

**Date of Report: 10-12-20****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: White River****B. Fire Number: OR-MHF 000859****C. State: Oregon****D. County: Wasco****E. Region: Pacific Northwest****F. Forest: Mt. Hood NF****G. District: Barlow****H. Fire Incident Job Code: P6NF56 (0606)****I. Date Fire Started: Aug. 17, 2020****J. Date Fire Contained: Sept. 28, 2020****K. Suppression Cost: 22,600,000****L. Fire Suppression Damages Repaired with Suppression Funds (estimates):** Click here to enter text.

- Fireline repaired (miles):** 32.38 miles of handline and dozer line were constructed and as of Oct. 11 roughly 9.7 miles had been repaired.
- Other (identify):** Click here to enter text.

**M. Watershed Numbers:***Table 1: Acres Burned by Watershed*

HUC #	Watershed Name	Total Acres	Acres Burned	% of Watershed Burned
170703060903	Upper White River	29,216	2,513	8.60
170703060906	Middle White River	17,554	11,159	63.57
170703060902	Boulder Creek	14,210	957	6.73
170703060901	Clear Creek	28,750	1,183	4.11
170703060904	Gate Creek	23,080	793	3.43
170703061106	Wapinitia Creek	31,305	807	2.58

**N. Total Acres Burned: 17,412***Table 2: Total Acres Burned by Ownership*

OWNERSHIP	ACRES
NFS	8,951
OTHER FEDERAL (BLM)	1,676
STATE	3,790

OWNERSHIP	ACRES
PRIVATE	2,995
TOTAL	17,412

- O. Vegetation Types:** Within the White River Fire the western portion of the fire is dominated by Douglas-fir, western hemlock, and true fir species, with stands of lodgepole pine. Pacific yew, western redcedar, red alder and black cottonwood are found in the riparian areas. The White River corridor as it moves east becomes narrow, steep and rocky, with patchy vegetation in the river canyon. Moving southeast, the fire burned primarily within the White River corridor, through transition zone moist-mixed conifer forests dominated by Douglas-fir, western hemlock and grand fir. The fire moved out of the river canyon and into upland dry mixed conifer forest communities. This plant community is dominated by ponderosa pine and Douglas-fir with populations of Oregon white oak on southern aspects.
- P. Dominant Soils:** The dominant soil orders within the White River fire perimeter include Inceptisols, Utisols, and Mollisols, with medial, ashy and/or lithic modifiers. Dominant soil textures are coarse to fine sandy loams. Soils within the burned area generally have extremely high rock content throughout the entire upper profile, ranging from 30% to 100%. Unconsolidated materials dominate the upper 1/3 backslopes of most landforms within the perimeter, with these being highly fragmental (>90% rock fragments).
- Q. Geologic Types:** The burned area of the White River Fire lies entirely within the Western Cascades Physiographic Province but sits east of the crest of the Cascade Mountains where the combination of a drier climatic regime and contrasting geology lead to a vastly different landscape. There are two bedrock units that compose the more gently sloping terrain east of Mt. Hood along the White River. The oldest unit is the Dalles Formation, which is composed of pyroclastic debris shed from volcanoes that were precursors to High Cascade volcanism, including Mt. Hood (Sherrod and Scott, 1995). The Dalles formation is exposed in the lower portion of the Lower White River Wilderness canyon and consists of weakly cemented sandstones, conglomerates, and siltstones. Overlying the Dalles formation are various basalt and andesite flows of the High Cascade Volcanic Province and include andesite of McCubbin's Gulch, basaltic andesite of Grasshopper Point, and basalts of Juniper Flat. These flows originated from vents further west, where repeated flows buried the Dalles formation and built a broad, low angle volcanic plain east of Mt. Hood. This plain gently slopes to the east and has a generally subdued topography, except where cut by drainages. Where the White River cuts through the ridge capping flows of the High Cascades and exposes the lower and weaker Dalles Formation, undercutting causes landslides that create large talus aprons along the lower White River's banks. Overlying the volcanics of the High cascades are glacial deposits derived from glaciers originating on the slopes of Mt. Hood, and terminating in the vicinity of Keeps Mill (modified from Smith and Roe, 2015). Although the White River Glacier has been continually receding since the end of the Pleistocene approximately 12kya, it continues to produce debris flows that contribute large volumes of sediment to the White River. Annual large flood events continue to move glacial debris down the valley and cause small translational slides in glacial deposits along the margins of valley walls.

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

*Table 3: Miles of Stream Channels by Order or Class*

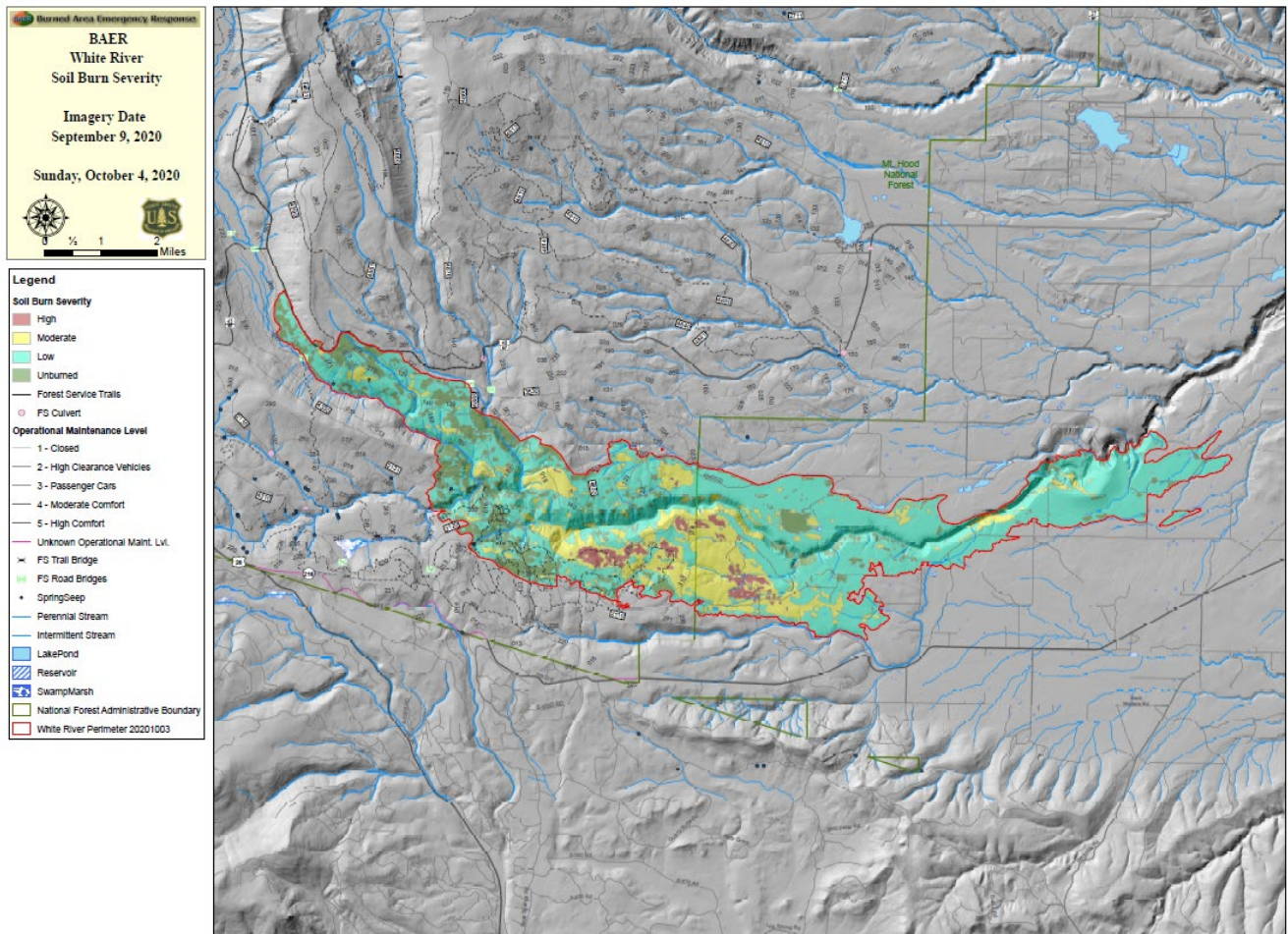
STREAM TYPE	MILES OF STREAM
PERENNIAL	23.96
INTERMITTENT	28.54
EPHEMERAL	2.21
BOULDER DITCH	3.53

**S. Transportation System:**

<b>Trails:</b> National Forest (miles): 20.72	Other (miles): 46.86
<b>Roads:</b> National Forest (miles): 39.88	Other (miles): 0

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

Soil Burn Severity	NFS	Other Federal (BLM)	State	Private	Total	% within the Fire Perimeter
Unburned	2,173	135	251	128	2,687	15.11
Low	4,666	1,298	2,688	2,612	11,264	63.38
Moderate	1,632	226	757	776	3,391	19.08
High	236	38	154	2	430	2.43
<b>Total</b>	<b>8,707</b>	<b>1,697</b>	<b>3,850</b>	<b>3,518</b>	<b>17,773</b>	<b>100%</b>



- B. Water-Repellent Soil (acres):** Natural hydrophobicity is present in the volcanic ash soils found within the fire and was variable during field verification in unburned, low, and moderate burn severities. Fire-induced or altered hydrophobicity occurred on approximately 12% of soils (100% of severely burned soil and 50% of moderately burned soil), or around 2,126 acres.
- C. Soil Erosion Hazard Rating:** 478 acres Very Slight (5%), 5288 Slight (58%), 543 acres Slight-Moderate (5%), 1367 acres Moderate (15%), 296 acres Moderate-Severe (3%), 103 acres Severe (1%), with other areas not rated because of rock outcrops or other ownership.
- D. Erosion Potential:** Inherent surface soil erosion on forested upland soils throughout the fire is slight to moderate. Throughout the fire, most slopes are between 5 and 20 percent which greatly reduces risk of erosion. On slopes greater than 20 percent, where erosion is inherently higher, the soil burn severity is

predominantly low to unburned. The likelihood of erosion exceeding background levels on this fire are minimal.

- E. Sediment Potential:** The White River inherently produces sediment from glacial erosion on Mt. Hood. Sedimentation through the White River drainage is expected to stay within background levels. The mosaic burn pattern and mellow slopes greatly reduce fire-induced increases in sediment potential.

**F. Estimated Vegetative Recovery Period (years):** 2-5 years

**G. Estimated Hydrologic Response (brief description):** Hydrologic response following wildfire in the White River Fire burned area will include reduced interception and infiltration of precipitation, increased runoff and erosion, higher stream flow volumes for a given precipitation or snowmelt input, and a more rapid rise of stream and river levels compared with those of unburned conditions (Callery and Krezlok, 2020). Due to limited area (22%) in high and moderate soil burn severity classes on National Forest System Lands and the impact of irrigation diversions streamflow impacts from the fire are expected to be minimal and were not modeled for the streams other than White River.

Area Analyzed	Drainage Area	Burn Severity (Acres)				Pre-Fire Q5 (cfs)	Post-Fire Q5 (cfs)	% Difference	Times Difference
		High	Mod	Low	Unburned				
White River at bottom of fire perimeter	82,560 (ac) 129 (mi <sup>2</sup> )	430	3,391	11,265	67,474	2,480	2,594	4.6%	1.04 X
White River at FS boundary	74,880 (ac) 117 (mi <sup>2</sup> )	430	3,391	11,265	59,794	2,310	2,428	5.1%	1.05 X

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

### **Introduction/Background**

The White River fire was caused by lightning on August 17. Hot, dry weather, low humidities and drought conditions increased fire behavior causing it to quickly move into the White River Canyon towards private and BLM lands. At its peak there were over 1,200 personnel, 89 engines, 9 dozers, 17 water tenders, and 9 helicopters supporting the incident. On Sept. 28 the fire was contained and management short there after turned back to the Mt. Hood National Forest.

### **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	Very High	Very High	Low
Likely	Very High	High	Low
Possible	High	Intermediate	Low
Unlikely	Intermediate	Low	Very Low

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

Value	Probability	Consequence	Rating	Threat
Motorized Trails and Roads	Possible	Major	High	Some trails and roads go through moderate and high intensity burn areas and are prone to fire killed standing and down trees
4800 Road	Likely	Major	Very High	Hazard trees are present along road where guardrail needs to be replaced. Traffic can go over steep embankment without guardrails in place.

**2. Property (P):**

Value	Probability	Consequence	Rating	Treat
Lost Boulder Irrigation Ditch	Likely	Major	Very High	Portions of earthen ditchline goes through high and moderate intensity burn areas. Hazard trees may fall on ditch and breach it sending water down steep burned slopes.
4800 Road	Likely	Major	Very High	Fire burned guardrail posts along 1.54 miles of the 4800 road. Road is the main route between state HWY. 35 and town of Wamic and needs to be kept open.

**3. Natural Resources (NR):**

Value	Probability	Consequence	Rating	Treat
Native and Natural Plant Communities	Very Likely	Moderate	Very High	Localized noxious and invasive weed populations exist immediately adjacent to the burned area and area disturbed by suppression. Plants will compete aggressively with native species for space and nutrients.
Wild and Scenic River - White River.	Unlikely	Minor	Very Low	The river possesses ORVs for scenic and recreation. Post fire risks to ORVs is very low, but fire impacted views in some areas.

**4. Cultural and Heritage Resources:**

Value	Probability	Consequence	Rating	Treat
Keeps Mill Flume and Barlow Road	Possible	Minor	Low	Sites occur in low severity burn areas.

**B. Emergency Treatment Objectives:** Reduce threats to:

- Human life and safety on roads and trails in high and moderate severity burn areas by installing warning signs.
- Human life and safety from going off the road on steep slope by replacing burned posts and collapsed guardrails on the 4800 that provides the main access between state Hwy. 35 and towns of Tyge Valley and Wamic.
- Impacts to Forest Service property (Lost Boulder ditch) and water use by selectively dropping hazard trees in high and moderate intensity burn areas where trees could breach the diversion and increase in already burned areas.
- Native plant communities by reducing the spread invasion of noxious weeds within the area, especially along and adjacent to Forest roads and dozer lines used by fire equipment and in existing populations within and adjacent to the fire boundary.

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

Land 80%

Channel NA

Roads/Trails NA

Protection/Safety 100%

**D. Probability of Treatment Success**

Table 6: Probability of Treatment Success

	1 year after treatment	3 years after treatment	5 years after treatment
Land	80	85	85
Channel	--	--	--
Roads/Trails	--	--	--
Protection/Safety	100	100	100

**E. Cost of No-Action (Including Loss):** Refer to attached Values at Risk (VAR) spreadsheet for specific costs.

The VAR analysis summary identified that the total treatment cost is estimated at \$88,666 with an expected benefit of \$5,175. The cost benefit ratio is less than 1 (0.1) due to most treatments addressing non-market values (human life and safety) and native/naturalized communities where market values can't be prescribed.

**F. Cost of Selected Alternative (Including Loss):** Refer to attached Values at Risk (VAR) spreadsheet for specific costs

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

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

**Team Leader:** John Chatel

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**Phone(s):** 971-801-5379

**Forest BAER Coordinator:** Todd Reinwald

**Email:** todd.reinwald@usda.gov

**Phone(s):** 971-325-5153

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

Skill	Team Member Name
Team Lead(s)	John Chatel, Todd Reinwald
Soils	Mary Young, Luke Cerise
Hydrology	Todd Parker, Hazel Wood
Engineering	Pete Huppi, Kevin Duchow
GIS	Kim Vieira, Susanne Campbell
Archaeology	Trent Skinner, Ayme Swartz
Weeds	Jennifer Miner, Christina Mead
Recreation	Jeremy Evans, Eric Amstad
Other	Ryan Cole, Chuti Fiedler

**H. Treatment Narrative:**

**Land Treatments:**

**Early Detection Rapid Response Invasive Plant Treatments**

**Purpose of Treatment:** The purpose of these treatments is to respond to the potential for rapid invasion of invasive plants into native plant communities on the Mt. Hood National Forest. EDRR is prescribed in order to mitigate long term impacts to native plant communities within and in the vicinity of fire boundaries. The purpose of treatments is to promote native plant resources by removing invasive plant populations.

**General Description:**

- Invasive plant detection surveys – Known infestations of high priority invasive plants within high and moderate burn severity in the White River Fire area will be assessed for potential spread or expansion. The White River fire burned within and adjacent to several very large known infestations, so surveys will focus on areas bordering wilderness and habitats without heavy infestations. When assessment actions are initiated, personnel will be equipped to immediately treat infestations. This will allow for the best chance of managing known infestations to prevent an expansion from pre-fire levels. Additionally, detection surveys will be focused in areas of increased probability of infestation (e.g. Roads, trails, fire lines, drop points, helispots, staging areas, safety zones and BAER implementation impacts). BAER funding authorization will be used for the first year (starting October 2020) to meet objectives above. Existing or future partnerships and contracts may be used to monitor and/or treat invasive plants on National Forest System Lands.
- Treatment of known invasive plant sites and new sites detected through surveys – Objective is to strategically treat known infestations adjacent to areas of high spread risk (currently estimated to be roughly 5 acres). Strategic treatments include roadside populations within moderate and high soil burn severity which border the White River Wilderness. Surveys for expansion of invasive species into



natural habitats areas due to fire severity are estimated as 9 acres. These surveys are also within moderate and high severity burned areas and follow an existing OHV trail which enters the White River Wilderness.

**Location (Suitable) Sites:** Known and expected invasive plant sites within and directly adjacent to the White River Fire area on National Forest System Lands. 863 acres of suppression related disturbance (dozer line, handlines, etc.) and 19 acres of potential spread into moderate and high intensity burn areas will have EDRR surveys and treatment as needed. Proposed locations for surveys are along vector corridors and within high and moderate severity burned areas within the White River Fire. Existing known invasive plant locations are included in the accompanying map and will be treated in a strategic manner. New sites found during EDRR surveys will be treated to the extent possible with priority given to sites within or near to fire lines, sensitive habitats and the White River Wilderness. See the map that accompanies this proposal for more specific location information.

**Design/Construction Specifications:** Detection surveys entail hiking or driving vector corridors and hiking within areas of high and moderate burn severity. Survey protocols include GPS mapping, flagging, and documenting occurrences. Treatments could include manual removal and herbicide application. Herbicide application would be conducted by a contractor or by the Wasco County Weedmaster (through an existing Participating or Stewardship Agreement). Application would be made with a boom-mounted spray truck or ATV.

### **Lost Boulder Diversion Hazard Tree Removal and Inspection**

**Purpose of Treatment:** The threat of hazard trees falling into and obstructing the ditch or breaching it could add significant damage to downhill soils and water quality. This could be mitigated through the falling of trees identified to be hazardous.

**General Description:** Forest service has a ditch/canal (Lost Boulder Ditch) within the White River Fire that pass-through areas where the severity of the burn is moderate and high are at risk of having burnt and dying trees. This ditch provides water to multiple agricultural producers. During high wind events, these hazard trees pose a risk of falling into the ditch and obstructing flow and potentially rendering the ditch ineffective and spilling water down hillslopes that have had significant fire severity.

**Location (Suitable) Sites:** The initial area to first concentrate the removal of hazard trees is on Boulder Ditch in areas of high and moderate burn severities. While accessing the ditch within the higher burn severities, also identify those hazard trees that lie along the roads in the lower burn severities.

**Design/Construction Specifications:**

- FS personnel will prepare and administer the contract.
- Estimated length of ditch in Moderate and High burn severity areas total 0.51 miles.
- Assume the removal of hazard trees production rate of 1 mile a day by a hand crew and an excavator with operator to move trees off of roads and cut slopes. Hazard trees will be directionally felled away from the ditch to preserve its integrity.

### **Channel Treatments: No Treatments Proposed**

### **Roads and Trail Treatments: No Treatments Proposed**

#### **Protection/Safety Treatments:**

##### **Road Guardrail Replacement and Select Hazard Tree Removal**

**Purpose of Treatment:** Protection of motorists who travel along Wamic Road.

**General Description:** During the White River Fire, a section of guardrail located along Wamic Road (FSR #4800) was burned causing the timber posts to separate from the metal rail. These posts that were burned will be replaced with new posts and attached back to the original guardrail where possible and a new section of metal guardrail where needed.

**Location (Suitable) Sites:** The guardrail is located along Wamic Road (FSR #4800) approximately 1 to 3 miles south of the intersection of FSR 4800 and FSR 4300.

**Design/Construction Specifications:** Replacement of the damaged guardrail and posts shall be per Section 617 of the FP14-Standard Specifications for Construction of Roads and Bridges on Federal

## Highway Projects.

**Road Hazard Warning for Roads**

**Purpose of Treatment:** The purpose of “Burned Area Warning Signs” is to reduce the risks to human life and safety by alerting motorists of existing threats while traveling the authorized routes within the areas susceptible to flooding, debris flows, hazards trees, and all other risks attributable to post fire events on the landscape. Replacement of the burned Regulatory and Warning signs is necessary at intersections and bridge approach ends to identify potential hazards, thus conforming to the FS Sign and Poster Guidelines and MUTCD. Replacement of the pre-existing route and roadside hazard markers burned or melted by fire are both for safety, and public reassurance of location on FS system roads, as stipulated in the Forest Travel Management Plan and the Motor Vehicle Use Map.

**General Description:** This treatment is for installation of “Entering Burned Area” warning signs and replacement of burnt or fire damaged warning signs, roadside hazard and route markers.

**Location (Suitable) Sites:** “Burned Area” warning signs will be located at all points of entries by use of forest system roads into the burned areas. These locations are as follows:

- On FSR 2110000, Just South of 2110/2110250 junction
- On FSR 2120000, Just East of 2120/2110250 junction
- On FSR 4800000, North end of fire near 4800/4300 junction
- On FSR 4800000, East end of fire near 4800/4885 junction

**Design/Construction Specifications:** “Burned Area” warning signs along the roads shall measure, at a minimum, 30 inches by 36 inches and consist of 0.08” aluminum, sheeted in high intensity yellow with black letters, which is shown in the photo below. The “BURNED AREA” lettering shall be a minimum of 5 inches in height and all remaining lettering shall not be less than 3.5 inches in height. Traffic Warning, Road Closure, and Barricade Markers Signs shall conform to the M.U.T.C.D. standards and shall be installed per Federal Highway Safety Standards.

**Trail Hazard Warning**

**Purpose of Treatment:** The public needs to be made aware of the hazards associated with post-fire events, such as falling objects, hazard trees (especially during wind events), mud slides and rolling rocks (especially during heavy rain events), and potential for flooding (especially during heavy rain events). These hazard warning signs will inform the public, increase safety, and transfer responsibility of post-fire effects safety to the public.

**General Description:** Install hazard warning sign at recreation sites to inform the public of the hazards associated with post-fire events, such as falling objects, hazard trees (especially during wind events), mud slides and rolling rocks (especially during heavy rain events), and potential for flooding (especially during heavy rain events).

**Location (Suitable) Sites:**

- Mccubbins Gulch DU OHV Picnic Area
- Camas #490-A Trailhead
- Camas #490-A 2120 Access
- Clear Creek (x2)
- Forest Creek
- Keeps Mill
- Barlow Crossing
- White River Station
- Mccubbins Gulch
- Nandor H. Pinter Memorial Day Use Area

**Design/Construction Specifications:**

- Install hazard warning sign at each of the above listed recreation sites.
- Sink a U-channel post or Square tube post at the entrances to the listed sites. Place in conspicuous locations.



- Mount 36" X 24" Polyflex or Aluminum signs (with pre-drilled holes) to U-channel or Square tube posts. Use fender washers if necessary, to prevent bolt head from pulling through sign during high wind events.
- Periodically check signs and maintain or replace as needed.

## **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											
Noxious Weed EDRR Suppr	Acre	49	354	\$17,169	\$0			\$0		\$0	\$17,169
Noxious Weed EDRR Non-S	Acre	91	19	\$1,727	\$0			\$0		\$0	\$1,727
Lost Boulder Diversion	Day	1	3175	\$3,175	\$0			\$0		\$0	\$3,175
Insert new items above this line!				\$0	\$0			\$0		\$0	\$0
Subtotal Land Treatments				\$22,071	\$0			\$0		\$0	\$22,071
B. Channel Treatments											
				\$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											
				\$0	\$0			\$0		\$0	\$0
Insert new items above this line!				\$0	\$0			\$0		\$0	\$0
Subtotal Road and Trails				\$0	\$0			\$0		\$0	\$0
D. Protection/Safety											
Trail Warnng Signs	Each	325	11	\$3,575	\$0			\$0		\$0	\$3,575
Road Warning Signs	Each	570	6	\$3,420	\$0			\$0		\$0	\$3,420
Road Guardrails	Each	59,600	1	\$59,600	\$0			\$0		\$0	\$59,600
Insert new items above this line!				\$0	\$0			\$0		\$0	\$0
Subtotal Protection/Safety				\$66,595	\$0			\$0		\$0	\$66,595
E. BAER Evaluation											
Initial Assessment	Report	\$50,587	1	---	\$50,587			\$0		\$0	\$50,587
				\$0	\$0			\$0		\$0	\$0
Insert new items above this line!				---	\$0			\$0		\$0	\$0
Subtotal Evaluation				\$0	\$50,587			\$0		\$0	\$50,587
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				\$88,666	\$50,587			\$0		\$0	\$139,253
Previously approved											
Total for this request				\$88,666							

**PART VII - APPROVALS**

1. \_\_\_\_\_ 10/16/2020  
 Forest Supervisor Date