Date of Report: 7/28/07

Edited JBruggink 08/01/2007, 10/16/2007

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

[ ] 1. Initial Request (Best estimate of funds needed to complete eligible stabilization measures)

[X] 2. Interim Report #____
[X] 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: Hawken

B. Fire Number: NV3HTF-2957

C. State: NV

D. County: Washoe

E. Region: 4

F. Forest: Humboldt-Toiyabe

G. District: Carson RD

H. Fire Incident Job Code P4DQ77

I. Date Fire Started: 7/16/07 J. Date Fire Contained: 7/25/07

K. Suppression Cost: 3.1 millon

L. Fire Suppression Damages Repaired with Suppression Funds
1. Fireline waterbarred (miles): 2 miles
2. Fireline seeded (miles):
3. Other (identify):

M. Watershed Number:1605010203 – Truckee River

N. Total Acres Burned: 2,703
NFS Acres(1946) Other Federal ( ) State ( ) Private (764)

O. Vegetation Types: Jeffery pine, mixed conifer (white fir, Jeffery pine) aspen, sagebrush and bitterbrush

P. Dominant Soils: Fravel, Booford, Jumbo, Old Camp

Q. Geologic Types: Andesite, basalt, and volcaniclastic flows

R. Miles of Stream Channels by Order or Class: perennial – 0.5 mile; intermittent – 6 miles

S. Transportation System

Trails: 6 miles Roads: 5 miles

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 1434 (53%) (low) 917 (34%) (moderate) 363 (13%) (high)

B. Water-Repellent Soil (acres): none

C. Soil Erosion Hazard Rating (acres): 1639 (low) 1032 (moderate) 242 (high)

D. Erosion Potential: 2 to 8 tons/acre

E. Sediment Potential: 1280 to 5120 cubic yards / square mile

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years): 3-10

B. Design Chance of Success, (percent): 80

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

D. Design Storm Duration, (hours): 6

E. Design Storm Magnitude, (inches): 2

F. Design Flow, (cubic feet / second/ square mile): 14 cfsm

G. Estimated Reduction in Infiltration, (percent): 0

H. Adjusted Design Flow, (cfs per square mile): 14 cfsm

PART V - SUMMARY OF ANALYSIS

A. Describe Critical Values/Resources and Threats:

1) Homes, structures, roads, trails and public safety

Homes– The Hawken Fire burned adjacent to private homes in the Caughlin Ranch subdivision. Alum Creek, which was about 75% burned, flows through the subdivision in a greenbelt. Soil erosion and rockfall above the Eagle's Nest homes could result in damaged property. Increased flow in Alum Creek could cause flooding if capacity in the channel and culverts is not adequate, although no homes look at risk from flooding. High flows could also debris, sediment and ash into the subdivision and deposit it along the roads and greenbelt. Public entry into the burned area on the Alum Creek road network, or on trails from the subdivision could be a hazard to public safety from tree downfall and stump holes.

Roads and trails – The burn area is accessed by the Hunter Lake Road and Alum Creek road network. A small section of the Hunter Lake Road, through a riparian area, is at risk of damage from increased runoff from the burned slope above. This road will remain open to the public and this section will become a muddy bog without treatment.

Public safety – There are about 11 miles of roads within the burn area, including the powerline road owned by Sierra Pacific. Roads through Alum Creek are currently ungated and the public has access to the burned area. There is a high risk to public safety from falling trees and stump holes. A dirt trail runs adjacent to Alum Creek from the subdivision. Trees in the channel bottom have burned resulting in a public safety hazard.

2) Water quality:

Hunter Creek enters the Truckee River immediately above the intake pipes for the Chalk Bluff Water Treatment Plant. Only a small portion of this watershed burned and the Truckee Meadows Water Authority has determined that it does not pose a threat to water quality.

Water quality in Alum Creek is likely to be impacted from sediment and ash during the first fall rains. This stream flows beneatht the Steamboat Ditch, a large irrigation canal, as it enters the Caughlin Ranch subdivision. Inadequate channel capacity could result in ponding above the canal and possible overtopping. This section of stream was cleared of vegetation immediately after the fire to prevent this from happening. A couple of small intermittent channels also flow directly into the ditch; storm runoff from these basins could deliver sediment and ash into the canal. The Truckee Meadows Water Authority has not expressed concern about water quality from Alum Creek affecting their downstream treatment plant. The intake pipes to this plant can be shut-off for a period of time without affecting the municipal water supply for Wahoe County.

3) Ecosystem stability:

Rockfall, debris slides and flows occur under normal conditions within the inner gorges of Hunter and Alum Creeks. Rockfall occurs under normal conditions below the promontory above the Eagle's Nest subdivision. Potential resources at risk from geologic hazards include debradation to water quality, property damage in the housing development downstream from the Alum Creek inner gorge, and dmage to houses from rockfall in the Eagle's Nest neighborhood.

4) Wildlife:

The eastern portion of the Hawken Fire area provided critical winter range for mule deer. Vegetation in this area included bitterbrush, sagebrush and native grasses. Deer winter range has been impacted along the entire Carson Range from development and fires. Loss of this habitat in the Hawken Fire will impact the deer population.

5) Soil Productivity:

Increased erosion in the Alum Creek watershed could result in the loss of soil productivity, particularly in those areas with a high burn severtiy. Most of these areas supported Jeffrey pine and mixed conifer prior to the fire. Most soils in the fire perimeter are rocky to very rocky loams on slopes ranging form 15 to 60% slopes. No water repellancy was detected and calculated erosion rates were moderate in the high burn severity areas. Erosion rates were higher in the upslope highlands above the Eagle Nest and Caughlin subdivisions due to houses being built on midslopes and sandier soils.

6) Noxious weeds:

Noxious weed surveys conducted by both the Forest Service and Washoe County over the past few years identified populations of medusahead and thistle. Noxious weed populations could increase after the fire.

B. Emergency Treatment Objectives: The treatment objectives are focused on protecting the property and homes and in the Caughlin Ranch subdivision from debris flows, flooding and rockfall. Most of the proposed treatments are located on private property near the homes. Areas of high burn intensity located in Alum Creek headwaters section will be gated and signed. This area is priority for closure and should remain closed to a BAER treatments are in place and forest restoration projects are completed.

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

Land **90** % Channel **95** % Roads/Trails **95** % Protection/Safety **100** %

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land	80	90	95
Channel	90	80	70
Roads/Trails	90	95	95
Protection/Safety	95	95	90

E. Cost of No-Action (Including Loss):3510273

F. Cost of Selected Alternative (Including Loss):364600

G. Skills Represented on Burned-Area Survey Team:

[**x**] Hydrology	[**x**] Soils	[**x**] Geology	[ ] Range	[ ]
[ ] Forestry	[**x**] Wildlife	[ ] Fire Mgmt.	[ ] Engineering	[ ]
[ ] Contracting	[ ] Ecology	[**x**] Botany	[**x**] Archaeology	[ ]
[ ] Fisheries	[ ] Research	[ ] Landscape Arch	[**x**] GIS	

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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:

Ground Hydromulch - Apply hydromulch to approximately 70 acres upslope from the Eagle Nest neighborhood and the Caughlin Ranch subdivision downstream of Alum Creek. The intent is to truck-spray hydromulch up to 300 feet upslope of residential areas in need, on the burned slope along Caughlin Parkway road, and Caughlin Parkway subdivision hillslope adjacent to Alum Creek. This treatment will reduce the risk of excessive runoff and sediment delivery to private and state lands, as well as the county road system and associated drainages.

Hand Mulching – Straw mulch with weed free straw to provide temporary cover to an erosion prone area above Hunters Creek road. This area is prone to excessive erosion on to a main forest service road. This cover will alleviate excessive erosion that could block travel.

Hazard Tree Removal – Many large conifer trees were killed by the Hawken fire adjacent to Alum Creek and pose safety concerns for pedestrians along the Alum Creek walking and biking trail. Due to the proximity to neighborhoods on both sides, complete closure is not feasible and removal of these hazard trees is critical for public safety.

Noxious Weed Detection Survey – Three know populations of Medusahead, Scotch and Canada thistle exist within the fire perimeter. With a multiagency fire suppression effort unknown populations of noxious weeds could have been introduced. Also with driving in know populations of noxious weeds by fire suppression could have spread these noxious weeds. A noxious weed detection survey is needed to survey for noxious weeds along firelines and interior suppression efforts. If populations are detected in the spring they will be hand-pulled and bagged and disposed offsite.

Channel Treatments:

Debris Basins – Upslope erosion will be mitigated and metered by three debris basins located upstream from Caughlin Park subdivision. Debris basins will be designed to capture heaiver sediments of coarse to fine sands with some silts. Finner silts, clay and ash will travel downstream but damaging heavier sediments will be trapped. Downstream culvert capacity was determined to be adequate by city and county engineers so they will pass to the Truckee River. Sediment clearing will be conducted when debris basins are at 90% of capacity to insure capturing capacity durning large storm events.

Channel Clearing – Lower Alum Creek just above Steamboat Cannal is full of willows and debris that will restrict flow under the cannal and could pose a a blockage to flow. Willow removal and trash removal is necessary for unrestricted flow. Also in the lower middle section of Alum Creek is excessive large trash that could also pose a threat for proper routing of flows.

Early Flood Warning System – Due to the eastern Sierra Mtn. being prone to flash flooding, areas that are burned are highly prone to flooding. Due to Caughlin park and subdivision below Alum Creek, this area has high pedestrian use that flooding could poses a threat to public safety. With Alum Ck. having the greatest area of its watershed burned, and the most with high severity it has a potential for flooding. Early flood warning system could be crucial for early warning of flash-flooding for public safety. Two flood warning systems would be used to monitor upper Alum Creek and lower Alum Creek above Caughlin Park subdivision.

Roads and Trails Treatments:

Road Restoration – Hunter Lake road next to Evans Creek is a main travel route that is at risk from upslope erosion and damaged road base due to fire suppression and poor drainage. With a loamy soil that burned fairly hot and with steep slopes above Hunter Lake road, erosion and excessive runoff will flow into a deeply incised

road next to the Evans Creek riparian zone. Road base will be restored and gravelled and proper drainage function will be restored. Upslope burned areas will be mulched to reduce upslope erosion.

Protection/Safety Treatments:

Closure Gates and Closure Fencing – With Alum Creek headwaters having the most high burn severity, dead trees will pose a public safety risk. Three unoffical roads exist in Alum Creek that need to be closed to protect the public from falling trees and to protect soil resources. Three gates will be installed and areas that are suscepitable to off road travel will be fenced (1 mile section). One gate and one mile of fencing was destroyed by the fire above Eagle Nest and Caughlin Park subdivision will be replaced to limit OHV into hydroseeded hillslopes.

Warning Signs – Flood hazard signs, closure signs and burned area signs will be placed at stratigic locations to warn the general public of hazards and closures.

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.)

1) Hydroseed: Establish two photopoints in the area above the homes to determine the effectiveness of hydroseeding and mulching in reducing erosion and reestablishing native vegetation. Photopoints will be established after the area is seeded and mulched. Monitoring will be conducted the following spring.

2) Hand mulching: Establish a photopoint to monitor the five acre area in the Evans Creek watershed. This area will be mulched to protect the soil from increased erosion. The photopoint will be established as soon as the area is mulched, and monitored in the spring after the snow has melted.

3) Debris basins: Monitor the debris basins in the lower reach of Alum Creek after storm events to determine need for repair or clean-out.

Part VI – Emergency Stabilization Treatments and Source of Funds **Interim #**

			NFS Lands				Other Lands				All
		Unit	# of	BAER	Other	# of	Wyden	# of	Non Fed	Total
Line Items	Units	Cost	Units	$	$	units	$	Units	$	$
A. Land Treatments										
Hydroseeding -vec.	acres	2000		$0	$0			70	$140,000	$140,000
Hand-mulching	acres	1800	5	$9,000	$0		$0		$0	$9,000
Hazard Tree Removal	each	400		$0	$0		$0	15	$6,000	$6,000
Noxious Weed Detect	each	13000	1	$13,000	$0		$0		$0	$13,000
Insert new items above this line!					$0					
Subtotal Land Treatments				$22,000	$0		$0		$146,000	$168,000
B. Channel Treatments										
Debris Basins	each	5000		$0	$0		$0	3	$15,000	$15,000
Debris Basins Clean-o	each	1000		$0	$0		$0	3	$3,000	$3,000
Channel Veg Removal	each	2500		$0	$0		$0	2	$5,000	$5,000
Early Warning Systen	each	5000		$0	$0		$0	2	$10,000	$10,000
Insert new items above this line!										
Subtotal Channel Treat.				$0	$0		$0		$33,000	$33,000
C. Road and Trails										
Road Repair & Draina	lump su	8000	1	$8,000	$0		$0		$0	$8,000
Insert new items above this line!										
Subtotal Road & Trails				$8,000	$0		$0		$0	$8,000
D. Protection/Safety										
Closure Gates	each	6500	4	$26,000	$0	0	$0		$0	$26,000
Closure Fencing	mile	9000	1	$9,000	$0	0	$0		$0	$9,000
Wood-rail Fencing	mile	52000		$0	$0		$0	1	$52,000	$52,000
Flood Warning Signs	each	100	6	$600	$0	0	$0		$0	$600
Closure Signs	each	400	10	$4,000	$0	0	$0		$0	$4,000
Insert new items above this line!					$0					
Subtotal Structures				$39,600	$0		$0		$52,000	$91,600
E. BAER Evaluation										
Team Assessment US	each	40000	1	$0	$30,000		$0		$0	$30,000
Team Assessment W	support	20000					$0		$0	
BAER Implementation	each	20000	1	$0			$0		$0	$0
Insert new items above this line!										
Subtotal Evaluation				$0	$30,000		$0		$0	$30,000
F. Monitoring										
Photo-point monitoring	each	6000	1	$6,000			$0		$0	$6,000
Insert new items above this line!					$0					
Subtotal Monitoring				$6,000	$0		$0		$0	$6,000
G. Totals				$75,600	$30,000		$0		$231,000	**$336,600**
Previously approved				$75,600						
Total for this request				$0			$0			**$0**

PART VII - APPROVALS

1. /s/Edward C. Monnig — Oct 15, 2207
   Forest Supervisor (signature) — Date

2. /s/ William P. LeVere for — 10/18/07
   Regional Forester (signature) — Date