Date of Report: 08/17/2020

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: Phillips Creek

B. Fire Number: ID-STF-000225

C. State: Idaho

D. County: Camas

E. Region: 4

F. Forest: Sawtooth

G. District: Fairfield

H. Fire Incident Job Code: P4NDQ9/0414

I. Date Fire Started: August 5, 2020

J. Date Fire Contained: August 16, 2020

K. Suppression Cost: Currently $2.7 million

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

1. **Fireline repaired (miles):** 3.4 miles
2. **Other (identify):** 200lbs of native seed mix

M. Watershed Numbers:

Table 1: Acres Burned by Watershed

HUC #	Watershed Name	Total Acres	Acres Burned	% of Watershed Burned
170402200303	Upper Soldier Creek	11,223	688	6.1
170402200304	Middle Soldier Creek	10,527	1363	13.3

N. Total Acres Burned: 2051

Table 2: Total Acres Burned by Ownership

OWNERSHIP	ACRES
NFS	1952

OWNERSHIP	ACRES
OTHER FEDERAL (LIST AGENCY AND ACRES)	0
STATE	0
PRIVATE	99
TOTAL	2051

O. Vegetation Types:

Vegetation Type	Burn Severity	Acres
Aspen	Unburned	5
Aspen Conifer Mix	Unburned	26
Douglas-Fir	Unburned	13
Forest Shrubland	Unburned	12
Mountain Big Sagebrush	Unburned	8
Mountain Shrubland	Unburned	9
Aspen	Low	9
Aspen Conifer Mix	Low	5
Douglas-Fir	Low	3
Forest Shrubland	Low	9
Mountain Big Sagebrush	Low	133
Riparian	Low	7
Aspen	Moderate	52
Aspen Conifer Mix	Moderate	36
Developed Area	Moderate	5
Douglas-Fir	Moderate	78
Forest Shrubland	Moderate	8
Mountain Big Sagebrush	Moderate	1523
Mountain Shrubland	Moderate	32
Riparian	Moderate	38
Aspen	High	6
Forest Shrubland	High	5
Mountain Big Sagebrush	High	32
Mountain Shrubland	High	5

P. Dominant Soils: Soils are shallow and moderately deep sandy skeletal xerix. The dominant soil is found on the upper and mid-slopes of the units. The soil is moderately deep and has a gravelly sandy loam surface texture. The subsoil is gravelly loamy sand texture. There are two minor soils which are confined to ridgetops and upper slopes. These soils are shallow and have a thin gravelly loamy sand or gravelly sandy loam surface horizon. The soil at lower portions of the slopes is shallow and has a gravelly loamy sand texture throughout the profile. The soils are all relatively high in gravel content with a range from 15 to 30 percent by volume. Rock content of the major soil varies from 10 to 60 percent. Infiltration and permeability rates are dominantly rapid to very rapid. A soil on shallow lower slopes has rapid return of water to channels. This is due to a shallow sandy soil and bedrock which tends to restrict the downward movement of water. Because of this characteristic, more water moves off the slopes as overland flow than as subsurface flow. Evidence as to the amounts of material moved off the slopes during periods of water saturation is offered by the numerous alluvial fans found at the entrances of nearly all draws and drainages.

Q. **Geologic Types:** The burned area is located in Soldier Mountain range that defines the southern boundary of the Idaho Batholith, a major uplift of granitic intrusive material. The geology consists of quartz monzonite

and granodiorite derived from the igneous granitics. Glaciation and fluvial actions are the geomorphic processes that shaped the current landscape.

R. Miles of Stream Channels by Order or Class:

Table 3: Miles of Stream Channels by Order or Class

STREAM TYPE	MILES OF STREAM
PERRENIAL	3.2
INTERMITTENT	4.2
EPHEMERAL	
OTHER (DEFINE)	

S. **Transportation System:**
Trails: *National Forest (miles):* 1.5 *Other (miles):*
Roads: *National Forest (miles):* 1.4 *Other (miles):*

PART III - WATERSHED CONDITION

A. Burn Severity (acres):

Table 4: Burn Severity Acres by Ownership

Soil Burn Severity	NFS	Other Federal (List Agency)	State	Private	Total	% within the Fire Perimeter
Unburned	127			16		
Low	237			16		
Moderate	1559			66		
High	29			1		
Total						

B. Water-Repellent Soil (acres): 1500

C. Soil Erosion Hazard Rating: Moderate

D. Erosion Potential: Moderate**Sediment Potential:** Moderate

F. Estimated Vegetative Recovery Period (years):
Grass/Forbs 1-3
Shrubs 10
Conifers 20

G. Estimated Hydrologic Response (brief description):
The Phillips Creek fire burned approximately 2100 acres within 2 subwatersheds in Camas County, approximately 8 miles north of Fairfield, Idaho. The subwatersheds include a mosaic of forested and shrub lands and forested riparian corridors along Free Gold, Bridge, and Soldier Creeks.

Within NFS lands, values downslope of the burned areas include forest system trails, safety of forest users of the roads and trails, safety of visitors to and property at Soldier Mountain ski area, and soil productivity. The fire was fairly uniform, leaving only a few unburned patches within the fire perimeter. However, prefire vegetation was mainly shrubs/grass with a few timber stands, so fuels and subsequent burn severities were relatively low.

Topography within the fire area includes relatively low gradient stream valley bottoms (2-5%) with steep canyon walls that rise approximately 500 feet in elevation above the valley bottom. In general, elevated post fire runoff risk most likely to occur from these steep valley walls, adjacent to the flat valley bottom.

Fortunately, most of the steep slopes are relatively short in length and small in drainage area (<50 acres) and generally had low soil burn severity.

To quantify the estimated changes in runoff potential, the Wildcat5 model was used for the main Free Gold Creek drainage. The following table shows pre fire and post fire peak flow storm runoff estimates from the model:

Drainage	**Storm Runoff Peak Flow**			
	(ft^3/s)		**(ft^3/mi^2)**	
	Pre Fire	Post Fire	Pre Fire	Post Fire
Free Gold Creek	0	29.9	0	19.9

Locations where hillslope risk was identified above downslope values were primarily along the main Soldier Creek valley and the Free Gold trail. Soldier Creek drainage locations include several off-forest values (homes, access to homes) and buildings at Soldier Mountain ski area south of and including the old ticket office and ski patrol building. The ATV trail in Free Gold canyon is also crossed by several drainages from the north. Given the burn severity (generally low) and small size of most of these drainages, it is expected that some flow and minor amounts of sediment could be delivered to downstream values, but the events are not likely to be large or life threatening. The risk is primarily to property.

PART V - SUMMARY OF ANALYSIS

Introduction/Background

The Phillips Creek Fire burned approximately 2,100 acres between August 5 and August 16, 2020. The fire was caused by lightning. All types of resources including engines, dozers, water tender, and air resources responded to the fire. There were retardant drops made on the fire to limit its spread.

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

Table 5: 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**

1. Human Life and Safety (HLS):

Post-fire conditions threaten the life and safety of visitors using the Forest Service roads and trails within a fire perimeter. There are portions of roads and trails which do pass through moderate and low severity burned areas within the Phillips Creek Fire perimeter. Normal storm frequencies and magnitudes within the burn area typically bring isolated showers and windy conditions. These isolated showers can cause increased over land flows which have the ability to transport rock and debris from the upper slopes onto the transportation routes. The winds also can cause the now dying trees to fall across the roads and trails creating a possibility of hazard trees falling on or trapping visitors who are on these transportation systems.

The segments of the roads and trails within the fire perimeter all lie at the bottom of drainages which after the storms pass through create a threat to the safety of those individuals caught on these routes during one of these typical isolated storm and/or wind events.

Possible Probability of Damage or Loss (Likely) /Magnitude of Consequences (Moderate): Risk Assessment = <u>High</u>

2. **Property (P):**The property types within the fire perimeter include system roads and trails and are further shown in the following table:

Trail or Road Number	Mileage
Soldier Creek 093	0.63
Pioneer 424	0.12
Ski Lift Maintenance RD	0.80
Free Gold Trail 7185	1.51

Most of these assets are located in moderate to low intensity burned severity areas which typically would result in a lower chance of needing to make costly repairs. But due to the location of these 1882

Possible Probability of Damage or Loss (Likely) /Magnitude of Consequences (Moderate): Risk Assessment = <u>High</u>

3. **Natural Resources (NR):**
<u>Native or Naturalized Plant Communities</u>:

Threat due to Noxious Weeds –

Based on information received from the SNF and County CWMA from pre-fire treatments and inventories, the Phillips Creek Fire area and adjacent lands contained 3 noxious Idaho plant species and 4 non-native invasive plant species (Table 1).

Table 1. Existing noxious and non-native invasive plant species on public and private lands

Species	Status
Canada thistle *(Cirsium arvense*)	Idaho noxious species
Spotted knapweed (*Centaurea stoebe)*	Idaho noxious species
Diffuse Knapweed (*Centaurea diffusa*)	Idaho noxious species
Bull thistle (*Cirsium vulgare*)	Non-native invasive
Common tansy (*Tanacetum vulgare*)	Non-native invasive
Cheatgrass (*Bromus tectorum*)	Non-native invasive
Mullein (*Verbascum thapsus)*	Non-native invasive

Spotted knapweed, Canada thistle, and cheatgrass are the most widespread species in the area, and highest risk of potential spread into the burn area. Other noxious weeds known to occur on SNF, state and private lands listed in Table 1, are also very aggressive and require immediate attention in the burned area.

The native plant communities and soil productivity can be severely impacted in a fire due to the spread of non-native and noxious weeds from existing populations and the introduction of new species. The presence of non-native invasive species may prevent establishment of desirable perennial grasses and can increase future fire hazards. Fire resources likely spread noxious species seeds into new areas within the fire perimeter.

Noxious and non native invasive species are likely to establish at a much faster rate, further impacting emerging natives. Keeping new or expanding noxious and non-native plant species from becoming established is a high priority across federal, state, and private lands ownership boundaries. Non-native invasive species often either have rhizomatous root structures, or produce abundant seed coupled with high germination rates enabling seedlings to establish rapidly following fire. The presence of non-native invasive species may prevent establishment of desirable perennial grasses and can increase future fire hazards. Prevention and treatment of invasive species prior to populations becoming

established and expanded is a key point in restoring desired native vegetation within the burn area and reducing long-term cost of containment, control and eradication. An aggressive monitoring and treatment program is needed to deal with noxious and non-native invasive plants. This effort is expected to be a short, mid, and long-term process.

A major vegetation issue identified post fire included threats to the ecological integrity native plant communities from the introduction and expansion of noxious and invasive plant species. The burned area, now lacking desired vegetation that can normally compete with invasive species, is vulnerable to the spread of existing noxious and non-native seed sources (cheatgrass). Even in the low intensity burn areas, it will take at a minimum one growing season for native vegetation to reestablish and begin competing with invasive species. Therefore, the risk is very high to potentially adversely affect hundreds of acres of public lands if they are not monitored and treated effectively.

Possible Probability of Damage or Loss (Very Likely) /Magnitude of Consequences (Moderate): Risk Assessment = <u>Very High</u>

4. Cultural and Heritage Resources: None Identified

B. Emergency Treatment Objectives:

The goal of the burned area emergency rehabilitation is to:

- Reduce threats to personal injury and/or human life of visitors using the existing transportation systems.
- Prevent the spread of invasive plant species into new locations.
- Reduce the damage to the recreational transportation system caused by expected increase in flows over the trail surface.

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

Land N/A **Channel** N/A
Roads/Trails 100% **Protection/Safety** 100%

D. Probability of Treatment Success

**Initially, visitors will heed the warning signs. Complacency is expected after the initial year unless there is a damaging event.*

Table 6: Probability of Treatment Success

	1 year after treatment	***3 years after treatment***	***5 years after treatment***
Land	■	■	■
Channel	■	■	■
Roads/Trails	80	90	■
Protection/Safety	80	70	60*

E. Cost of No-Action (Including Loss): $165,250
The values at risk directly lost through No-Action includes: damage to water quality, loss of soil productivity (as impacted by noxious weed potential and erosion), recreational opportunities, and trail surfacing and cross section.

F. Cost of Selected Alternative (Including Loss): It was assumed the primary treatments (noxious weed treatment and road and trails drainage treatment) would be successful in reducing resource values lost through No-Action by 80 percent. The remaining resource values lost (as a factor of success) were added to the cost of the primary land treatment. (Not Estimated)**Skills Represented on Burned-Area Survey Team:**

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

Team Leader:
Email:Thomas.Stewart@usda.gov **Phone(s) cell: 208-404-5227**

Forest BAER Coordinator:
Email:Thomas.Stewart@usda.gov **Phone(s): cell: 208-404-5227**

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

Skill	Team Member Name
Team Lead(s)	Thomas Stewart
Soils	Thomas Stewart
Hydrology	Mark Dallon
Engineering	Shawn Robnett
GIS	
Archaeology	
Weeds	Thomas Stewart
Recreation	Steve Frost
Other	David Skinner (wildlife)

H. Treatment Narrative:Land Treatments:

Noxious Weeds -

Purpose of Treatment: To identify new infestations of noxious weeds in burned areas. Effectively treat noxious species and reduce the spread within the Phillips Creek Fire area. The spread of noxious and non-native plant species could result in a reduction in the diversity of the native plant communities, and loss of soil productivity that would affect forage for wildlife and livestock in the area, and scenic beauty and overall recreational experiences. EDRR treatment implemented within the next growing season could reduce the risk of introduction and spread of noxious species in the burned area.

General Description: Forest Service and County Cooperative Weed Management Area treatment efforts will continue in the area and include an emphasis on managing the potential for introduction and spread of noxious weed species in the burned area, and rehabilitated suppression activity areas. EDRR for the burned area would be an integral part of the SNF weed management program. EDRR treatments would be annual spring/summer treatments with follow up in the fall. This treatment will take place in accordance with the Forest Noxious Weed Management Plan.

Location (Suitable) Sites: EDRR treatment will be focused on monitoring suppression activities areas, areas of concentrated recreation and sage-grouse habitat within the fire boundary.

Design/Construction Specifications: The SNF program management personnel will conduct systematic EDRR surveys of the dozer and hand lines, helispots, drop points, camps, staging areas, cross country travel areas associated with suppression activities. EDRR surveys will also focus on concentrated recreation areas (trails, trail heads, ski area) and sage-grouse habitat within the fire boundary. Surveys would be done by vehicle, ATV and foot. The personnel will select herbicide, application rate, and application timing based on specific weed species found. EDRR treatments would be annual spring/summer treatments with follow up in the fall.

Channel Treatments: There are no recommended treatments to any of the channels that reside within the fire perimeter.

Roads and Trail Treatments:

Purpose of Treatment: The stabilization work includes cleaning existing road and trail drainage structures, installing additional temporary water bars, rolling grade dips, and out sloping the trail where it deems necessary. The total mileage of road and trail within the fire perimeter is 1.4 miles and 1.5 miles respectively. The roads and motorized trails run through moderate burn severity.

General Description: Maintenance of existing water bars & drainage dips, and installation of new drainage features is needed to provide for maximum effectiveness to efficiently route water and sediment from the road and trails, thereby preventing erosion of the existing surfaces and minimizing impacts to water quality.

The slopes with the highest likelihood to respond to precipitation events are the microsheds immediately upstream of the road and trails in the main canyon bottoms. These microsheds are steep (40%+), have perched sediment in the swale bottoms. The system trails are located on the lower gradient valley bottoms at the toe of these slopes.

There are two main hillslope processes that represent risks to downstream values. First, deposition of sediment on system trails that are located where steep microsheds transition to lower gradient valley bottoms. This would essentially bury system trails in debris/sediment at the microshed mouth. Second, where this fan of debris is deposited, water delivery downslope could be captured by system trails, resulting in trail erosion downstream of these depositional locations. Enhanced trail drainage would reduce the likelihood of trail washout and erosion below these sites. However, it would do little to reduce the risk of sediment deposition which would occur at the change in gradient regardless of trail drainage features.

In summary, the road and trails within burn perimeter are excellent conveyors for routing significant volumes of sediment to nearby streams if drainage facilities are not adequate to process increased runoff. In addition, the increased flows can erode the tread, delivering even greater amounts of sediment to nearby steams.

Location (Suitable) Sites: The location on where to perform the work on the road and trails is indicated in the table below:

Trail or Road Number	Beginning Point	End Point	Mileage
Free Gold Trail (7185)	Forest Boundary	First 1.5 miles	1.5

Protection/Safety Treatments:

Hazard Warning Signs -

Purpose of Treatment: The purpose of “Hazard Warning” signs is to reduce the risks to human life and safety by warning all users 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.

General Description: This treatment is for installation of “Entering Burned Area” warning signs where the one road and trails access the Phillips Creek Fire perimeter.

Location (Suitable) Sites: The proposed location of the hazard warning signs for the trails and road, listed in the table below, will be placed at the Forest Boundary where each route crosses onto the forest and except for the road the other location of the signs will be placed where the specified route crosses the fire perimeter.

Route Name and Number	Total Number of Signs
Phillips Creek Trail 7813	2
Free Gold Trail 7185	2
Soldier Creek Rd 093	1

I. Monitoring Narrative:

Road and Trail Hazard Warning Signs: Regularly inspect the warning signs for visibility and when able ask visitors if they saw signs and if they understood the warnings listed.

Road and Trail Stabilization: Inspect and monitor the road and trails after spring run-off and precipitation events to ensure existing drainage structures are effective and ready to handle the next precipitation event.

Noxious Weeds: The Sawtooth NF weed management program personnel would monitor noxious weed infestations treated with herbicide. Field personnel will GPS occurrences and size of areas of infestation, photo points, and use transect protocols to record relative abundance or coverage to build species trend (stable, increasing) data for area.

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 Weeds	Acres			$0	$0		$0		$0	$0
EDRR Suppression	Acres	$150.00	3.3	$495	$0		$0		$0	$495
EDRR BAER	Acres	$5.61	520.7	$2,922	$0		$0		$0	$2,922
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Land Treatments			524	$3,417	$0		$0		$0	$3,417
B. Channel Treatments										
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Channel Treat.				$0	$0		$0		$0	$0
C. Road and Trails										
Road&Trail Stablilizatio	Miles	$1,881.53	1.5	$2,822	$0		$0		$0	$2,822
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Road & Trails				$2,822	$0		$0		$0	$2,822
D. Protection/Safety										
Hazard Warning Signs	Each	271.86	5	$1,359	$0		$0		$0	$1,359
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Structures				$1,359	$0		$0		$0	$1,359
E. BAER Evaluation										
				---			$0		$0	$0
Insert new items above this line!				---	$0		$0		$0	$0
Subtotal Evaluation				---	$0		$0		$0	$0
F. Monitoring										
				$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				$7,598	$0		**$0**		**$0**	**$7,598**
Previously approved										
Total for this request				**$7,598**						

PART VII - APPROVALS

Forest Supervisor Date