treatments			
Culvert Replacements	\$64,302	\$0	\$64,302
Rock Vanes	\$0		\$0
Road and Trails			
Culvert Cleaning 2003	\$2,160	\$2,212	-\$52
Culvert Cleaning 2004	\$0		\$0
Culvert Removal	\$1,684	\$0	\$1,684
Road Drainage Improvement	\$12,881	\$5,220	\$7,661
Evaluate James Creek Road			\$0
Evaluate MFBR Road			\$0
Trash Racks	\$5,780	\$5,043	\$737
Structures			
Early Warning System	\$19,372	\$0	\$19,372
Structure Protection			\$0
BAER Evaluation			
Team Assessment	\$55,000	\$55,000	\$0
Monitoring			
LWD Placement	\$6,873	\$0	\$6,873
Rare Plant	\$1,920	\$0	\$1,920
Weed Monitoring	\$6,123	\$0	\$6,123
Cultural Resources Monitoring	\$6,480	\$0	\$6,480
Total	\$488,107	\$383,475	\$104,632

The aerial straw mulch treatment was completed on all 430 acres identified in the initial 2500-8 funding request. This task was completed on approximately September 27, 2003. Original cost estimates were based on a medium-class helicopter. Because of availability problems, a mix of light- and medium-class helicopters was used to complete the project, which resulted in exceeding the authorized funding by \$16,500.

Implementation monitoring of the aerial straw mulch treatment was conducted by Leonard Roeber, Implementation Team Leader. Monitoring was conducted on three different projects: Canyon Fire, Hot Creek Fire and South Fork Fire. The results of this monitoring will provide some “Lessons Learned” relative to obtaining materials, working with contractors, differences between contract helicopters and existing forest contracts, and the straw (bale size, species, chop specifications, etc.).

Flow Check structures were installed on approximately 5 acres using a contract labor crew on September 18, 2003. The cost of this activity was \$12,675 (this does not include the cost of the structures).

The treatment to protect the cultural site cost \$3,200, approximately \$2,500 below the authorized estimate. Activities in this treatment included channel stabilization to keep runoff flow from flooding the site and installing access barriers to prevent off-road vehicle travel through the site.

The Forest road maintenance crew cleaned 27 culverts/inlet basins on FDRs within the burned area, at a total cost of \$2,212. Highway hazard warning signs have been ordered. In the spring, after the winter avalanche period, the signs will be placed along burned canyon corridor of Highway 21. An initial storm patrol to identify potential culvert cleaning will be conducted as part of an annual spring road inspection. Funding to clean out high priority culvert catchment basins will be requested as necessary.

Cultural Resource monitoring was originally identified in the initial funding request. This monitoring activity was to accomplish two objectives: (1) evaluate the protection/impact of cultural sites during implementation of treatments, and (2) evaluate the effectiveness of treatments for protection of cultural sites. It was later decided that implementing the aerial straw mulch treatments would not affect the conditions of the cultural sites within the treatment blocks. It was also determined that the character of the cultural sites was such that protection was not required. Based on these determinations, this monitoring activity would not be conducted.