Date of Report:10/20/2021

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: Rough Patch Complex

B. Fire Number: OR-UPF-000373

C. State: OR

D. County: Douglas and Lane

E. Region: 06

F. Forest: Umpqua National Forest

G. District: North Umpqua, Cottage Grove, Diamond Lake, and Tiller

H. Fire Incident Job Code: P6N68U

I. Date Fire Started: 7/29/2021

J. Date Fire Contained: 10/31/2021 (estimated)

K. Suppression Cost: $50,756,803 (as of 10/5/2021)

L. Fire Suppression Damages Repaired with Suppression Funds (estimates):

1. **Fireline repaired (miles):** Across all ownerships, as of 10/05/2021, 16.2 miles of fireline repair completed out of a total of 36.9 miles. 8.8 miles of dozer line repair completed of 18.9 total miles and 7.4 miles of hand line repair completed of 18 total miles. 3 miles of fireline are showing as 'no repair needed'.
2. **Other (identify):** As of 10/05/2021, 5 repair points (dozer push, drop point) out of 85 are completed. 2 locations are shown as 'no repair needed'. No culverts are reported repaired to date out of a total of 35.

M. Watershed Numbers:

Watershed	*Subwatershed*	*HUC 12*	*Subwatershed Acres*	*Acres Burned*	*% Burned*
Row River	Brice Creek	170900020202	36,258	293	0.8%
	Sharps Creek	170900020203	42,533	22	0.05%
Middle North Umpqua	Calf Creek	171003010804	12,589	1,910	15.2%
	Copeland Creek	171003010802	22,996	2,290	10%
Steamboat Creek	Headwaters Steamboat Creek	171003010701	33,105	16,924	51.1%

	Upper Steamboat Creek	171003010702	14,940	10,239	68.5%
	Big Bend Creek	171003010703	18,506	4,739	25.6%
	Middle Steamboat Creek	171003010704	11,732	298	2.5%
Canton Creek	Upper Canton Creek	171003010601	13,045	5,947	46.6%
Headwaters South Umpqua River	Black Rock Fork	171003020102	20,591	3,947	19.2%
	Quartz Creek	171003020103	11,761	3,082	26.2%
	Skillet Creek-South Umpqua River	171003020105	11,460	1,554	13.6%

N. Total Acres Burned:

Table 1: Total Acres Burned by Ownership

OWNERSHIP	ACRES
NFS	50588.40
OTHER FEDERAL (LIST AGENCY AND ACRES)	
STATE	
PRIVATE	534.37
TOTAL	51122.78

O. Vegetation Types: The Rough Patch Complex has impacted multiple vegetation communities on Forest Service land. A primarily Western hemlock, Douglas fir, Sugar pine and Incense cedar forest dominates the slopes, with understories of Golden chinquapin, Pacific rhododendron, snowbrush and manzanita. Primary ground cover species include Vanilla leaf and Dwarf Oregon grape. At higher elevations, there are also White fir and Red fir mixed into the canopy. Down in the much moister creek draws, Douglas fir, Big-leaf Maple and Grand fir cover populations of Pacific dogwood, Salal, Vine maple and Sword fern. These ecosystems also host rare and sensitive plant, lichen, and fungus species. Hardwood- and shrub-dominated patches also contribute to ecosystem diversity.

P. Dominant Soils: Dominant soils originate from residuum and colluvium with components of Mazama volcanic materials and a minor components of volcanic ash deposits. Soils are largely gravelly and cobbly loams with varying amounts of rock content, generally increasing in depth. Soils tend to be shallow to moderately deep with depth to bedrock less than 3 feet up to 8 feet. Dominant soils generally originate from andesites to basalts as well as areas of weathered breccias and tuffs. The majority of soils have a low to moderate erosion hazard rating.

Q. Geologic Types: The fire is within the Western Cascade Range that consists of deep narrow valleys and rugged topography. The rock formations have been extensively modified by stream erosion and slope instability. Geology consists largely consists of basaltic and andesite lava flows, breccia, tuff, and mudflow deposits.

R. Miles of Stream Channels by Order or Class:

Table 2: Miles of Stream Channels by Order or Class

STREAM TYPE	TOTAL MILES	HIGH	MODERATE	LOW	UNBURNED	OUTSIDE FIRE
PERENNIAL	137.90	0.00	3.87	90.00	39.33	4.70
INTERMITTENT	258.35	0.12	15.57	166.92	70.53	5.20

STREAM TYPE	TOTAL MILES	HIGH	MODERATE	LOW	UNBURNED	OUTSIDE FIRE
EPHEMERAL						
OTHER (ARTIFICIAL PATH)	0.22	0.00	0.00	0.19	0.03	0.00

S. **Transportation System:**

Trails: *National Forest (miles):* 437.01 *Other (miles):* N/A

Roads: *National Forest (miles):* 186.58 *Other (miles):* 2.1

Forest Service Roads by Operational Maintenance Level

1 - BASIC CUSTODIAL CARE (CLOSED):	19.91
2 - HIGH CLEARANCE VEHICLES:	149.21
3 - SUITABLE FOR PASSENGER CARS:	12.61
4 - MODERATE DEGREE OF USER COMFORT:	4.84

PART III - WATERSHED CONDITION

A. Burn Severity (acres):

Table 3: Burn Severity Acres by Ownership

Soil Burn Severity	NFS	Other Federal (List Agency)	State	Private	Total	% within the Fire Perimeter
Unburned	12314.29			151.76	12466.06	24.38%
Low	34091.41			238.60	34330.02	67.15%
Moderate	4011.51			139.06	4150.57	8.12%
High	171.19			4.95	176.14	0.34%
Total	50588.40			534.37	51122.78	

B. Water-Repellent Soil (acres):

Water Repellency	Acres	Percent of fire
None	31,241	61%
Weak	10,413	20%
Moderate	4,734	9%
Strong	4,734	9%

C. Soil Erosion Hazard Rating:

Soil Erosion Rating	Acres	Percent of Fire
Low	18,885	37%
Moderate	27,978	55%
High	3,999	8%

D. Erosion Potential:

Soil Erosion Estimates (tons/acre/year)		
Soil Burn Severity	**Averages**	
	2-year	**5-year**

	50% probability	20% probability
Low	2.1	5.0
Moderate	3.5	7.4
High	5.3	9.9

E. Sediment Potential: 500-1,250 cubic yards/mile

F. Estimated Vegetative Recovery Period (years): 1-2 years

G. Estimated Hydrologic Response (brief description): Anticipated watershed response based on field observations, modeling, and professional experience include: 1) an initial flush of ash, 2) rill and gully erosion in drainages and on steep slopes within the burned area, 3) floods with increased peak flows and sediment deposition. These responses are expected to be greatest in initial storm events, and will become less evident as vegetation is reestablished, providing ground cover, increasing surface roughness, and stabilizing and improving the infiltration capacity of the soils. The estimated vegetative recovery for watersheds affected by the Rough Patch Complex is expected to be approximately 2 to 5 years in most places.

PART V - SUMMARY OF ANALYSIS

Introduction/Background: The Rough Patch Complex started July 29, 2021 when 20-plus lightning fires resulted from thunderstorms in the area. The Rough Patch Complex consists of four fires: Chaos and Little Bend fires within mostly within the Steamboat Creek drainage, and the Buckhead and Near Minky which straddle the divide between North Umpqua/Diamond Lake Districts and the Tiller District.

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

Critical Values identified during the BAER assessment that have potential to be at risk as defined in FSM 2523.1 include human life and safety of employees and public, FS property (roads, trails, administrative, recreation infrastructure), cultural resources, natural resources including Threatened and Endangered species habitat, native plant communities, soil and water resources. The BAER team evaluated the risk to these critical values in accordance with the Interim Directive No. 2520-2019 by using the BAER risk assessment. The

Archie Creek Fire Critical Value table is attached as Appendix.

Table 4: Critical Value Matrix

Probability of Damage or Loss	**Magnitude of Consequences**		
	Major	Moderate	Minor
	RISK		
Very Likely	**Very High**	**Very High**	**Low**
Likely	**Very High**	**High**	**Low**
Possible	**High**	**Intermediate**	**Low**
Unlikely	**Intermediate**	**Low**	**Very Low**

Value	Life/ Property/ Resources	Critical Value	Threat to Value	Probability of Damage or Loss	Rationale for Probability	Magnitude of Consequence	Rationale for Magnitude	Risk	Treatment Options Considered	Recommended Treatment
BAER critical value	Life and Safety	Musick Guard Station	Injury from remnants of burned barn	Likely	Exposed rubble from burned building, possibility of safety hazards. Next to high use rec rental	Moderate	Risk of injury from exposed safety hazards	High	Evaluate and remove materials that pose a safety hazard to recreating public	S12. Evaluate and remove materials in burned barn that pose a safety hazard to recreating public
BAER critical value	Life and Safety	Bohemia Trail #1407	Hazard trees; slides and falling debris.	Possible	Existing conditions could worsen over the winter and increase threat to human safety.	Major	Potential for injury or death is possible	High	Install advisory signs. Storm proof.	Covered by road hazard signs
BAER critical value	Life and Safety	Saddle Camp Shelter	Hazard trees within striking distance.	Possible	Fire burned up to trail next to shelter.	Major	If tree falls, risk of injury or death is possible.	High	Removal of hazard trees within striking distance, sign and close shelter	S1b. Sign and close shelter
BAER critical value	Life and Safety	Dispersed Campsites in Steamboat Drainage	Hazard Trees	Possible	Hazard trees exist around unofficial dispersed campsites	Major	Possibility of injury or death.	High	Install BAER advisory signs.	S1b. Install BAER advisory sign at the bottom of Steamboat Creek Rd (38) for the general area.
BAER critical value	Life and Safety	Interior Fire Roads 2715563, 2715565, 2715560, 2715570, 2715550, 2715560, 2715566, 2715558, 2715550, 2715550, 2715575	Rockfall, debris flows, and sediment delivery	Possible	High & moderate burn severity and tree mortality pose a significant risk to any recreating public,rock fall and danger trees in high snow areas pose threat	Major	Life loss or injury to humans	High	Danger tree fell, close roads with gate, close roads with signage, close roads with administrative closure	S1a and S12. Close roads and motorized trails with signage and administrative closures. Place signs on main roads at entry of fire
BAER critical value	Natural Resources - T&E habitat	T&E Species; Northern spotted owl activity centers, nest sites and critical habitat.	Impacts from the fire could result in additional mortality to remaining live trees and further reduce NSO suitable habitat and usable Critical Habitat and threaten the viability of owl sites.	Very Likely	Additional loss of habitat and additional mortality is expected during the first year. Probability is high for additional loss of habitat.	Moderate	Long Term Risk of Loss of Additional Habitat: value there is a moderate probability that some suitable habitat will become unsuitable or dispersal-only habitat during the next decade	Very High	No BAER treatments.	No BAER Treatments.

Value	Life/ Property/ Resources	Critical Value	Threat to Value	Probability of Damage or Loss	Rationale for Probability	Magnitude of Consequence	Rationale for Magnitude	Risk	Treatment Options Considered	Recommended Treatment
BAER critical value	Natural Resources - T&E habitat	T&E Species; Franklin's bumble bee habitat in areas of 50-100% burn severity.	Loss of suitable habitat by invasive plant invasion in areas with 50-100% basal area loss.	Possible	Suitable habitat is adjacent to known locations of noxious weeds or areas likely to become infested. There are no known current locations of the species.	Moderate	There are no records of Franklin's bumble bee within the fire area or adjacent to it and little is known about the current occupancy of the species on the Forest. However, the magnitude of consequence is high given the impacts of noxious weeds on native plant communities & available suitable habitat for Franklin's bumble bee.	Intermediate	Invasive EDRR (see botany critical values)	None, Franklin's bumblebee will benefit from P1a. Invasive EDRR (see botany critical values)
BAER critical value	Natural Resources - T&E habitat	Critical Habitat for Oregon Coast Coho Salmon	Sediment, peak flow, temperature	Possible	Coho habitat downstream of fire areas. Increased sediment and flows as predicted by hydrology and soils analysis	Moderate	Moderate and high soil burn severity upstream of critical habitat may result in short term increase in sediment delivery to spawning areas.	Intermediate	See road and trail treatments	See road and trail treatments
BAER critical value	Natural Resources - Native Plants	Intact native plant communities	Invasive plant colonization of areas with 50-100% basal area loss	Very Likely	Infestations of listed noxious weeds are present throughout the Jack Complex. These species rapidly colonize in bare soil and high-light conditions. Intact native plant communities are now threatened with alteration and type conversion from introduced noxious weeds.	Moderate	Noxious weeds severely reduce plant diversity and habitat for other species, especially in unique habitats with rare or endemic plants. Native plant communities and ecosystem functions are very difficult to restore once noxious weeds are established.	Very High	P1a. Invasives EDRR	P1a. Invasives EDRR
Other FS value	Natural Resources - Native Plants	Suppression Repair- Prevention of noxious weeds in intact plant communities	Invasive plant colonization of areas disturbed by suppression	Very Likely	Clearing fire lines and staging, camp, and safety areas removed canopy and exposed mineral soil adjacent to known populations of noxious weeds, creating ideal conditions for new populations to establish	Moderate	Native plant communities and ecosystem functions are very difficult to restore once noxious weeds are established.	Very High	P1b. Invasives EDRR - Suppression	P1b. Invasives EDRR - Suppression
BAER critical value	Property - Other	Musick Guard Station	Hazard trees exist around main guard station	Likely	Fire has weakened trees within	Major	If tree falls, damage will be significant to existing structure.	Very High	Fall hazard trees. Close site.	S12. Fall hazard trees. Close site until work is completed.

Value	Life/ Property/ Resources	Critical Value	Threat to Value	Probability of Damage or Loss	Rationale for Probability	Magnitude of Consequence	Rationale for Magnitude	Risk	Treatment Options Considered	Recommended Treatment
					striking distance of guard station.					
BAER critical value	Property - Roads	Roads 3818100, 3825	Washouts and/or stream diversions due to road/stream crossings and road drainage plugging or over capacity. Debris flows initiated by road drainage issues.	Likely	Pipes likely undersized, and often in some state of disrepair	Moderate	Moderate property damage to roads. Stream diversions have potential to cause larger landslides and potential to deliver sediment to CHU streams	High	Storm inspection and response. Road stabilization.	R1. Stormproofing, ie. clean inlets, install additional waterbars or drainage dips in roadway
Property - Roads	Property - Roads	Roads 3825, 3825-100, 2715550, 2814500	Increased runoff and debris flows	Likely	Increased post fire runoff and debris flows have increased likelihood to damage roads	Moderate	Substantial property damage	High	Storm inspection and response	R3. Storm inspection and response
BAER critical value	Cultural Resources	1501162 Musick Guard Station	Possible collapse of pump house from fire damage. Possible damage to pipes from fire.	Possible	structural integrity of the pump house may be compromised from fire. If pipes are damaged from fire freeze/thaw cycle may create more damage	Major	Musick Guard station is eligible to the NRHP, with the pump house as a contributing element to the eligibility. If the pump house is lost, there will be damage to the integrity of the historic site.	High	repair to pump house, rebuild with hardy plank rather than in kind to protect from future fire	No treatment. Refer project to Rehab Pilot

B. Emergency Treatment Objectives:

The primary objective of this Burned Area Emergency Response Report is to recommend treatments to manage identified unacceptable risks from "imminent post-wildfire threats to human life and safety, property, and critical natural resources on National Forest System lands" (FSM 2523.02). These treatments are expected to substantially reduce the probability of damage to identified BAER critical values. Below, the objectives are the proposed treatments are included.

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

Land: 90
Channel: N/A
Roads/Trails:75
Protection/Safety:75

D. Probability of Treatment Success

Table 5: Probability of Treatment Success

	1 year after treatment	***3 years after treatment***	***5 years after treatment***
Land	75	75	80
Channel	N/A	N/A	N/A
Roads/Trails	80	80	80
Protection/Safety	80	80	85

E. Cost of No-Action (Including Loss): $90,580

Human Life and Safety – Without signs describing hazards present in the burned area, a forest user could be unaware of risks and proceed without further consideration for their safety. Exposure to falling rocks, hazard trees, route loss and flooding are among the threats identified. The significance of protecting human life and safety is assumed self-evident and not included in the calculations used below to justify treatments.

Property – Certain road segments have been identified as being susceptible to damage by post-fire peak flows and increased runoff. A method called the Implied Minimum Value (IMV) is recommended by BAER leadership to determine the cost-benefit ratio for values at risk where market value is not available Calkin et. al., (USDA 2007). An IMV is assigned to the Property Values at Risk which equals **$29,000.**

IMPLIED MINIMUM VALUE
Estim. cost of treatments: $17,400
Estim. Probability of Damage or Loss w/o Treatment: 80%
Estim. Probability of Loss if Treated: 20%
IMV = Treatment Cost/(Probability Loss Untreated - Loss Treated)
Implied Minimum Value (IMV) for Property $17,400/(0.8-0.2) = $29,000

Natural Resources – Without treatments to minimize post-fire effects from the spread of known populations of invasive plant species, there is a risk of diminishing native vegetation and ecosysyem diversity in

wilderness and the areas. Using the IMV method, the value of the native plant communities in threatened areas is **$42,730**.

IMPLIED MINIMUM VALUE
Estim. cost of treatments: $25,638
Estim. Probability of Damage or Loss w/o Treatment: 80%
Estim. Probability of Loss if Treated: 20%
IMV = Treatment Cost/(Probability Loss Untreated - Loss Treated)
Implied Minimum Value (IMV) for Property $25,638/(0.8-0.2) = $42,730

F. Cost of Selected Alternative (Including Loss): $61,888

G. Skills Represented on Burned-Area Survey Team:

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

Team Leader: Joe Blanchard
Email: joseph.blanchard@usda.gov **Phone(s)** 203-241-7340

Forest BAER Coordinator: Joe Blanchard
Email: joseph.blanchard@usda.gov **Phone(s)** 203-241-7340

Team Members: *Table 6: BAER Team Members by Skill*

Skill	Team Member Name
Team Lead(s)	Joe Blanchard
Soils	Sarah Brame, Ut Huynh (t)
Hydrology	Dan Dammann
Engineering	Steve Hanussak, Dylan Hokanson (t), Richard Childs (t)
GIS	Kim Viera-Rainville, Mat Vandermolen
Archaeology	Chris Kelly, America Freeman (t)
Weeds	Crystal Shepard, Devin McMahan (t)
Recreation	Skyler Ogden, Jennifer Taylor (t), Lauren Hack (t), Lindsey Mann (t)
Wildlife	Sheila Colyer

H. Treatment Narrative:

Land Treatments:

1. **P1a. Burned area Early Detection Rapid Response (EDRR):** It is critical to perform EDRR actions for invasive plants in the spring and fall of 2022 to prevent invasive plant establishment. Treatment is most effective when infestations are small and before new invaders produce seed. BAER EDRR treatment is prescribed for approximately 160 acres on the Rough Patch Complex. BAER EDRR would be used to survey and treat invasive plants (noxious weeds) in moderate and high severity burn areas adjacent to roads, within at-risk unique habitats, and in buffered areas outside the perimeters of pre-existing

invasive populations. This work should be at the discretion of the local botanists or invasive coordinator using their local knowledge of these invasive plant populations.

2. **P1b. Suppression Impacts to BAER:** Approximately 65 acres of dozer line, push-outs, and staging areas were cleared to bare mineral soil during suppression activities on the Rough Patch Complex. EDRR is recommended in fall of 2021 and spring of 2022, if possible, to treat invasive plant populations vectored by suppression activities and dispersing onto disturbed ground.

BAER EDRR—restricted to areas with > 50% basal area mortality			
Area of risk	**Buffer (ft)**	**Acres**	**Notes**
Unique habitats [a]	0	47.2	Excludes rock outcrops and talus; includes mapped populations of sensitive botanical species
Invasive plant population perimeter [b]	400	107.9	Buffer represents seed dispersal distance; this may be longer for seeds dispersed by wind or traffic.
Road as line or improved road [c]	20	4.6	Burned areas most vulnerable to seed carried by suppression traffic
Subtotal		**159.7**	
Suppression EDRR			
Disturbance Form	**Buffer (ft)**	**Acres**	**Notes**
Push-outs and staging areas [c]	0	6.3	Areas with soil disturbed by equipment and traffic
Dozer lines [c]	0	59.1	Average dozer line width 20 ft, based on field observations
Subtotal		**65.4**	
Total		**225**	

Rehabilitation Item	**Unit***	**Cost**	**Description of costs**
BAER EDRR 160 ac x 2 treatments	$53.00/ acre	$16,960	Spring 2022 and Fall 2022: EDRR surveys and treatment in vulnerable areas (unique habitats and areas adjacent to highest probability weed populations) where fire caused >50% basal area mortality
Suppression EDRR 65.4 ac x 2 treatments	$53.44/ acre	$6,990	Fall 2021 and Spring 2022: EDRR surveys and treatment on ground disturbed by suppression
Total Cost of Treatment:		**$23,950**	**Complete all recommended BAER and Suppression EDRR activities associated with the Rough Patch Fire**

3. **H1. Heritage Treatments**
   Section 106 compliance clearances for BAER treatments

Personnel costs for monitoring site camera BAER treatments:

Heritage item	Unit	Cost	Description of costs
GS-12 Heritage Program Manager-1 days	$336.64/day	$336	Overtime for Project oversight, consultation with SHPO and tribes
GS-5 Heritage Techs-10 days	$135.20/day	$1,352	Deploy cameras, analyze data, effectiveness monitoring
Total Cost of Treatment:		**$1,688**	

Channel Treatments: None

Roads and Trail Treatments:

1. R1. Road Stormproofing:
   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.

   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

1. **R1** – **Storm Proofing**: Clean culverts, drain ditches, and catchment basins of sediment.

Road #	SURFACE TYPE	BMP	EMP	TOTAL MILES
3818100	Crushed Aggregate or Gravel	0.65	1.8	1.15
3825000	Crushed Aggregate or Gravel	1.4	5.3	3.9
			Total Mileage	**5.05**

I. LABOR, EQUIPMENT, MATERIALS, AND OTHER COST:

Ditch and Culvert Cleanout						
Total Length of Road	5.05 mi					
BPA	$2,138.61 /mi					
Overtime for Admin 4 days*$300/day	$1,200					
					Total	**$10,800**

2. R3. Storm Patrol and Response:
   Roads within the Rough Patch contain drainage structures that cross streams located in watersheds that have a high to moderate 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 drainage structures or exceeding their maximum flow capacity. If these flows plug drainage structures the result could be massive erosion and debris torrents further down the drainage due to the failure. Storm

inspection/response keeps culvert and drainage structures functional by cleaning sediment and debris from the inlet between or during storms. This work will be accomplished through Forest Service Road Crew, equipment rental, and general labor.

R-3 Per the BAER Treatments Catalog, storm patrols are intended for use at the following locations:

Road #	Surface Type	Miles
3818100	Crushed Aggregate or Gravel	1.8
3825	Crushed Aggregate or Gravel	5.4
2715550	Crushed Aggregate or Gravel	1.5
2814500	Crushed Aggregate or Gravel	1.1
	Total Miles	**9.8**

PERSONNEL SERVICES (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item **Do not include contract personnel costs here (see contractor services below).**	**COST/ITEM**
Storm Patrol, 2 days x $3,000/day	$6,000
TOTAL PERSONNEL SERVICE COST	$6,000

TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X # Fiscal Years = Cost/Item	**COST/ITEM**
Overtime for Contract preparation, inspection 1 days @ 600	$600.00
TOTAL PROJECT COST	**$6,600**

Protection/Safety Treatments:

1. S1b. Warning Signs for Trails

Signs warning the public of hazards should be applied at all entry points to trail as well as either end of Forest RD 38 to warn recreationists of overhead hazards at dispersed camping sites along that road. The Saddle Camp Shelter is another site where hazard trees have the potential to fail and strike the building. This shelter is not regularly maintained and does not carry the same historical importance as Musick Guard Station. It was recommended by the Recreation Staff and Forest Recreation manager that this site be signed and closed to the public.

Signs to notify and warn the public of the hazards				
Facility/Trail Name	**Trail Number**	**Approx. Burned Length in Miles**	**Number and location**	**Cost including posts, sign, hardware**
Dispersed campsites	FS Rd 38	N/A	2 – entrance to Forest RD 38	$400
Saddle Camp Shelter	1407	0.1	1– at shelter location	$200
Musick Guard Station	FS Rd 2460-280	0.1	1 – at location	$200

Seasonal time for sign install (2 persons/2 days)				$1500
Total				**$2300**

2. S12. Hazard Tree Falling to Protect Recreation Rental:
   Musick Guard Station, a highly popular recreation rental also on the National Register of Historic Places, will need hazard trees within striking distance of the building to be felled to avoid future damage to the building. Due to the proximity to infrastructure, it is recommended that C fallers are used.

Removal of Hazard Trees within Striking Distance of Infrastructure – FS crew of 4 C fallers/sawyers			
Facility/Trail Name	**Work Needed**	**Days Needed**	**Cost**
Musick Guard Station	Cutting of hazard trees	5	$5300
	Supplies (fuel, chains, etc.)		$200
TOTAL COST			**$5500**

3. S12. Removal of safety hazards from burned burn next to recreation rental
   The burned barn and its remains pose a high risk for a safety hazard causing injury, so these will need to be removed and disposed of properly. Site the site is located on a well-used road system so administrative or physical closures are either ineffective or more costly than site clean-up. The actions described above will be in consultation with Heritage due to the historical significance of the site.

Removal of burned barn materials – FS crew and disposal fees			
Facility/Trail Name	**Work Needed**	**Days Needed**	**Cost**
Musick Guard Station barn	Site cleanup and disposal cost of materials	3	$2500
TOTAL COST			**$2500**

1. S1a. Road Warning Signs:
   Inform users of the dangers associated with entering/recreating within a burned area as well as inform them of objects and closures to help ensure that users are able to access the correct routes in a safe manner.

S1a: Installation of the warning signs: Rough Patch Complex

Road ID	MP
2300	12.5
3800	9.73
3850	5.1
38000	18.37
171870	T24S, R1E
246000	17.15
2212767	0

2328000	6.87
2358000	8.7
2358000	2
2715000	11.75
2715000	2.95
2781000	0.79
2800000	25.3
2800000	29.5
2814000	0.64
5850600	7.24
5850600	5.07

PERSONNEL SERVICES (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item **Do not include contract personnel costs here (see contractor services below).**	
Laborer 4X4X 12' Posts and Hardware for BURNED AREA Warning Signs, 18 @ $50/Each Warning signs stating "Entering Burn Area Fallen Rock and Debris" x 18 @ $400 Each	$900.00 $7200.00
TOTAL PERSONNEL SERVICE COST	**$8100.00**

Overhead and Contract Costs and Travel Cost	**COST/ITEM**
Overtime costs for Contract preparation, inspection	$450
TOTAL OVERHEAD, TRAVEL AND SERVICE COST	**$8550.00**

I. Monitoring Narrative: None requested

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											
P1a. Invasives EDRR	Acres	53	320	$16,960	$0			$0		$0	$16,960
P1b. Invasives EDRR- Supr	Acres	53	130.8	$6,990	$0			$0		$0	$6,990
H1. Heritage Treatments	Each	1,688	1	$1,688	$0						$1,688
Subtotal Land Treatments				$25,638	$0			$0		$0	$25,638
B. Channel Treatments											
				$0	$0			$0		$0	$0
Subtotal Channel Treatments				$0	$0			$0		$0	$0
C. Road and Trails											
R1. Road Stormproofing	Miles	2,139	5	$10,800	$0			$0		$0	$10,800
R3. Storm Patrol and Respo	Miles	673	10	$6,600							$6,600
Subtotal Road and Trails				$17,400	$0			$0		$0	$17,400
D. Protection/Safety											
S1b. Trail Hazard Signs	Each	575	4	$2,300	$0			$0		$0	$2,300
S12. Hazard Tree Falling	Each	5,500	1	$5,500	$0			$0		$0	$5,500
S12. Removal of safety haza	Each	2,500	1	$2,500							$2,500
S1a. Road Hazard Signs	Each	475	18	$8,550							$8,550
Subtotal Protection/Safety				$18,850	$0			$0		$0	$18,850
E. BAER Evaluation											
Initial Assessment	Report			$75,000	$0			$0		$0	$0
				$0	$0			$0		$0	$0
Subtotal Evaluation				$75,000	$0			$0		$0	$0
F. Monitoring											
				$0	$0			$0		$0	$0
Subtotal Monitoring				$0	$0			$0		$0	$0
G. Totals				$61,888	$0			**$0**		**$0**	**$61,888**
Previously approved											
Total for this request				**$61,888**							

PART VII - APPROVALS

1. ALICE CARLTON Digitally signed by ALICE CARLTON Date: 2021.10.20 12:43:15 -07'00' 10/20/21

Forest Supervisor Date