

**Date of Report: September 22, 2022****BURNED-AREA REPORT****PART I - TYPE OF REQUEST****A. Type of Report**

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

**B. Type of Action**

- ☒ 1. Initial Request (Best estimate of funds needed to complete eligible stabilization measures)
- ☐ 2. Interim Request # \_\_\_\_\_
  - ☐ Updating the initial funding request based on more accurate site data or design analysis

**PART II - BURNED-AREA DESCRIPTION****A. Fire Name: Four Corners****B. Fire Number: ID-PAF-005394****C. State: Idaho****D. County: Valley, Gem and Adams****E. Region: 04****F. Forest: Boise NF and Payette NF****G. District: Cascade, Emmett and Council****H. Fire Incident Job Code: P4POFD22****I. Date Fire Started: August 13, 2022****J. Date Fire Contained: Est. 09/24/2022****K. Suppression Cost: \$37,900,000 (as of 09/20/2022)****L. Fire Suppression Damages Repaired with Suppression Funds (estimates):**

Reference the Four Corners Fire suppression rehabilitation plan for more information.

1. **Dozer-constructed Fireline repaired (miles):** Approximately 15 miles of fire dozer lines are being repaired. Fire dozer line repair includes: pulling in and re-contouring berms; constructing water bars where appropriate; applying slash; and seeding. Trails used for fire dozer line will be rehabbed back to the original tread width by pulling in berm materials and applying slash to obscure or camouflage the widened section. Tank traps will be constructed where dozer lines intersected with roads or motorized trails and then logs and slash were placed along fire dozer lines within line of sight to camouflage and reduce new unauthorized use.
2. **Pump Sites:** Pump sites were identified for the removal of dams, removal of contaminated soils and all plastic, trash or other foreign materials at the sites.
3. **Other (identify):** Incident command, base camps, staging areas, spike camps, helispots and drop points were identified for suppression repair activities, including scattering of slash and removal of trash. Heavily used staging and parking areas with compacted soils will be ripped, recontoured and slashed and then seeded. BAER treatments include Early Detection and Rapid Response (EDRR) in these locations 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 Numbers:

Table 1: Acres Burned by Watershed

HU_12_NAME	Soil Burn Severity	Acres	PERCENTAGE
Anderson Creek	Unburned/Very Low	526	1.6
Anderson Creek	Low	1751	5.2
Anderson Creek	Moderate	1423	4.2
Anderson Creek	High	47	0.1
Duck Creek-Cascade Reservoir	Unburned/Very Low	1201	2.2
Duck Creek-Cascade Reservoir	Low	2920	5.3
Duck Creek-Cascade Reservoir	Moderate	2290	4.1
Duck Creek-Cascade Reservoir	High	237	0.4
Pole Creek- Chief Eagle Eye Creek	Unburned/Very Low	604	2.0
Pole Creek- Chief Eagle Eye Creek	Low	2519	8.3
Pole Creek- Chief Eagle Eye Creek	Moderate	1567	5.1
Pole Creek- Chief Eagle Eye Creek	High	43	0.1
Upper Little Weiser River	Unburned/Very Low	78	0.2
Upper Little Weiser River	Low	166	0.4
Upper Little Weiser River	Moderate	20	0.0

## N. Total Acres Burned: 15,391

Table 2: Total Acres Burned by Ownership

Ownership	Soil Burn Severity	Acres	Percent
Private	Unburned/Very Low	72	0.5
Private	Low	408	2.7
Private	Moderate	81	0.5
Private	High	1	0.0
USFS	Unburned/Very Low	2338	15.2
USFS	Low	6948	45.1
USFS	Moderate	5217	33.9
USFS	High	326	2.1
		15391	100.0

**O. Vegetation Types:** Vegetation types in the fire perimeter are dominated by coniferous forest consisting of Ponderosa pine and Douglas fir at lower elevations, transitioning to Engelmann spruce, lodgepole pine, subalpine fir, and whitebark pine at higher elevations. Aspen also occurs in the area but is not a dominant vegetation type. Non-forested habitats are intermixed throughout the burn area and consist of sagebrush dominated system, meadows, and scablands. A wide variety of native shrubs and grasses exist throughout the fire perimeter. Whitebark pine (*Pinus albicaulis*) is an ESA proposed species and a Regional Forester's Sensitive Species. A documented occurrence of *Allium tolmiei* var. *persimile*, a Regional Forester's Sensitive Species occurs on the fire perimeter. The Snowbank IRA exists in the fire area. Snowbank IRA is designated as primitive and restricts road construction, timber harvesting, and other management activities. It also includes high elevation whitebark pine-subalpine fir habitat types.

**P. Dominant Soils:** Sandy loams dominate throughout the fire by approximately 44%. The next largest soil texture is loamy sands, which represent approximately 28%. The remaining ~28 % make up loam textures, gravel, and rock outcrop.

PAF		Landtype	Acres
Landtype	Soil Texture		
106-1	Deep sandy and loamy skeletal soils	104	455
109-7	moderately deep loamy skeletal and fine loamy soils	105	34
109b-1	moderately deep loamy skeletal soils	106-1	514
110-2	moderately deep fine loamy and loamy skeletal soils	106b	41
132a-1	Shallow and moderately Deep Loamy and Loamy Skeletal soils	108	53
		109-1	257
BOF		109-2	7
Landtype	Soil Texture	109-7	1337
104	Sandy loam	109a-1	1678
105	loamy sand	109b	6
106b	sandy loam	109b-1	641
108	stony loamy sand	110	327
109-1	stony loamy sand	110-2	345
109-2	stony loamy sand	110x	370
109a-1	sandy loam	111a	15
109b	sandy loam	111a-1	1125
110	Generally stony loamy sand	111a-2	968
110x	extremely stony loamy sand	111a-3	537
111a	stony sandy loam	111d-2	143
111a-1	stony sandy loam	113	50
111a-2	stony sandy loam	113-1	968
111a-3	stony sandy loam	114	111
111d-2	20% rock outcrop stony loamy sand	120a	1092
113	rock out crop 50% stony loamy sand	120b	904
113-1	rock out crop 50% stony loamy sand	120b-10	656
114	extremely stony loamy sand	120b-4	1001
120a	sandy loam	120d-2	41
120b	loamy sand	131-3	203
120b-10	loamy sand	132a-1	1115
120b-4	loamy sand	132b-1	1
120d-2	loamy sand	132c-2	10
131-3	skeletal loam	133a-3	99
132c-2	skeletal loam		
133a-3	skeletal loam		

**Q. Geologic Types:** Approximately 40% of the fire area's geology is basalt bedrock from the Miocene era. The rest of the fire is granodiorite bedrock from the cretaceous era

#### R. Miles of Stream Channels by Order or Class:

Table 3: Miles of Stream Channels by Order or Class

STREAM TYPE	MILES OF STREAM
PERENNIAL	1634
INTERMITTENT	563
EPHEMERAL	
OTHER (DEFINE)	

#### S. Transportation System:

**Trails:** National Forest (miles): 28.7 miles

**Roads:** National Forest (miles): 14 miles (open); 11.4 miles (closed)

**PART III - WATERSHED CONDITION****A. Burn Severity (acres):***Table 4: Burn Severity Acres by Ownership*

SBS	Boise NF	Payette NF	Private	Percentage	Grand Total
Unburned/Very Low	1737	600	72	16	2410
Low	5041	1907	408	48	7356
Moderate	3783	1434	81	34	5298
High	279	46	1	2	327
Totals					15391

**B. Water-Repellent Soil (acres):** Moderate (11-40 seconds) water repellency was observed in the high burn severity areas and approximately half of the moderately burned areas. A rough estimate of 19% of the fire area is assumed to have fire-induced water repellency.

**C. Soil Erosion Hazard Rating:** Landtype inherent surface erosion hazards range low to moderate for bare soils. Reduced infiltration due to water repellency will push many soils toward to high rating. However, there is very minimal bare soil. It is only found in the high SBS (~2%) of the fire. The Universal Soil Loss Equation (USLE) rate is .077 (t/h/yr) which is low/ tolerable.

**D. Erosion Potential:** WEPP results indicate an average annual delivery from the post-fire hillslope soil loss for the pour points chosen in the table that follows. The material that has the potential to erode is mostly sandy loam.

Watershed Name	Post Hillslope soil loss (ton/ yr)
Willow One	33
Bull Corral	23
Campbell	130
Sheep	130
Van Wyck	160
Bull Corral Trib	0
Sheep Trib	9.1
French	170

**E. Sediment Potential:** USGS debris flow modeling estimates the likelihood and potential volume of debris flows as they exit on the mountain front in response to a design storm having a 15-minute peak rainfall intensity of 24 mm/h. The models are designed to assess the potential for debris flow in the locations where debris flows initiate (i.e., where they form and get larger). All basins for this fire are a low or moderate potential. The creeks that have a moderate potential are Sheep Ck.; Bull Corral, Poison, Van Wyck, French, Hazard, Campbell, Skein Lake, Silver Ck, Bed Ground Ck

WEPP results indicate an average annual delivery from the post-fire total channel soil loss for the pour points chosen in the table that follows. The material that has the potential to erode is mostly sandy loam.

Watershed Name	Total channel soil (ton/yr)
Willow One	46
Bull Corral	79
Campbell	230
Sheep	230
VanWyck	230
Bull Corral Trib	0.33

Sheep Trib	12
French	280

**F. Estimated Vegetative Recovery Period (years):** 1 to 3 years for understory graminoids/shrubs

**G. Estimated Hydrologic Response (brief description):** It is reasonable to expect increased post-fire runoff in streams within the burned area. Flows may increase from 0-300% depending on burn severity within the respective watersheds. Increased flows are most likely from Van Wyck, Silver and French Creeks on the Boise National Forest and Bull Corral Creek on the Payette National Forest.

## **PART V - SUMMARY OF ANALYSIS**

### **Introduction/Background**

The Four Corners Fire started on the Payette National Forest Council Ranger District on August 13, 2022, and grew to 13,727 acres by September 18, 2022. The fire eventually burned onto the Cascade and Emmett Ranger Districts on the Boise National Forest. The fire was managed under 3 different IMTs. It was managed using a modified strategy with a mix of direct and indirect tactics with point protection. As part of fire suppression activities, sections of roads are being snagged and cleared for safety. Dozer lines and handlines will be rehabbed and some water bars were constructed along roads.

The BAER assessment team initiated field reconnaissance of the burned area on September 13, 2022, using a BAER assessment perimeter of 13,727 acres. At the time, the fire was 85% contained but there were minimal access restrictions to the burned area for the BAER assessment team. The Four Corners Fire burned in the the Anderson Creek, Duck Creek-Cascade Reservoir, Pole Creek-Chief Eagle Eye and Upper Little Weiser River watersheds.

The primary values at risk from post-fire effects due to the Four Corners Fire are: human life and safety, transportation infrastructure (roads, trails and culverts), soil productivity, hydrological function, loss of designated critical habitat and water quality 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 to 5 years following the fire until the burned watersheds recover, and accelerated hillslope erosion, which would result from amplified runoff and decreased infiltration rates. High intensity, short duration rainfall may result in sediment loading, localized debris flows, and valley bottom flooding, primarily in the Sheep Creek, Bull Corral, Poison, Van Wyck, French, Hazard, Campbell, Skein Lake, Silver creek, Bed Ground creek drainages. Additional threats include falling trees and rolling rocks originating from destabilized hillslopes in the burned area.

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

*Table 5: Critical Value Matrix*

Probability of Damage or Loss	Magnitude of Consequences		
	Major	Moderate	Minor
	<b>RISK</b>		
Very Likely	<b>Very High</b>	<b>Very High</b>	<b>Low</b>
Likely	<b>Very High</b>	<b>High</b>	<b>Low</b>
Possible	<b>High</b>	<b>Intermediate</b>	<b>Low</b>
Unlikely	<b>Intermediate</b>	<b>Low</b>	<b>Very Low</b>

#### **1. Human Life and Safety (HLS):**

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 435, 438, 422, 50180 and 50231 road systems. Van Wyck, Poison Creek and Chief Eagle Eye Trailheads is 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 435, 438, 422, 50180 and 50231 forest roads and 118, 131 and 134 NFS Trails and at dispersed recreation sites due to the increased threat of falling trees, rolling rocks, flash floods, and debris flows within the burned area. (Treatment S1A Warning Signs, S3 Hazard Tree Falling)

## **2. Property (P):**

### **Road Infrastructure**

There are 14 miles of open National Forest System Roads (NFSR) within the fire area. Post-burn conditions and the predicted watershed response indicate the potential for increased runoff and overland water flow, with the 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 to cause uncontrolled water to divert, with 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 (likely, moderate) 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 constitutes a loss of Forest Service infrastructure, with the accumulated threat of accelerated sediment delivery to adjacent streams impacting water quality. (Treatment R1 Storm Proofing and R3 Storm Inspection and Response)

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 constitutes a loss of Forest Service infrastructure, with the accumulated threat of sediment delivery from road crossing fill negatively altering water quality. (Treatment: R1 Storm Proofing and RT11 Up-sized Culvert).

## **3. Natural Resources (NR): Native Plant Communities**

Very High Risk (Very Likely/ Major) 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 hand lines and drop points are at risk due to the 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 skeletonweed, Canada thistle, houndstongue, dalmatian toadflax (Treatment P1 Early Detection and Rapid Response)

High (likely, moderate) to whitebark pine habitat. Post-fire damage in this population is likely 50% due to multifaceted factors: direct and indirect fire effects weakening individuals from insect and disease resilience; loss of mature seed source trees; dozer line & other suppression activities may have created vectors for the introduction of invasive species into occupied habitats; a few immature individuals were destroyed during fire suppression efforts; invasive nonnative plants have open soil in which to establish through vectors including equipment involved in suppression activities, and suppression features increase motorized accessibility where dozer line enters occupied habitats. No treatments are proposed.

### Bull Trout

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*) in Chief Eagle Eye Creek, Pole Creek, Poison Creek, and Sheep Creek).

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. Impacts from debris flow, sedimentation, and ash from precipitation events could lead to the filling of pool habitat and potential fish kills. Ash can harm the gills of fish impacting respiration. Filling of pool habitat reduces areas where natural resources would persist, reduce spawning gravels, and reduce refuge for fry and young of the year life stages.

(Treatments R1 Storm Proofing and R11 Up-sized Culverts)

### Soil Productivity

There is a high risk (likely, 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 of 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 soil productivity, there is a natural needle cast that is prolific throughout the low and moderate SBS areas. There will also be road treatments that will help reduce sediment accumulating into streams, and the Cascade reservoir. There is also a minimal amount of high SBS (only 2% of the acres burned).

### 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 processes 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 of scouring and changes in channel morphology in high and moderate severity in the upper and mid drainages that flow into Sheep Ck.; Bull Corral, Poison, Van Wyck, French, Hazard, Campbell, Skein Lake, Silver Ck, Bed Ground Ck. This potential threat is from increased sediment. No treatments are recommended.

## 4. Cultural and Heritage Resources:

Very High Risk (likely, major) to critical Cultural and Heritage Resources within the burn perimeter as a result of the increased potential for looting resulting from increased public searching for sites and exposure of previously concealed artifacts and features. No treatments are recommended.

## B. Emergency Treatment Objectives:

1. Reduce unacceptable risks to human life and safety from flooding, debris flows, and other threats such as hazard trees. 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. Several drainages within the fire provide habitat for bull trout.
4. Reduce unacceptable risks to native and naturalized vegetation communities from the threat of noxious weeds and invasive species.

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

Land:

Channel: NA

Roads/Trails: 70%

Protection/Safety: 90%

## D. Probability of Treatment Success

Table 6: Probability of Treatment Success

	1 year after treatment	3 years after treatment	5 years after treatment
<b>Land</b>	80	80	90
<b>Channel</b>			
<b>Roads/Trails</b>	80	90	90
<b>Protection/Safety</b>	90	80	70

**E. Cost of No-Action (Including Loss):** The cost of loss related to human life and safety cannot be calculated.

## F. Cost of Selected Alternative (Including Loss):

## G. Skills Represented on Burned-Area Survey Team:

- ☒ Soils      ☒ Hydrology      ☒ Engineering      ☒ GIS      ☒ Archaeology  
☒ Weeds      ☒ Recreation      ☒ Fisheries      ☐ Wildlife  
☐ Other:

**Team Leader:** Holly Hampton

**Email:** holly.hampton@usda.gov

**Phone(s)** 208-280-8673

**Team Leader Trainee:** Anna Plumb

**Email:** anna.plumb@usda.gov

**Phone(s)** 630-632-5589

**Forest BAER Coordinator:** Holly Hampton

**Email:** [holly.hampton@usda.gov](mailto:holly.hampton@usda.gov)

**Phone(s):** 208-280-8673



**Forest BAER Coordinator:** Kelly Owens

**Email:** [kelly.owens@usda.gov](mailto:kelly.owens@usda.gov)

**Phone(s):** 208-634-0793

**Team Members:** *Table 7: BAER Team Members by Skill*

<b>Skill</b>	<b>Team Member Name</b>
<i>Team Lead(s)</i>	Holly Hampton
<i>Soils</i>	Anna Plumb and John Dixon
<i>Hydrology</i>	Matt Robinson & Clay Roehner
<i>Engineering</i>	Ryan Shaul and Doug Montini
<i>GIS</i>	Cameron Carsley, Brian Gardner
<i>Archaeology</i>	Joe Bergstrom and Jessica Goodwill
<i>Weeds</i>	Brittini Brown, Jennifer Brickey, and Jason McLeod
<i>Recreation</i>	Eve Santillan
<i>Fisheries</i>	Trisha Giambra
<i>Range</i>	Hayden Boll
<i>Veg</i>	John Riling

## H. Treatment Narrative:

### Land Treatments:

**P1 EDRR:** Reduce the potential for the establishment of new noxious weed infestations in native or naturalized communities, particularly establishment of new noxious weed infestations in highly susceptible burned areas, prevent the spread of existing infestations, and decrease the rate of spread of weed density from existing infestations.

Invasive plants and weed assessments will be conducted in FY2023 for Early Detection and Rapid Response (EDRR) on any new infestation located within the fire perimeter. Treatments will occur at the 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 fire area falls within an area is largely free of noxious weeds and native vegetation is a critical value. Additional critical areas include roads, drop points, helispots 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 staging areas, drop points, dozer lines, and ICP will also be prioritized for monitoring. Acres priority for EDRR are as follows:

#### Suppression EDRR Payette (Total Acres = 38.5)

- 1) Drop points 4 acres
- 2) Helispots 8 acres
- 3) Dozer Push 6 acres
- 4) Dozer line [(20,164 feet x 12 feet blade width)/43,560] 5.5 acres
- 5) Improved/Completed Roads as line [12,815 feet x 12 feet] 3.5 acres
- 6) Completed hand line [21,072 feet x 3 feet wide]] 1.5 acres
- 7) Spike camps 10 acres

#### Suppression EDRR Boise (Total Acres = 88.6)

- 1) Drop Points 18 acres

- 2) Helispot points 7 acres
- 3) Dozer push 1 acre
- 4) Dozer Line [48,556 feet x 12 feet blade width] 13.4 acres
- 5) Completed hand line [85,569 feet x 3 feet] 5.9 acres
- 6) Completed mixed construction [14,793 feet x 12 feet] 4.1 acres
- 7) Improved/Completed Roads as line [(25,374+116,841) feet x 12 feet] 39.2 acres

BAER EDRR Payette (Total Acres = 2.47)

- 1) Existing weed population 2.47 acres

BAER EDRR Boise (Total Acres = 26.1)

- 1) Existing weed population 26.1 acres

#### Design/Construction Specifications:

1. Conduct short-term monitoring in FY2023 using early detection and rapid response (EDRR) assessment/monitoring of noxious weed/non-native invasive plant species infestations within the burned area. Monitoring will be to determine the post-fire presence or spread of invasive species throughout the fire area.
2. Inventory/assessment, photos, and mapping of new noxious weed infestations within the burned area using GPS technology and upload into the Cascade, Emmett, and Council Ranger District GIS Noxious Weeds databases.
3. Chemical treatments using pickups, UTVs, and backpack spray units will be used on any noxious weeds located within the fire perimeter, immediately adjacent roads entering the fire perimeter, and main access roads to the fire area. Coordination with the County Departments of Agriculture will be conducted to treat noxious weeds found on main access roads to the burn perimeter.

#### EDRR Treatment Cost Estimate

EDRR Type	FISCAL YEAR	PLANNED INITIATION DATE (M/D/YYYY)	PLANNED COMPLETION DATE (M/D/YYYY)	WORK AGENT	UNITS	UNIT COST	PLANNED ACCOMPLISHMENTS	PLANNED COST
Suppression EDRR Boise	23	06/15/2023	10/01/2023	F	88.6	\$ 170		\$15,091
BAER EDRR Boise	23	06/15/2023	10/01/2023	F	26.1	\$ 170		\$ 4,445
Suppression EDRR Payette	23	06/15/2023	10/01/2023	F	38.5	\$ 167		\$ 6,426
BAER EDRR Payette	23	06/15/2023	10/01/2023	F	2.47	\$ 167		\$ 412
	TOTAL							\$ 26,374

**Channel Treatments: None proposed.**

#### Roads and Trail Treatments

**R1 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, loss of access to visitors and local residents, and impacts to water quality, riparian, and bull trout (listed species). Approximately 25.4 miles of National Forest System Roads are located within fire perimeter, representing a significant financial property investment. Protect road infrastructure and minimize sediment delivery into the watersheds that run into Sheep Creek, Chief Eagle Eye Creek, Pole Creek, and Poison Creek which contain listed species such as Bull Trout

Of the 25.4 miles within the perimeter, approximately 15.9 miles were surveyed or had reconnaissance performed.

The roads listed below were found in areas of high and moderate burn severity. The minimal treatments required to remedy these issues are:

1. Drain Dips (with or without armor) – Construct rolling dips per Forest Service and/or BLM standards. Place rip rap across the roadway and on the fill slopes where potential runoff can occur if flow was to overtop the roadway from a plugged culvert or excessive runoff.
2. Waterbars – Construct waterbars per Forest Service and/or BLM standards. Place enough waterbars where necessary that will quickly divert flow off the roadway, before causing surface erosion.
3. Culvert Cleaning – Remove any blockages from inlet, outlet and inside barrel. Straighten bent inlets. Catchment-basins shall have all existing silt and debris removed and either hauled away or spread out such that the material cannot reenter the drainage structure during a runoff event.
4. Ditch Cleaning – All drain ditches along the length of the roads shall have all existing silt and debris removed and either hauled away or spread out such that the material cannot reenter the drainage structure during a runoff event.
5. Reshape the road surface to provide positive drainage to ditches and culverts. Remove berm where water will flow off roadbed, repair large ruts in the middle of the roadbed that channel water downgrade.

NFSR #435 (3.2 miles to be treated)

Culvert Cleaning: 36 Each

Ditch Cleaning: 3.2 Miles

NFSR #435G (1.3 miles to be treated)

Culvert Cleaning: 1 Each

New Waterbars: 5 Each

Grade Dip Reconditioning/reconstruct (existing): 10 Each

NFSR #435A (2.1 miles to be treated)

Culvert Cleaning: 2 Each

New Waterbars: 8 Each

Grade Dip Reconditioning/reconstruct (existing): 14 Each

Waterbars Reconditioning/reconstruct (existing): 12 Each

NFSR #50876 (0.1 miles to be treated)

Culvert Cleaning: 1 Each

**Storm Proofing Cost Estimate**

Item	UOM	Unit cost	# of units	Total Cost
Storm Proofing	miles	\$1,844	8	\$14,752

\*See Storm Proofing treatment specification form for complete cost description

**R3 Storm Inspection and Response**

There is an immediate and future threat to travelers along roads within the burned area due to the increased potential for rolling and falling rock from burned slopes and increased potential for falling trees, flash floods and mudflows. With the loss of vegetation normal storm frequencies and magnitudes can more easily initiate rill and gully erosion on the slopes and it is likely that this runoff will cover the roads or cause washouts. These events make for hazardous access along steep slopes and put the safety of users at risk. Patrols should first focus on Forest Road 435.

The purpose of the monitoring is to evaluate the condition of roads and bridges for motorized access and to identify and implement additional work needed to maintain and/or repair damage to road surfaces and flow conveyance structures (culverts, bridges) across roads in order to provide safe access across FS lands. Engineering and District personnel will survey the roads within the fire perimeter after high-intensity summer thunderstorms and spring snow-melt. Survey will inspect road surface condition, ditch erosion, and culverts/inlet basins for capacity to accommodate runoff flows.

**Storm Inspection and Response Cost Estimate**

Item	UOM	Unit cost	# of units	Total Cost
Storm Inspection and Response Cost Estimate	miles	\$601	8 miles	\$4,808

\*See Storm Inspection and Response treatment specification form for complete cost description

**R11 Up-Sized Culvert**

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, such as designated bull trout critical habitat. The locations selected for this treatment contain drainage structures that cross streams located in watersheds that have a moderate to high burn severity and 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 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 downstream in a tributary to Bull Corral Creek.

The following site location(s) are where the pipe(s) will be removed:

- Forest Road 438 – Willow Creek crossing (existing 48" diameter pipe). Rust line ~50% of pipe and inlet crushed by rock debris. Remove and replace with 54" CMP.
- Forest Road 50231 – Unnamed tributary (15" diameter CMP). Remove and replace with a 24" CMP. Add armor along inlet.
- Forest Road 50876 – Unnamed tributary of Sheep Creek (36" diameter CMP). Remove and replace with a 48" CMP.

**Culvert Removal Cost Estimate**

Item	UOM	Unit cost	# of units	Total Cost
Up-Size Culvert	Each	\$5,177	3	\$15,530

\*See Up-Sized Culvert treatment specification form for complete cost description

**Protection/Safety Treatments:**

**S1A 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.

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.

#### **Warning Signs Cost Estimate.**

Item	UOM	Unit cost	# of units	Total Cost
Warning Roadside & Trailhead Signs: “Entering Burned Area Warning”	Number of signs	\$525	8	\$4,200

#### **S3 Hazard Tree Falling**

The fire burned around trailheads and along critical pieces of trail that will require trail bridge repair. The treatment is to fall hazard trees at the 118 Trailhead (Van Wyck Trail), 131 Trailhead (Chief Eagle Eye Creek Trail), and 134 Trailhead (Poison Creek Trail). The treatment will also include falling hazard trees at the Poison Creek Trail Bridge and Van Wyck Trail Bridge, which will be replaced. The purpose of the treatment is to prevent damage to human life and safety from fire damaged trees. A dead tree is considered a hazard tree in a developed area setting. Falling of these trees will prevent unnecessary injury to the public or their property.

#### **Hazard Tree Falling Cost Estimate**

Item	UOM	Unit cost	# of units	Total Cost
Hazard Tree Falling	sites	\$1,166	5	\$5,830

#### **I. Monitoring Narrative:**

P1 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.

**PART VI – EMERGENCY STABILIZATION TREATMENTS AND SOURCE OF FUNDS**

			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										
P1 EDRR BAER-BOI		170	26.1	\$4,445						\$5,011
P1 EDRR Fire Supp.-BOI		170	88.6	\$15,091						\$17,011
P1 EDRR BAER-PAY		167	2.5	\$412	\$0		\$0		\$0	\$412
P1 EDRR Fire Supp.-PAY		167	38.5	\$6,426	\$0		\$0		\$0	\$6,426
Insert new items above this line!				\$0	\$0		\$0		\$0	\$0
Subtotal Land Treatments				\$26,374	\$0		\$0		\$0	\$26,374
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 Treatments				\$0	\$0		\$0		\$0	\$0
C. Road and Trails										
R1 Storm Proofing-BOI	Miles	1,844	8	\$14,752	\$0		\$0		\$0	\$14,752
R3 Storm Inspection and Re	Miles	601	8	\$4,808	\$0		\$0		\$0	\$4,808
R11Culvert Up-size BOI	Each	6,290	1	\$6,290						\$6,290
R11Culvert Up-size PAY	Each	4,620	2	\$9,240						\$9,240
Insert new items above this line!				\$0	\$0		\$0		\$0	\$0
Subtotal Road and Trails				\$35,090	\$0		\$0		\$0	\$35,090
D. Protection/Safety										
S1 Road Hazard Signs-BOI	Sign	525	4	\$2,100	\$0		\$0		\$0	\$2,100
S1 Road Hazard Signs-PAY	Sign	525	4	\$2,100	\$0		\$0		\$0	\$2,100
S3 Hazard Tree Falling-BOI	Site	1,166	5	\$5,830						\$5,830
Insert new items above this line!				\$0	\$0		\$0		\$0	\$0
Subtotal Protection/Safety				\$10,030	\$0		\$0		\$0	\$10,030
E. BAER Evaluation										
Initial Assessment	Report			\$75,000	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
Insert new items above this line!				---	\$0		\$0		\$0	\$0
Subtotal Evaluation				\$75,000	\$0		\$0		\$0	
F. Monitoring										
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
Insert new items above this line!				\$0	\$0		\$0		\$0	\$0
Subtotal Monitoring				\$0	\$0		\$0		\$0	\$0
G. Totals										
Previously approved				\$146,494	\$0		\$0		\$0	\$71,494
Total for this request				\$146,494						

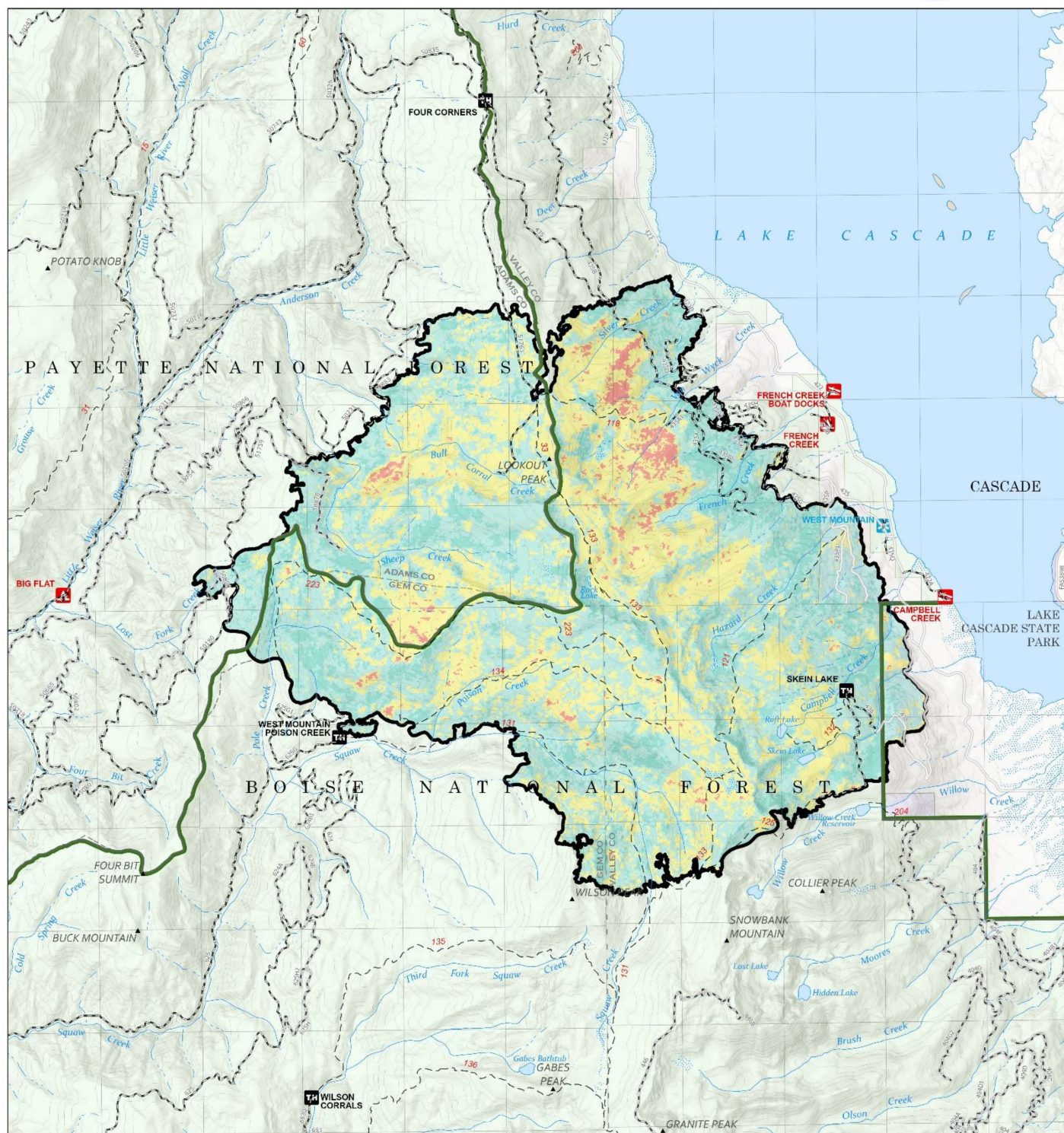




# Four Corners Fire BAER - Soil Burn Severity Boise and Payette National Forests, Region 4



Burned  
Area  
Emergency  
Response



Soil Burn Severity	Acres USFS	Acres Private	Percent
Unburned/Very Low	2338	72	16%
Low	6948	408	48%
Moderate	5217	81	34%
High	326	1	2%
<b>Total</b>	<b>14829</b>	<b>563</b>	<b>15393 acres</b>

Spatial Reference  
PCS: NAD 1983 UTM Zone 11N  
GCS: GCS North American 1983  
09/21/2022

## Soil Burn Severity

- High
- Moderate
- Low
- Unburned/Very Low

## Fire Perimeter

Proclaimed FS Boundary

- Forest Service Land

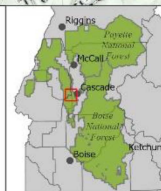
## Trails

## Roads

- Roads Open to All Vehicles, Yearling
- Roads Open to All Vehicles, Seasonal
- Roads Open to Highway Legal Vehicles Only, Yearling
- Roads Open to Highway Legal Vehicles Only, Seasonal
- Special Designation, Yearling
- Special Designation, Seasonal
- State or US Highway
- Other Public Roads

0 0.5 1 2 Miles

This map is a product of a USFS BAER rapid assessment, and is not drawn to scale. Further information concerning the accuracy and appropriate uses of this data can be obtained from the various resources on the Boise and Payette NFs. These geospatial data are related maps or graphics are not legal documents and are not intended to be used as such. Natural hazards may or may not be depicted on the data and maps, and land users should exercise caution.



**PART VII - APPROVALS**

1. \_\_\_\_\_  
Boise Forest Supervisor Date

2. \_\_\_\_\_  
Payette Forest Supervisor Date