

Date of Report: 01/27/2016

BURNED-AREA REPORT
(Reference FSH 2509.13)**PART I - TYPE OF REQUEST****A. Type of Report**

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

B. Type of Action

- ☐ 1. Initial Request (Best estimate of funds needed to complete eligible stabilization measures)
☒ 2. Interim Report # 1
☐ Updating the initial funding request based on more accurate site data or design analysis
☐ Status of accomplishments to date
☐ 3. Final Report (Following completion of work)

PART II - BURNED-AREA DESCRIPTION

- A. Fire Name: Twisp River B. Fire Number: NES-721
C. State: WA D. County: Okanogan
E. Region: 06 F. Forest: Okanogan-Wenatchee
G. District: Methow Valley H. Fire Incident Job Code: PNJ2BB
I. Date Fire Started: August 19, 2015 J. Date Fire Contained: Est. September 30, 2015
K. Suppression Cost: \$2.9 Million
L. Fire Suppression Damages Repaired with Suppression Funds
1. Fireline waterbarred (miles): On-going
2. Fireline seeded (miles): On-going
3. Other (identify): On-going
M. Watershed Numbers: Middle Methow (1702000806); Twisp River (1702000805);
N. Total Acres Burned: 11,220
NFS Acres(4,948) Other Federal (71) State (4,732) Private (1,469)
O. Vegetation Types: Douglas fir/Ponderosa pine/pinegrass and Scouler's willow and a dry shrub community of false boxwood/snowberry plants.
P. Dominant Soils: Ash cap soils, rock outcrops and rubble lands.

Q. Geologic Types: Volcanic and marine and continental sedimentary rocks modified by alpine glaciations.

R. Miles of Stream Channels by Order or Class: 10.32 miles Class IV; 1.99 miles other.

S. Transportation System

Trails: 12 miles Roads: 44 miles (13 miles within high and moderate burn severity)

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 2604 (low) 1070 (moderate) 214 (high)

B. Water-Repellent Soil (acres): ~1000

C. Soil Erosion Hazard Rating (acres):
117 (low) 1750 (moderate) 2022 (high)

D. Erosion Potential: 19 tons/acre (weighted average of moderate and high soil burn severity)

E. Sediment Potential: 690 cubic yards / square mile (weighted average of moderate and high soil burn severity)

PART IV - HYDROLOGIC DESIGN FACTORS

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

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

C. Equivalent Design Recurrence Interval, (years): 25

D. Design Storm Duration, (hours): 1

E. Design Storm Magnitude, (inches): 0.7

F. Design Flow, (cubic feet / second/ square mile): 5

G. Estimated Reduction in Infiltration, (percent): 40

H. Adjusted Design Flow, (cfs per square mile): 122

PART V - SUMMARY OF ANALYSIS

A. Describe Critical Values/Resources and Threats:

Introduction

The Twisp River Fire was determined to be human-caused and started near Twisp, WA on August 19, 2015. The fire burned north of the Twisp River between the town of Twisp on the eastern flank and extending up into the Little Bridge Creek drainage up to Cow Creek on the western flank.

The BAER team conducted a field assessment the week of September 14th, 2015. The team determined burn severity and used that information to model postfire peak flows. Based on their results the evaluated the risk to critical values and below is a summary of their findings.

Threats to Human Life & Safety

The fire burned high and moderate patches above some private lands on Myer Creek. The threat from damage from postfire flooding, erosion and debris jams to road infrastructure on FR 040 is moderate.

Threats to Property

The threat from damage from postfire flooding, erosion and debris jams to road infrastructure on FR 040 is moderate. There is one undersized culvert on this road that is at risk from being blocked with debris and will not be able to pass flows which could take out the road.

Threats to Natural Resources

Threat to soil productivity is low. Sampling of post-fire soil burn severity and effective ground cover revealed that observations along transects noted the presence and abundance of near surface intact fine roots. Soil burn severity was more often than not deemed low despite high fire intensity. Seeds, fungi, rhizomes, and pliable roots just below the surface hint that the natural recovery of these sites to be potentially rapid (ie., with 1 or 2 growing seasons). Hence it is believed that natural recovery of effective ground cover is the most efficient and cost-effective approach to emergency stabilization and minimizes exposure to safety hazards.

Invasive plant inventories conducted by the Methow Valley Ranger Districts documented five invasive plant species of concern (see table below). The threat from population expansion is intermediate to high.

Species	Common name	Washington state
<i>Cadaria draba</i>	whitetop	C
<i>Centaurea diffusa</i>	diffuse knapweed	B
<i>Linaria dalmatica</i> ssp. <i>dalmatica</i>	Dalmatian toadflax	B
<i>Linaria vulgaris</i>	Butter and eggs	C
<i>Potentilla recta</i>	sulfur cinquefoil	B

Threats to T& E Species and Critical Habitat

The Twisp River currently supports runs of Federally listed Upper Columbia River (UCR) summer steelhead (threatened), UCR spring Chinook salmon (endangered), Columbia River bull trout (threatened) and their designated Critical Habitat. The Twisp River provides spawning and rearing habitat for both UCR steelhead and spring Chinook salmon.

Little Bridge Creek supports spawning and rearing habitat for UCR Steelhead and rearing habitat for Columbia River bull trout and also is designated Critical Habitat for those species. Steelhead spawn in Little Bridge Creek up RM 4.9 with rearing occurring up to RM 7.7. Little Bridge Creek enters the Twisp River at approximately RM 8.8. A series of intermittent tributaries, including Cow Creek, Spring Creek, Coal Creek, Myer Creek and Elbow Coulee flow directly out of the fire into the Twisp River. Cow Creek is the only perennial stream in the fire, however no fish have been detected in this stream mostly likely due reaches of subsurface flow.

Within the burned area there is increased probability of erosion, mass wasting, and sediment delivery to the Twisp River based on peak flow calculations and hill slope erosion models of the Twisp Fire. The highest risk being in the Myer Creek portion of the burn, which is approximately a 900 acre catchment. There is potential of delivering measurable amounts of sediment and debris to the Twisp River if a 25-year/1 hour storm event were to occur. If a 25-year storm event does trigger mass wasting in this portion of the burn moderate to large volumes of sediment and debris could be expected.

The probability of fine sediment or a debris flow reaching the Twisp River is a likely (90% to 100%) occurrence within 1-3 years but, the magnitude of consequences could be low (damage to critical fisheries resources resulting in considerable or long term effects). Therefore, the risk determination is low.

Threats to Cultural and Heritage Resources

There were no know cultural resources in the Twisp River fire perimeter.

B. Emergency Treatment Objectives:

1. Reduce the potential for accelerated surface runoff damaging Forest Service roads within and directly downstream of the fire areas in drainages directly affected by the fire.
2. Coordinate with those agencies responsible for working with private landowners on emergency stabilization on private lands.
3. Reduce the potential for roads to act as a conduit for overland flow and increasing sediment loading.

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

Land ___ % Channel ___ % Roads/Trails 80 % Protection/Safety 90 %

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land	n/a		
Channel	n/a		
Roads/Trails	90%		
Protection/Safety	90%		

E. Cost of No-Action (Including Loss):_ 20,000

F. Cost of Selected Alternative (Including Loss):_ 18,800

G. Skills Represented on Burned-Area Survey Team:

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

Team Leader: Gregory A. Kuyumjian/Molly Hanson

Email: gakuyumjian@fs.fed.us/mahanson@fs.fed.us

Phone: (509) 664-9330

FAX:

H. Treatment Narrative:

(Describe the emergency treatments, where and how they will be applied, and what they are intended to do. This information helps to determine qualifying treatments for the appropriate funding authorities. For seeding treatments, include species, application rates and species selection rationale.)

Land Treatments:

Monitoring and control of weed species through chemical means (Early Detection Rapid Response-EDRR) to control new weed infestations within the fire perimeter on ~50 acres.

All treatments will be completed in the spring and fall of 2016. Two herbicide treatments are planned for and the timing will be determined by herbicide effectiveness by species. Treatments for Dalmatian toadflax are best at flowering to seed capsule phase and in the fall. St. Johnswort is best treated during pre-bloom and active growth periods. Knapweeds are best treated at spring to mid-bloom growth periods.

Channel Treatments:

None proposed with this request

Roads and Trail Treatments:

Install two signs on FR 040 at access points to burn area.

Remove undersized culvert and install drivable dip on FS 4410-000-1.02R-5 that may fail from post-fire flows. If depth of road fill above culvert limits successful installation of safe drivable dips due to road grade/placement, an armored dip will be placed instead of removing culvert to pass the water across the surface to protect the road prism (see as-built design in Appendix C).

Install control gates at access points from FS 4410 at FS 4410-040 at FS 4410000-1.02R-1 until road is safe for public use. Fabricate/purchase and install 2 gates controlling access on FS @ \$6000/gate;

Storm Patrol to inspect area during and immediately after storm events to repair, unplug, or aid in drainage of road drainage features along FS Roads

Protection/Safety Treatments:

Work with NRCS, Okanogan SWCD and other partner agencies to provide post-fire downstream concerns.

Work with appropriate agencies and National Weather Service to facilitate installation of an ALERT system for early warning if warranted.

I. Monitoring Narrative:

(Describe the monitoring needs, what treatments will be monitored, how they will be monitored, and when monitoring will occur. A detailed monitoring plan must be submitted as a separate document to the Regional BAER coordinator.)

Part VI – Emergency Stabilization Treatments and Source of Funds

Interim # **1**

Line Items	Units	Unit Cost	NFS Lands		Other	Other Lands		All
			# of Units	BAER \$		# of units	Fed \$	Total \$
A. Land Treatments								
EDRR/Noxious Weeds				\$5,000	\$0		\$0	\$5,000
				\$0	\$0		\$0	\$0
				\$0	\$0		\$0	\$0
Insert new items above this line!				\$0	\$0		\$0	\$0
Subtotal Land Treatments				\$5,000	\$0		\$0	\$5,000
B. Channel Treatments								
None proposed				\$0	\$0		\$0	\$0
				\$0	\$0		\$0	\$0
				\$0	\$0		\$0	\$0
Insert new items above this line!				\$0	\$0		\$0	\$0
Subtotal Channel Treat.				\$0	\$0		\$0	\$0
C. Road and Trails								
Culvert Removal/Armo	each	1500	1	\$1,500	\$0		\$0	\$1,500
Storm Patrol	each	1200	4	\$4,800	\$0		\$0	\$4,800
Control Gate	each	6000	2	\$12,000	\$0		\$0	\$12,000
Insert new items above this line!				\$0	\$0		\$0	\$0
Subtotal Road & Trails				\$18,300	\$0		\$0	\$18,300
D. Protection/Safety								
Coordination Letters	each	200	3	\$600	\$0		\$0	\$600
Signs	each	250	2	\$500	\$0		\$0	\$500
ALERT Support	each	4000	1	\$4,000	\$9,000		\$0	\$13,000
Insert new items above this line!				\$0	\$0		\$0	\$0
Subtotal Structures				\$5,100	\$9,000		\$0	\$14,100
E. BAER Evaluation								
	each	20,000	1	---	\$20,000		\$0	\$20,000
Insert new items above this line!				---	\$0		\$0	\$0
Subtotal Evaluation				---	\$20,000		\$0	\$20,000
F. Monitoring								
				\$0	\$0		\$0	\$0
Insert new items above this line!				\$0	\$0		\$0	\$0
Subtotal Monitoring				\$0	\$0		\$0	\$0
G. Totals				\$28,400	\$29,000		\$0	\$57,400
Previously approved				\$23,400				
Total for this request				\$5,000				

PART VII - APPROVALS

1.

Forest Supervisor (signature)

Date

2.

Regional Forester (signature)

Date