Date of Report: 9/9/2016

BURNED-AREA REPORT

(Reference FSH 2509.13)

PART I - TYPE OF REQUEST

A. Type of Report

[X] 1. Funding request for estimated emergency stabilization funds
[ ] 2. Accomplishment Report
[ ] 3. No Treatment Recommendation

B. Type of Action

[X] 1. Initial Request (Best estimate of funds needed to complete eligible stabilization measures)
[ ] 2. Interim Report #____
[ ] 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: Peterson Hollow

B. Fire Number: UT-UWF-000694

C. State: Idaho & Utah

D. County: Franklin. ID & Cache, UT

E. Region: Intermountain (R4)

F. Forest: Caribou-Targhee NF & Uinta-Wasatch-Cache NF

G. District: Montpelier (CT) & Logan (UWC)

H. Fire Incident Job Code: P4KM5U (0419) (0415)

I. Date Fire Started: 8/21/2016

J. Date Fire Contained: 9/2/2016

K. Suppression Cost: Approximately $3,000,000 (from U-W-C NF BAER Report)

L. Fire Suppression Damages Repaired with Suppression Funds (NFS lands only)

1. Fireline waterbarred (miles): -11 miles ((rom UWC report)
2. Fireline seeded (miles): -3 miles (from UWC report)
3. Other (identify): From U-W-C NF report: Fire suppression impacted some resources. Three miles of dozer line was constructed and needs to be repaired along ridge up Long hollow and along ridge between Sink Hollow and Beaver Creek. Hiking trail up Long hollow Ridge was impacted by dozer line and needs to be reconstructed. Fire handline around fire needs to be repaired. At Beaver Mountain Resort, roads leading to the top of the ski resort and parking lots used by suppression crews are in good condition and do not need repair.

M. Watershed Numbers: 160102030301 (Beaver Creek) on CT & UWC and
160102030302 (Hells Kitchen Canyon-Logan River) on UWC only

N. Total Acres Burned: 1.242 (NFS Acres) 569 (44%) CT NF Acres + 673 (52%) UWC NF Acres; & 52 (4%) State (UT) Acres

0. Vegetation Types: Aspen and mixed conifer/aspen, lodge pole pine, spruce/fir mix, and minor amounts of mountain big sagebrush (Source: C-T mid level existing vegetation).

P. Dominant Soils: Mult-Agassiz Association, eroded: Silt loam; High mountain loam Hydrologic Soil Group D. Lucky Star silt loam: 6-30 slopes; High mountain loam; Hydrologic Soil Group B.

Q. Geologic Types: Limestone (Mult-Agassiz Association) & Quartzite & Sandstone (Lucky Star)

R. Miles of Stream Channels by Order or Class: 0.8 miles Perennial & 1.0 miles Intermittent

S. Transportation System: Motorized Trails: 1.2 miles Roads: O miles in fire perimeter

PART 111 - WATERSHED CONDITION

A. Burn Severity: 295 acres (23% unburned); 558 acres (43% low); 300 acres (23% moderate); 142 acres (11% high)

B. Water-Repellent Soil (NFS acres only): 142 acres (high burn severity)

C. Soil Erosion Hazard Rating (Burned NFS acres only):
853 acres or 66% (low) 300 acres or 23% (moderate) 142 acres or 11% (high)

D. Erosion Potential (tons/acre): In the first year post-fire, burned areas have about a 50% probability of less than 2 tone/acre. There is a lesser chance, about a 10% probability, than erosion rates could well exceed soil loss tolerance values of 3-5 tons/acre.

E. Sediment Potential (cubic yards/square mile): Not calculated

PART IV - HYDROLOGIC DESIGN FACTORS

No hydrologic-related treatments are proposed due to soil burn severity and lack of hydrologic-related values at risk. From UWC Report: *USGS Stream Stats model estimates a 5 year peak flow of 139 cfs with prediction error of 54%.*

A. Estimated Vegetative Recovery Period, (years):	1-3 grass. 20-25 shrubs. 20-50 conifers
B. Design Chance of Success, (percent):	N/A no hydrologic related treatments prescribed.
C. Equivalent Design Recurrence Interval, (years):	N/A no hydrologic related treatments prescribed.
D. Design Storm Duration, (hours):	N/A no hydrologic related treatments prescribed.
E. Design Storm Magnitude, (inches):	N/A no hydrologic related treatments prescribed.
F. Design Flow, (cubic feet / second/ square mile):	N/A no hydrologic related treatments prescribed.
G. Estimated Reduction in Infiltration, (percent):	N/ A no hydrologic related treatments prescribed.
H. Adjusted Design Flow, (cfs per square mile):	N/A no hydrologic related treatments prescribed.

PART V - SUMMARY OF ANALYSIS

A. Describe Critical Values/Resources and Threats:

Areas of high and moderate soil burn severity have created a high risk to human life and safety, The Forest trail system), and to native ecosystems from invasive species and noxious weeds. The team assessed the following critical values and resources.

- Public Recreation (Human Life & Safety): Hazard trees, post-fire flooding, and other burned area conditions will remain a threat to public safety in the area. The Sink Hollow Motorized Trail (Trail #353) will remain closed to public use for the rest of the season because there are several hazard trees along the route. Both Forests should post warning signs at the north (CT NF) and south (UWC NF) ends of the trail.
- FS System Trails (Human Life. Safety. & Property): The Sink Hollow Motorized Trail (Trail #353) is currently very rough with several large boulders in the trail bed. There is one perennial stream/trail

crossing on the C-T (Idaho) administered portion of the trail and tree intermittent stream/trail crossings on the UWC (Utah) portion. The stream channel sinks into a large sinkhole just south of the Idaho/Utah state line. The stream channel is well armored with numerous boulders and large substrate material. Neither the trail nor the crossings appear to be at risk from post fire effects.

The Forests will likely need clear any downed trees across the trail in the spring of 2017, but it unknown at this time how big of a task that will be. It is likely that task can be handled through regular trail maintenance.

- Native Ecosystems - Invasive species and noxious weeds: Invasive species and noxious weeds are present only in minor amounts, but populations do exist around the fire perimeter. Early detection rapid response (EDRR) monitoring and treatments are needed to protect native ecosystems.

  Access to a majority of the burned area is limited to the Sink Hollow Motorized Trail or foot and horse travel. Therefore, noxious weeds either are absent or exist as single plants scattered along the authorized travel routes. Single plants of Dyers woad have been observed near the fire area, predominantly to the North and West of the fire, with single plant occurrences within the fire area. Canada and Musk thistle are present along the ATV trail, and in single plant occurrences throughout the area. Infestations of Hounds tongue have not been documented within the fire area but are in close enough proximity to assume that potential for spread throughout the fire area by wildlife is feasible.

  About 1O miles of roads and trails were used within and around the fire to access the burned area during suppression efforts.Vehicles and firefighters traveled through known areas of infestation to access areas of the fire that were previously known to be weed free. New infestations could develop along these travel routes within the first year of the fire, and easily spread throughout the rest of the burn area within 2-3 years.

- Soil Productivity & Hydrologic Function: There is a minor potential for post-fire flooding, erosion, or sedimentation throughout and downstream of moderate & high soil burn severities.

- Water Quality & Bonneville Cutthroat Trout Fisheries: The beneficial uses of Beaver Creek include agricultural water supply. The majority of the burned area is located in the Sink Hollow drainage, which sinks into a large sinkhole just south of the Idaho/Utah state line. A very small portion of the fire is located in the Beaver Creek watershed, but mostly along the ridges and watershed divide. Beaver Creek is important habitat for Bonneville cutthroat trout, a Region 4 Sensitive Species. There is a minor potential for post-fire flooding, erosion, or sedimentation as most the burned area in the Beaver Creek watershed is low severity and located on the ridges.

The table below summarizes the risks associated with each critical value. The risk was evaluated based on Interim Directive No. 2520-2014-1 guidance. The Forest recommends treatments to mitigate high risks.

Table 2 Risk assessment table displaying results of critical values risk evaluation

Critical Value	Critical Value Type	Probability of Damage or Loss	Magnitude of Consequences	Risk
Hazardous Condition Warning	Human Life and Safety	Possible	Major	High
Native and Naturalized Ecosystems (Noxious & Invasive weeds)	Natural Resources	Likely	Moderate	High
FS Trail #353 - Sink Hollow	Human Life & Safety; Property	Possible	Moderate	Intermediate
Soil Productivity & Hydrologic Function	Natural Resources	Possible	Moderate	Intermediate
Water Quality & Bonneville Cutthroat trout Fisheries	Natural Resources	Unlikely	Moderate	Low

B. Emergency Treatment Objectives:

- Hazardous Conditions Warning Signs – Inform the public of the dangers present within the burned area to reduce the risk of injury or death resulting from an increase in hazard trees throughout the area.

- EDRR for Invasives Species & Noxious Weeds – Prevent the spread of noxious plant species into previously unoccupied locations. Reduce the risk from expansion of existing weed seed beds into the burned area and to allow burned plant communities to recover more rapidly.

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

Invasives 90% (prior to seed) Channel N/A% Trails 80% Protection/Safety(signs) 90%

D. Probability of Treatment Success

Table: Probability of Treatment Success

	Years after Treatment		
	1	3	5
Invasives	90	75	N/A
Channel	N/A	N/A	N/A
Trails	N/A	N/A	N/A
Protection/Safety	75	50	N/A

E. Cost of No-Action (Including Loss): $55,000

Weeds: The values-at-risk with no action include potential loss of native communities and degraded ecological conditions that cause further departure from natural disturbance regimes, including loss of soil productivity over the long term. The effects of no action were determined by assuming fire suppression activities would contribute to the invasion of noxious weed species into highly susceptible burned areas where they were absent or in minor amount prior to the fire. This is a reasonable assumption after observing the conditions of portions of the adjacent.

If the invasive noxious weeds are not immediately controlled, these undesirable species could become established within 1 year. At least 2 years of additional treatments would be needed on the initial 100 acres identified, plus the potential for spread may infect an additional 100 acres if the initial invasion is not successfully controlled. The average cost to treat noxious plants that have become established is $140/acre. Assuming the treatments are 80% effective, the total cost for control of newly established noxious weed infestations, including loss, is estimated to be $55,000.

Signs: The potential injury or loss of life from hazards within the burn perimeter resulting from inadequate signage to notify public users would far exceed any request for sign funding.

F. Cost of Selected Alternative (Including Loss): Total = $6,200 Warning Signs = $600 + EDRR = $5,600

Cost estimate for EDAR - invasive plants and noxious weeds.

	Units	Unit Cost	# Units	BAER $
Detection/mapping/rapid response	Days	$300	2	$600
Treatment: Labor, equipment, & supplies	Days	$300	10	$3,000
Treatment: Chemical and supplies	Acres	$200	10	$2,000
Total =				$5,600

Cost to for warning signs.

	Units	Unit Cost	# Units	BAER $
Trail Crew Personnel - Installation	Days	$300	1	$300
Hazard Sign	Each	$300	1	$300
Total =				$600

G. Skills Represented on Burned-Area Survey Team:

[X] Hydrology **[X]** Soils [] Geology [X] Range [] Forestry [] Wildlife [] Fire Mgmt
[] Engineering [] Contracting [] Ecology [X] Botany [] Archaeology [] Fisheries
[] Research [] Landscape Arch [] GIS [X] Invasive Species/Noxious Weeds [X] Trails

Team Leaders

Kara Green, Soil Scientist, Caribou-Targhee NF klgreen@ fs.fed.us Phone: 208-547-1110
Brad Higginson, Hydrologist, Caribou-Targhee NF bhigginson@ fs.fed.u§ Phone: 208-557-5786

Other Core Team Members:

- Colby Jacobson - Trails/Recreation
- Dell Transtrum - Rangeland Resource, invasive Species, and Noxious Weeds

H. Treatment Narrative:

- Warning Signs: Post signs at the two Sink Hollow Trailheads: one on the C-T (Idaho) side at end of FS Road 486 in Gibson Basin and one on the U-W-C (Utah) side.

- EDRR for Invasive Species and Noxious Weeds: First year weed monitoring should include 50 feet on each side of the Sink Hollow motorized trail within the fire area and roads used to access the fire area. This would amount to roughly 60 acres of road and trail corridors. Weed Crews would also monitor within the burn area itself, especially the high & moderate severity areas for new infestations. Monitored acres along travel corridors and within burn area are estimated at around 100 acres.

  Treating invasive plants and noxious weeds prevents the serious threat these plants have on ecosystems. The BAER team surveyed the fire area and identified four invasive species nearby. All four species were on the Federal and/or Idaho State Noxious Weed List. These four species were prioritized depending on the plant type and its response to fire.

  1. Dyers Woad
  2. Musk thistles
  3. Canada thistle
  4. Houndstongue

  The District Weed Crews have implemented an integrated Management System using all appropriate available methods or a combination of methods that are economical and effective. The affected area is located within and all treatments are covered by the Caribou National Forest – Environmental Assessment for Noxious Weeds and Poisonous Plants. This plan will be followed to implement the proposed EDRR treatment.

  1. Prevent the introduction, reproduction and spread of designated noxious weeds and invasive plants into and within the Peterson Hollow Fire.
     Objectives:
     A. Develop and maintain and integrated inventory of noxious weeds and invasive plants
     B. Prevent the establishment of Potential Invaders through EDRR.
     C. Eradicate New Invaders (EDR A).
     D. Promote and support the use of certified weed free seed, and/or weed free feeds.

  2. Reduce the extent and density of established noxious weeds.
     Objectives:
     A. Establish control priorities for the noxious weed list.

B. Coordinate the use of resources and manpower to treat designated weed infestations
C. Treat transportation corridors and areas of concentrated activities, such as roads, dozer lines; fire lines, trails, campgrounds, trailheads parking lots. Control satellite infestations of Established Invaders.
D. Treat stream corridors to limit spread of new and established invaders in riparian habitats.
E. Contain and slow the spread of widespread established invaders.

3. Monitoring (Short and Long Term Monitoring)
   A. Monitoring and Evaluation will focus on four general questions:
      - Is the plan being implemented?
      - Are the objectives and priorities realistic and achievable?
      - Are the treatments effective in meeting the planned objectives?
      - Are the weeds continuing to spread beyond our control actions?

I. **Monitoring Narrative:**

Implementation monitoring is proposed and will occur as the treatments are installed or applied. District staff (Weeds and Trails) will monitor all treatments to ensure proper implementation. The cost of the implementation monitoring is included in the treatment costs.

Part VI - Emergency Stabilization Treatments and Source of Funds

Treatment Cost Summary

			NFS Lands				U-W-C NF			All
		Unit	# of		Other	# of	Fed	# of	Non Fee	Total
Line Items	Units	Cost	Units	BAER $	$	units	$	Units	$	$
A. Land Treatments										
EDDA-C-TNF	Each	$5,600	1	$5,600	$0		$0		$0	$5,600
Weeds - U-W-C NF	Each	$7,040		$0	$0	1	$7,040		$0	$7,040
Insert new items above this line/				$0	$0		$0		$0	$0
Subtotal Land Treatments				$5,600	$0		$7,040		$0	$12,640
B. Channel Treatments										
				$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										
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Road & Trails				$0	$0		$0		$0	$0
D. Protection/Safety										
Hazard Signs U-W-C NF	Each	$600	1	$600	$0	1.6	$950		$0	$1,550
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Structures				$600	$0		$950		$0	$1,550
E. BAER Evaluation										
C-T Evaluation	Each	$1,300	2	$2,600	$0		$0		$0	$0
U-W-C Evaluation	Each	$1,080	1	$1,080	$0		$0		$0	$0
Insert new items above this line/				---	$0		$0		$0	$0
Subtotal Evaluation				---	$0		$0		$0	$0
F. Monitoring										
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Monitoring				$0	$0		$0		$0	$0
G. Totals				$6,200	$0		**$7,990**		**$0**	**$14,190**
Previously aooroved										
Total for this request				**$6,200**						

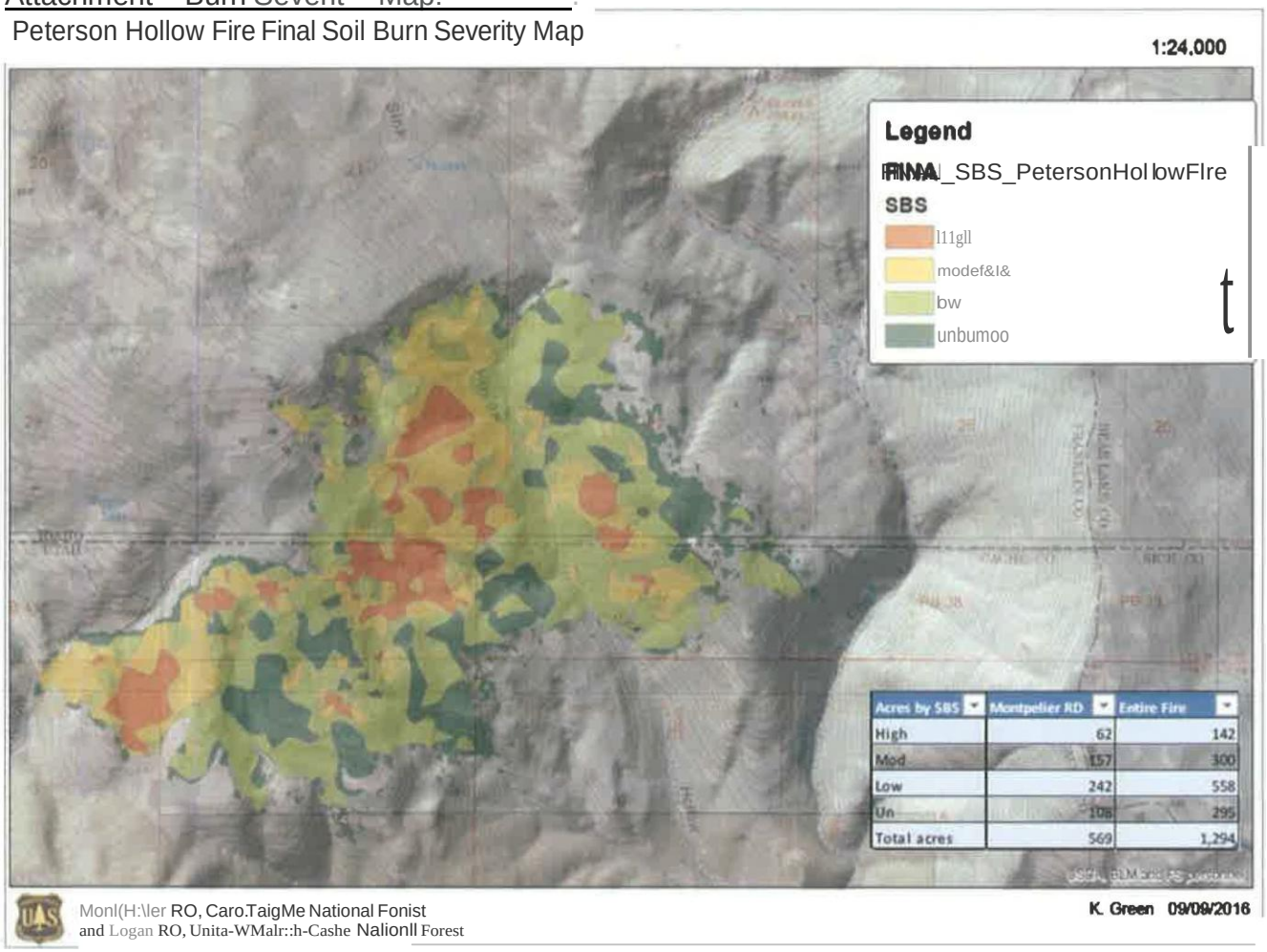
PART VII - APPROVALS

1. Forest Supervisor (signature) — Date: 9.14.16

2. Regional Forester (signature) — Date

Attachment - Burn Severit Map:

Peterson Hollow Fire Final Soil Burn Severity Map



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