

BURNED-AREA REPORT
(Reference FSH 2509.13)**PART I - TYPE OF REQUEST**

A. Type of Report

- ☒ 1. Funding request for estimated emergency stabilization funds
☐ 2. Accomplishment Report
☐ 3. No Treatment Recommendation

B. Type of Action

- ☒ 1. Initial Request (estimate of funds needed to complete eligible stabilization 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: Bearskin
B. Fire Number: ID-BOF-000776
C. State: Idaho
D. County: Valley
E. Region: 04
F. Forest: 02 – Boise and 13-Salmon Challis
G. District: Lowman RD and Middle Fork RD
H. Fire Incident Job Code: P4K99F (0402)
I. Date Fire Started: August 23, 2017
J. Date Fire Contained: Est. 10/02/2017 @1800
K. Suppression Cost: \$2,645,000 (as of 10/02/2017)
L. Fire Suppression Damages Repaired with Suppression Funds:

Reference the Bearskin Fire suppression rehabilitation plan for more information.

1. Fireline: Fireline along FS 563, 579 and 555 were repaired. Water bars were constructed and slash applied, where appropriate on any firelines. Low cut and conceal stubs on any line that is visible from the road.
2. Roads with feller-buncher work: Feller buncher worked along FS 579 and 555 roads. Areas will have the berms pulled back with hand tools to its natural state. Roads will also be graded where needed.
3. Slash piles: Chippers will be used to chip slash piles along FS 579 and Deer Pass.
4. Other (identify): Incident base camps, staging areas, drop points, and pump sites are identified for suppression repair activities, including seeding, scattering of slash, removal of dams and blocking motorized vehicle access where needed. BAER treatments include Early Detection and Rapid Response (EDRR) during the next year to prevent noxious and

invasive plants. EDRR will be used on areas where surface soils were disturbed and/or equipment may have moved non-native seed into the suppression activity areas.

M. Watershed Number:

Subwatershed Name	HUC 6	Acres Burned	Percent Watershed Burned
Deadwood River-Deadwood Reservoir	170501200403	301	1%
Bearskin Creek	170602050102	5393	48%
Deer Creek	170501200402	9580	89%
Stratton Creek-Deadwood River	170501200401	3025	11%
Warm Springs Creek	170501200501	9809	54%
Upper Elk Creek	170602050101	2198	8%

N. Total Acres Burned: 30,306 acres (based on the infra-red fire perimeter as of 10/07/2017)

NFS (30,212) Other Federal (0) State (0) Private (94)

O. Vegetation Types: Vegetation is dominated by coniferous forest consisting of Douglas Fir and Ponderosa Pine at lower elevations, transitioning to Lodgepole Pine, Sub-Alpine Fir, and Whitebark Pine at higher elevations. Aspen stands occur throughout the area. A wide variety shrubs and grasses exist throughout the fire area. Rare high elevation riparian native plant communities of concern include: *Carex scopulorum*-dominated wet meadows in glaciated basins. The *Abies lasiocarpa*/*Calamagrostis canadensis* habitat type occurs adjacent to these meadows, with an overstory of *A. lasiocarpa*, *Picea engelmannii*, and *Pinus contorta*.

P. Dominant Soils: gravelly sandy loam with 20-30% fine gravels.

Q. Geologic Types: Primarily granitics of the Idaho batholith, an intrusive mass in the central Idaho region with an area exceeding 20,000 square miles.

R. Miles of Stream Channels by Class:

Perennial Streams (miles)	310
Intermittent Streams (miles)	81

S. Transportation System (miles)

NFS Roads: 30 miles (Open); 25.4 (Closed); County Roads: 6.5 miles
NFS Trails: 1.2 miles

PART III - WATERSHED CONDITION

A. Burn Severity:

Bearskin Fire	Acres	Percent
High	2,914	10
Moderate	13,352	44
Low	4,358	14
Unburned/Very Low	9,682	32
Total	30,306	

B. Water-Repellent Soil (acres): 6,045 acres are estimated as having medium to strong water repellency. Some degree of water repellency was observed across the range of soil burn severity classes. Roughly 70% of the high soil burn severity acres and 30% of the moderate burn severity acres are expected to have heightened runoff potential with increased risk for accelerated surface erosion. Where soil burn severity was moderate to high, repellency was typically strong at the mineral soil surface with strength decreasing with depth. Below 2 inches (or below the A-horizon) repellency was usually absent. There were locations in moderate and high burn severity areas where repellency was absent. Inherently weak water repellency exists in unburned areas randomly throughout the burned area, with some unburned sites exhibiting medium repellency in the upper portion of the A-horizon, particularly dry pine sites or where the understory was dominated by grasses.

Areas exhibiting moderate to strong repellency and projected water repellent conditions will persist until roots, rhizomes, and soil microorganisms begin to re-aerate pore spaces and breakdown organic residues.

C. Soil Erosion Hazard Rating (acres):

2,094 (low) 16,347 (moderate) 11,865 (high)

D. Erosion Potential: 11 tons/acre (range 5 to 17)

ERMiT predictions indicate post-fire soil loss ranges between 5 and 17 tons/acre for a 10-year storm event, depending on slope length, shape, soil depth, and steepness.

E. Sediment Potential: 4,133 yd³/mi² (sediment delivery for first 2 years post-fire)

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years): 3-5 for understory

B. Design Chance of Success, (percent): 90%

C. Equivalent Design Recurrence Interval, (years): 2 and 10 year

D. Design Storm Duration, (hours): 1 hour

E. Design Storm Magnitude, (inches): 0.47; 0.82 (NOAA Atlas 2 Vol. 5)

F. Design Flow, (cubic feet/second/square mile): 1.7; 6.5

G. Estimated Reduction in Infiltration, (percent): 54%

H. Adjusted Design Flow, (cfs per square mile): 11.7; 385

PART V - SUMMARY OF ANALYSIS

Background: The Bearskin Fire started on the Lowman Ranger District on August 23, 2017 and grew to 30,306 acres by October 2nd. The fire eventually burned into the Frank Church River of No Return Wilderness which is managed by the Middle Fork Ranger District. A total of 2,457 acres burned within the wilderness. The fire was managed under two different NIMO teams. It was managed with a point protection strategy with little suppression activities. Typically through fire suppression activities roads and dispersed recreation areas would have been snagged for safety, however this did not happen on this incident. This has added some complexity for the BAER assessment for Human Life and Safety and is addressed in values and treatments below.

The BAER assessment team initiated field reconnaissance of the burned area on October 9th, using a BAER assessment perimeter of 30,306 acres. At that time the fire was 100% contained there were minimal access restrictions to the burned area for the BAER assessment team. The Bearskin fire burned in the Deadwood River-Deadwood Reservoir, Bearskin Creek, Deer Creek, Stratton Creek-Deadwood River, Warm Springs Creek and Upper Elk Creek watersheds on the Lowman Ranger District, Boise National Forest.

The primary values at risk from post-fire effects due to the Bearskin Fire are: human life and safety, transportation infrastructure (roads and culverts), soil productivity, water quality, loss of designated critical habitat for ESA-listed bull trout, site integrity of cultural resources and native vegetation communities. The primary threats caused by the fire include increased runoff, which is expected to intensify the first 2-5 years following the fire until the burned watersheds recover and accelerated hillslope erosion as a result of amplified runoff and decreased infiltration rates. High intensity, short duration rainfall may result in valley bottom flooding and localized debris flows, primarily in the Warm Springs Creek, Deer Creek, Wilson Creek and Little Beaver drainages. Additional threats originating from the destabilized hillslopes throughout the burned area include falling trees and rolling rocks.

A. Describe Critical Values/Resources and Threats (narrative):

(formatted to incorporate "Critical Values and Risk Assessment" from WO ID 2520-2015-1)

1. Human Life and Safety:

Potential threats to visitors/recreating public, residents of private lands, & Forest Service employees include flooding with a minor potential for localized debris flows, hazard trees and rock fall, and loss of ingress and egress. These threats exist along roads, at recreation areas, and to permitted uses downstream or downslope of burned slopes, particularly in areas with a high or moderate soil burn severity. Risk is increased with higher probability in places having greater access and more frequent concentrations of people. Locations with increased risk include: road systems within the Warm Springs, Deer Creek, Wilson Creek and Little Beaver drainages. Deer Flats Campground and Porter Creek Trailhead are also at a high risk due to hazard trees.

Very high risk (likely, major) to **forest visitors and Forest Service employees** within and adjacent to the burned area travelling 579, 555, 563 NFS roads, ML2 and ML3 roads, and at developed recreation sites due to the increased threat **of falling trees, rolling rocks, flash floods, and debris flows** within the burned area. (*Treatments PS-01 Warning Signs*)

Very high risk (likely, major) to recreating **forest visitors and Forest Service employees** working in the Deer Flats campground and picnic area and Porter Creek Trailhead due to the increased threat of **flash floods, debris flows, falling rocks, and trees**. (*Treatment PS-01 Warning Signs, PS-02 Recreation Site Hazard Removal*)

Safety to mine operators was also evaluated. The fire did not reach the Deadwood mining claim area and all structures and collapsed adits remain in pre fire conditions. Mary Jane Merry Blue mines were not visited, however there is a very low potential for new exposure of underground mine workings and mobilizing of potentially hazardous waste rock/tailings materials.

2. Property:

Road Infrastructure

There are 55 miles of National Forest System Roads (NFSR) and an undetermined number of miles of non-system/unauthorized roads within the fire area. Post-burn conditions and the predicted watershed response indicate the potential for increased runoff and overland water flow, with movement of sediment and debris downslope into roadway drainage features such as roadside ditches, culvert inlets, roadway dips and run outs. Once these drainage features become impacted and overwhelmed by the increased runoff, their function fails causing uncontrolled water to divert, with a resulting in major damage to the invested road improvements, loss of road function, and loss of access along some road segments.

There is a **high risk** (possible, major) to **NFS road prisms** from **increased overland flow and accelerated hillslope erosion** concentrating on road segments downslope from areas burned at moderate and high severity. Damage to or failure of road segments constitute a loss of Forest Service infrastructure, with the accumulated threat of accelerated sediment delivery to adjacent streams impacting designated critical or suitable occupied habitat for ESA-listed aquatic fish species and water quality. (*Treatments: RT-01 Road Drainage Maintenance and RT-02 Storm Patrols*)

There is a **high risk** (likely, moderate) where **NFS roads cross** perennial and intermittent drainages from **post-fire runoff**. Increased post-fire runoff is expected from upslope drainages burned at moderate and high severity and overwhelm undersized culverts. Damage to or failure of culverts constitute a loss of Forest Service infrastructure, with the accumulated threat of sediment delivery from road crossing fill negatively altering designated critical or suitable occupied habitat for ESA-listed aquatic fish species and water quality. (*Treatments: RT-03 Culvert Upgrade, RT-01 Road Drainage Maintenance, and RT-02 Storm Patrols*)

3. Natural Resources

Bull Trout and Chinook Salmon

High Risk (likely, moderate) throughout the fire area to **designated critical habitat (DCH)** or **suitable occupied habitat (SOH)** to ESA-listed **bull trout** (*Salvelinus confluentus*) and **chinook salmon** (*Oncorhynchus tshawytscha*). Potential threats include short- and long-

term modification of suitable occupied or designated critical habitat due to **channel scouring from increased stream flows, accelerated erosion, increased sediment delivery, debris flows, and potential stream channel diversion down road prisms**, primarily in locations associated with moderate and high burn severity areas. (*Treatments RT01 Road Drainage Reconstruction, RT-02 Road Storm Patrol, RT-03 Culvert Upgrade*)

Native Plant Communities

Very High Risk (very likely, moderate) to **native and naturalized plant communities** including: riparian zones and rangelands with naturally low vegetation cover, and areas that had disturbances caused by suppression activities such as feller-buncher lines and drop points are at risk due to **spread of noxious weeds and invasive plant species**. Invasive weed species that exist within and adjacent to the fire area that may impact native plant communities include: Spotted knapweed, Rush skeleton weed, Canada thistle, and Oxeye daisy. (*Treatment L-01 Early Detection and Rapid Response*)

Low Risk (very likely, minor) to whitebark pine habitat due to decreased re-generation through subalpine fir encroachment. No treatments proposed.

Soil Productivity

There is a moderate risk (possible, moderate) to soil productivity associated with post-fire threats from accelerated hillslope and sheet erosion, rilling, and gullying in moderate and high burn severity areas. Increases in soil erosion are expected from post-fire environments primarily from the loss of protective soil cover and nutrient-rich organic matter, thereby decreasing soil productivity. Analysis of existing soil conditions and landtypes within the burned area suggests an increased probability for elevated erosion over the inherent high erosion hazard. Damaging erosion events will likely be localized in the moderate and high burn severity areas in the short term (< 10 years) and not result in long-term soil degradation. Risks to soil productivity will diminish as forest floor recovery occurs, therefore natural soil recovery is considered an appropriate response action. While there are no treatments recommended to protect the soil productivity, other land and road treatments will provide some protection to soil productivity in the burn area.

Hydrologic Function

High risk (likely, moderate) from increased run-off with overland flow influencing erosion and sediment delivery to hydrologic function from post-fire conditions. The conditions that contribute to these include: decreased infiltration, reduced vegetation canopy and ground cover. Impacts to watershed process that regulate hydrologic function are expected within moderate and high burn severity areas. The recommended response action is natural recovery.

There is a potential threat to domestic water supply systems off NFS lands as the Deadwood Outfitters has a drinking water diversion in Reeves Creek on the western border of the fire perimeter. This potential threat is from increased sediment and turbidity, as well as increased peak flood flows which can damage or clog surface water supply intake systems. There is also a potential threat for sediment delivery to Deadwood Reservoir from the burned area.

4. Cultural and Heritage Resources:

Very High Risk (very likely, moderate) to **critical Cultural and Heritage Resources** within the burn perimeter as a result of **increased potential for looting** resulting from increased public searching for sites and exposure of previously concealed artifacts and features. *(PS-03 Cultural Resource Protection Patrols)*

Intermediate Risk (possible, moderate) to **critical Cultural and Heritage Resources** within the burn perimeter due to **loss of sites and/or site integrity as a result of erosion, runoff, and flash flooding** from post wildfire storm events. *(PS-03 Cultural Resource Protection Patrols)*

5. Other non-BAER Values:

There are numerous NFS values that are not BAER Critical Values in addition to non-NFS values potentially at risk from post-fire threats originating primarily on NFS lands. A table describing these values will be provided to the Forest Supervisor and District Ranger responsible for addressing non-BAER values. Treatments for these other values have not been identified. Activities to address the non-BAER Critical Values on NFS lands can be considered for discretionary program funding. It is recommended the non-NFS values potentially threatened by post-fire conditions be communicated to the appropriate parties through interagency coordination.

B. Emergency Treatment Objectives:

1. Reduce unacceptable risks to human life and safety from flooding, debris flows, and other threats such as hazard trees, abandoned mines and CERCLA Sites. Taking immediate actions to protect human life is the single overriding objective prior to implementing other actions.
2. Reduce unacceptable risks to roads, trails, and bridge infrastructure due to imminent erosion and flooding post fire events. Prevention of additional loss to infrastructure and a reduction of threats to threatened and endangered species habitat are objectives for the proposed treatments.
3. Reduce unacceptable risks to critical and occupied habitats of federally listed species. Many drainages within the fire provide habitat for bull trout, Steelhead trout, and Chinook salmon.
4. Reduce unacceptable risks to native and naturalized vegetation communities from the threat of noxious weeds and invasive species.
5. Protect National Historic Register listed or eligible cultural resources from risks due to looting and damage from increased visibility and access to sites.

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

Land - NA Channel - NA Roads/Trails - 70% Protection/Safety - 90%

D. Probability of Treatment Success

Treatment	Years after Treatment		
	1	3	5
Land	80	80	90
Channel	NA	NA	NA
Roads/Trails	80	90	90
Protection/Safety ^a	90	80	70
a. Initially, visitors will heed the warning signs. Complacency is expected after the initial year unless there is a damaging event.			

E. Cost of No-Action (Including Loss): \$471,440

See VAR.

F. Cost of Selected Alternative (Including Loss): \$330,671

See VAR.

G. Skills Represented on Burned-Area Survey Team:

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

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H. Treatment Narrative:

Land Treatments:

L-01 EDRR: Reduce the potential for establishment of new noxious weed infestations in native or naturalized communities, particularly establishment of new noxious weed infestations in highly susceptible burned areas, prevent spread of existing infestations, and decrease rate of spread of weed density from existing infestations.

Invasive plants and weed assessments will be conducted in FY2018 for Early Detection and Rapid Response (EDRR) on any new infestation located within the fire perimeter. Treatments will occur at proper phenology of each species to ensure maximum control. This treatment will be supplemented by natural re-vegetation.

Assess areas that have a high potential for weed/invasive species establishment. The Frank Church Wilderness falls within the assessment area and the Porter Creek Trail will have a component of EDRR work, as this area is largely free of noxious weeds and native vegetation is a critical value. Additional critical areas include roads, feller-buncher lines, pit reservoirs, ephemeral drainages and burned areas where suppression vehicles and equipment traveled through known noxious weed/non-native invasive plant species populations. Disturbed areas within and along the fire perimeter, such as feller-buncher lines, hand lines, staging areas and ICP will also be prioritized for monitoring. Acres priority for EDRR are as follows:

Boise National Forest

1,699 acres: Fire Points @ 4 acres, Feller-buncher Lines @ 38 acres and Roads/Trails @ 1,657 acres. (514 acres: existing infestations along roads will fall within area noted above)

Salmon Challis National Forest

27 acres: Trails @ 27 acres

1. Conduct short-term monitoring in FY2018 using early detection and rapid response (EDRR) assessment/monitoring of noxious weed/non-native invasive plant species infestations within the burned area. Monitoring to determine the post-fire presence or spread of invasive species throughout the fire area.
2. Inventory/assessment, photos and map new noxious weed infestations within burned area using GPS technology and upload into the Lowman Ranger District and Middle Fork Ranger District GIS Noxious Weeds database.
3. Chemical treatments using pickups, UTVs and backpack spray units will be used on any noxious weeds located within the fire on public lands. Coordination with County Departments of Agriculture and or the private land owner will be conducted on noxious weeds found on private lands inside and outside of the burn perimeter.

EDRR Treatment Cost Estimate

Item	UOM	Unit cost	# of units	Total Cost
Boise NF: Early Detection and Rapid Response Invasive plant species	acre	\$33.07	1,699	\$56,185
Salmon Challis NF: Early Detection and Rapid Response Invasive plant species	acre	\$99.77	27	\$2,694
Total				\$58,879

Channel Treatments: none proposed

Road and Trail Treatments:

RT-01 Road Drainage Storm Proofing: Increased runoff resulting from burned slopes impacting stream channels adjacent to roads will damage roadway surfaces, drainage structures, and increase associated threats to Human Life and Safety (loss of ingress/egress) and Natural Resources (damage to designated critical or suitable occupied habitat for bull trout).

The purpose of this treatment is to mitigate additional risk to Human Life and Safety, property, emergency ingress/egress, and impacts to water quality, riparian, and bull trout (listed species). There are a total of 62 miles of roads (open and closed) located within or directly adjacent to the fire perimeter, representing a significant financial property investment.

Of the 62 miles within the perimeter, approximately 37 miles were surveyed or had reconnaissance performed. Treatments are proposed on about 19 of the 37 miles surveyed. Road systems are necessary for administrative use, recreation, and other uses and represent a significant financial investment in property. Protecting the road infrastructure will minimize sediment delivery into the watersheds that run into the Deadwood River and Bear Valley Creek which contain listed fish species (bull trout and chinook salmon/steelhead).

The roads listed below were found to have **high risk** of drainage system failure due to the expected increase in flows. The minimal treatments required to remedy these issues are:

1. Outsloping – Outsloped road templates disperse water and reduce erosion. Outsloping is useful in most locations, particularly for dispersing surface drainage on flat road grades. Outsloping is often combined with other road treatments, including rolling dips and armored crossings to control water and handle increased post-fire flows.
2. Drain Dips (with or without armor) – Roadway dips modify the road drainage by altering the template and allowing surface flows to run off the road to prevent any excessive erosion of the surface. The armor consisting of rip rap is placed where runoff could possibly cause erosion to the road surface and fillslope.
3. Waterbars – Purpose and function is similar to rolling drain dips except the length of the structure is more abrupt and is recommended for roads that do not receive any or very little traffic.
4. Culvert Installations –culverts will be installed/replaced on insloped roads that have insufficient relief culverts to prevent scouring of the ditch bottoms and resultant sediment delivery to streams. Where feasible and cost effective, replacement culverts will be installed in small perennial streams to handle post-fire flows.

5. Debris Racks – The debris rack is a barrier in front of the culvert inlet or across the stream channel prior to the culvert which is used to prevent debris from plugging the culvert.
6. Culvert Cleaning – Culvert cleaning includes the cleanout of catchment basins, inlets and outlets. The cleanout of catchment-basins below the inlet of the culvert is done to capture the sediment transported from the channel or ditch. Capturing the sediment will help in preventing the culvert inlet from being partially plugged or completely buried. Culvert outlet cleanout is done to remove any material that would impede the flow of water through the outlet of the culvert.
7. Ditch Cleaning – The cleanout of drainage ditches is required to remove any debris that may deflect the flow out of the ditch and also to ensure the flow reaches the outflow structure.
8. Road Template Reshaping – Road surfaces that channel water down the roadway need to be reshaped to shed the increased flows quickly before additional road surface erosion occurs. This will be accomplished by a combination of insloping and removal of berm where water will drain off the road surface.

Roads to be treated:

NFSR #500 (7.3 miles to be treated)

Culvert Cleaning: 74 Each

Debris racks: 4 Each

Road Template Reshaping/Ditch Cleaning: 7.3 Miles

NFSR #510 (3.0 miles to be treated)

Culvert Cleaning: 29 Each

Road Template Reshaping/Ditch Cleaning: 3.0 Miles

NFSR #579K (0.6 miles to be treated)

Culvert Cleaning: 2 Each

Road Template Reshaping/Ditch Cleaning: 0.6 Miles

NFSR #579S (1.7 miles to be treated)

Culvert Cleaning: 8 Each

Road Template Reshaping/Ditch Cleaning: 1.7 Miles

NFSR #591 (6.0 miles to be treated)

Culvert Cleaning: 58 Each

Remove fire damaged 18" Aluminum culvert, replace with steel 18" x 40' CMP

Road Template Reshaping/Ditch Cleaning: 6.0 Miles

Road Drainage Maintenance Cost Estimate

Item	UOM	Unit cost	# of units	Total Cost
Road Drainage Storm Proofing	miles	\$2,350	18.6	\$43,710

*See Road Drainage Maintenance treatment specification form for complete cost description

RT-02 Storm Patrols-Roads: The overall purpose of this treatment is to reduce the potential for loss and further damage to Forest roads and bridges as a result of storm events. This treatment is in lieu of installing new road drainage structures by keeping existing structures functioning during the emergency period following post fire events. In addition, the treatment reduces the risk to designated critical or suitable occupied habitat for bull trout by mitigating the additional

loss of infrastructure and associated sediment/debris that in turn causes an impact to water quality and riparian areas.

Roads within the fire perimeter contain drainage structures that cross intermittent and perennial streams located in watersheds that have a moderate to severe soil burn severity. These streams now have the potential for increased runoff and debris flows. These increases in flows pose a threat to the existing crossings which may result in plugging culverts or exceeding their maximum flow capacity. If these flows plug drainage structures, the result will likely be additional erosion and debris further down the drainage due to the failures of the fill slopes of the roads.

The purpose of the treatment is to implement work needed to reduce the potential for damage or failure of road surfaces and flow conveyance structures (culverts, bridges) across roads in order to provide safe access across FS lands. Engineering and District personnel, including engineering equipment operators, will respond to roads within the fire perimeter during or after high-intensity summer thunderstorms and spring snow-melt. Patrols will inspect road surface condition, ditch erosion, and culverts/inlet basins for capacity to accommodate runoff flows. As required, the patrols will take action with the heavy construction equipment to minimize the damage to the infrastructure and threat to Forest travelers and administrative personnel.

See Storm Patrols treatment specification form for complete list of roads to be visited for storm patrols.

Road Storm Patrols Cost Estimate

Item	UOM	Unit cost	# of units	Total Cost
Road Storm Patrols	days	\$1,691.16	12	\$20,294

RT-03 Culvert Upgrade: The purpose of this treatment is to reduce the risk of pipe failure and road infrastructure loss, and associated sediment delivery to downstream critical resources that include designated bull trout critical habitat. The location selected for this treatment is a road that crosses the stream with a drainage structure that is extremely undersized and is located in a watershed that has a moderate to high burn severity and has the potential for increased runoff and debris flows. These increases in flows pose a threat to the existing crossing which may result in plugging the culvert or exceeding its maximum flow capacity. If these flows plug the drainage structure the result would be additional erosion and debris further down the drainage due to the failures of the road fill slopes, thereby impacting water quality and bull trout critical habitat. As this crossing is immediately adjacent to known bull trout spawning and rearing areas, the additional fine sediment would likely result in entombing and suffocating bull trout egg masses, which are currently present, downstream in Deer Creek. Additionally, as this culvert is a known migration barrier to upstream migration for bull trout, upgrading this culvert to an AOP would open significant amounts of stream habitat to bull trout colonization within the Deer Creek drainage. Since the Forest Plan requires that all culverts installed in existing or potential fish bearing streams must provide for aquatic species passage, the cost to repair the loss of this crossing structure following a flood event would be equal to the proposed treatment cost.

The following site location is where the pipe will be removed:

- Road 579 – Unnamed tributary to Deer Creek which is designated critical bulltrout habitat. Remove the existing pipe and replace with a bottomless multi-plate arch set on precast footings.

Culvert Upgrade Cost Estimate

Item	UOM	Unit Cost	# of Units	Total Cost
Culvert Upgrade	Each	\$182,800	1	\$182,800

Protection/Safety Treatments:

PS-01 Hazard Warning Signs The overall purpose of this treatment is to reduce risks to human life and safety by warning motorists and/or Forest visitors of existing threats while traveling within and downstream of the burned area.

“Entering Burned Area” signs are needed to alert the public of possible threats to their life and safety that exist within or downstream of a burned area. The signs contain language specifying items to be aware of when entering a burn area such as falling trees and limbs, rolling rocks, and flash floods.

The highway warning signs are needed in site-specific locations to alert those traveling the roads through and downstream of the burned area of upcoming dangers such as shape curves, falling rocks, “Flood Risk - No Parking or Standing”, etc.

Barricade and object markers are needed to delineate obstructions and/or hazards to ensure the motorist safety.

Road/trail route markers are needed at the beginning of the road/trail and major intersections. The route markers identify the road/trail or route number corresponding to the Forest Visitor Map and Motor Use Vehicle Map (MVUM.) Maintenance Level (ML) 3 roads or higher are identified with horizontal route markers and Level 2 roads are identified with vertical route markers (Carsonites.) These signs inform the traveler of their current location and assist in navigating to safety during times of severe weather and flooding/debris flows.

Hazard Warning Signs Cost Estimate.

Item	UOM	Unit cost	# of units	Total Cost
Roadside & Trailhead Signs: “Entering Burned Area Warning”	Number of signs	\$379.59	17	\$6,453
Barricade & object markers				

PS-02 Recreation Facility Hazard Removal

The fire burned around campgrounds, recreation facilities and trailheads. The treatment is to fall hazard trees in the Deer Flats campground and contour fall the hazard trees at the Porter Creek trailhead and dispersed recreation areas. The purpose of the treatment is to prevent damage to human life and safety from fire damaged trees. The fire burned in the surrounding areas of the campground, trailhead and dispersed recreation areas resulting in the mortality to pockets of trees in and around the sites. A dead tree is considered a hazard tree in a developed area setting. Falling of these trees will prevent further damage to campground structures (undamaged by the fire) and also prevent unnecessary injury to the public or their property.

Recreation Facility Hazard Removal Cost Estimate

Item	UOM	Unit cost	# of units	Total Cost
Recreation Site Hazard Removal	sites	\$1,799.42	7	\$12,596

PS-03 Cultural Resource Protection Patrols

The primary purpose of resource protection patrols, provided by forest service personnel is to reduce or mitigate the risk of archeological looting during a time (through Fall 2018) when hunters and post-fire "sightseers" are expected to be in the area. The sites identified are eligible or potentially eligible for listing on The National Register of Historic Places. These sites are most vulnerable to looting immediately after a fire when there is no vegetation to help obscure artifact visibility. Cultural resources are scattered throughout the fire area, making area closure difficult. Administrative closures can draw attention to specific site locations.

There is a high risk to cultural resource sites within the burn perimeter as a result of increased potential for looting resulting from increased public access to sites and exposure of previously concealed artifacts and features, and loss of sites and/or site integrity as a result of erosion, runoff, and flash flooding from post wildfire storm events.

Cultural Resource Protection Patrols Cost Estimate

Item	UOM	Unit cost	# of units	Total Cost
Cultural Resource Protection Patrols	site	\$396	15	\$5,941

BAER Assessment & Implementation Consultation:

Associated activities obligated under ID-FSM2520-2015-1 need to be considered in the BAER funding request when emergency response actions are authorized. These are accumulated tasks above the normal program of work and generally not accounted for in out-year program planning. Because implementation of approved BAER response actions trigger these required tasks and the unit's allocated budget does not account for these obligations, BAER funding is the appropriate authorization to ensure this consultation is completed.

Implementation Tracking & Required Reporting of Authorized Emergency Response Actions

	Rate	Days	Cost
Forest BAER Coordinator (GS-12)	\$450	5	\$2,250
Total Cost			\$2,250

Emergency Consultation on Implementation of Authorized Emergency Response Actions

	Rate	Days	Cost
Forest Fish Biologist (GS-12)	\$450	1	\$450
Total Cost			\$450

NHPA Compliance for Implementation of Authorized Emergency Response Actions

	Rate	Days	Cost
Forest Archeologist (GS-12)	\$450	2	\$900
Total Cost			\$900

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.)

LT-01 Treatment sites will be evaluated annually for the next three years to ensure control methods are meeting resource objectives and to inventory for new invaders. Weed specialist/technicians will visit chemically treated sites after treatment; this is especially important for weed populations that are sprayed to ensure efficacy of herbicide application. Initiate follow-up treatments if additional non-native species or new infestations are discovered. Control will be considered successful upon determination that all noxious weeds have been controlled and non-native invasive plants have not spread beyond their pre-fire locations.

Implemented road drainage improvements (RT-01) will be evaluated to ensure stabilization objectives are being met after storm events (RT-02 Road Storm Patrols).

Part VI – Emergency Stabilization Treatments and Source of Funds

Interim

			NFS Lands				Other Lands				All
		Unit	# of		Other	# of	Fed	# of	Non Fed	Total	
Line Items	Units	Cost	Units	BAER \$	\$	units	\$	Units	\$	\$	
A. Land Treatments											
L-01 EDRR- BOF	acres	33	1,699	\$56,186	\$0		\$0		\$0	\$56,186	
L-01 EDRR- S-C	acres	100	27	\$2,694	\$0		\$0		\$0	\$2,694	
					\$0		\$0		\$0	\$0	
Subtotal Land Treatments				\$58,880	\$0		\$0		\$0	\$58,880	
B. Channel Treatments											
None				\$0	\$0		\$0		\$0	\$0	
Subtotal Channel Treatments				\$0	\$0		\$0		\$0	\$0	
C. Road and Trails											
RT-01 Road Drainage Storm	miles	2,350	19	\$43,710	\$0		\$0		\$0	\$43,710	
RT-02 Storm Patrols	days	1,691	12	\$20,292	\$0		\$0		\$0	\$20,292	
RT-03 Culvert Upgrade	each	182,800	1	\$182,800	\$0		\$0		\$0	\$182,800	
				\$0	\$0		\$0		\$0	\$0	
				\$0	\$0		\$0		\$0	\$0	
				\$0	\$0		\$0		\$0	\$0	
				\$0	\$0		\$0		\$0	\$0	
Subtotal Road and Trails				\$246,802	\$0		\$0		\$0	\$246,802	
D. Protection/Safety											
PS-01 Warning Signs	sign	380	17	\$6,453	\$0		\$0		\$0	\$6,453	
PS-02 Recreation Site Haza	site	1,799	7	\$12,596	\$0		\$0		\$0	\$12,596	
PS-03 Cultural Resource Pr	site	396	15	\$5,940	\$0		\$0		\$0	\$5,940	
Subtotal Protection/Safety				\$24,989	\$0		\$0		\$0	\$24,989	
E. BAER Evaluation											
Initial Assessment	Report			\$25,000	\$0		\$0		\$0	\$25,000	
Coordination & Consultation	lump sum	3,600	1	\$3,600	\$0		\$0		\$0	\$3,600	
Subtotal Evaluation				\$3,600	\$0		\$0		\$0	\$28,600	
F. Monitoring											
Insert new items above this line!				\$0	\$0		\$0		\$0	\$0	
Subtotal Monitoring				\$0	\$0		\$0		\$0	\$0	
G. Totals											
Total - This Request				\$334,271	\$0		\$0		\$0	\$359,271	
Previously Approved					\$0		\$0		\$0	\$0	
Total to Date				\$334,271						\$359,271	

PART VII - APPROVALS

1.


CECILIA

Oct 19, 2017

Forest Supervisor (signature)

Date

2.

Regional Forester (signature)

Date

