USDA-FOREST SERVICE FS-2500-8 (6/06)

Date of Report: 8/24/09

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: **Wiliams Creek**

B. Fire Number: **OR-UPF-009071**

C. State: **Oregon**

D. County: **Douglas**

E. Region: **06 (PNW)**

F. Forest: **15 (Umpqua National Forest)**

G. District: **(06) North Umpqua**

H. Fire Incident Job Code: **P6E3FN**

I. Date Fire Started: **07/28/09**

J. Date Fire Contained: **08/16/09**

K. Suppression Cost: **17.2 million**

L. Fire Suppression Damages Repaired with Suppression Funds
1. Fireline waterbarred (miles): **17**
2. Fireline seeded (miles):
3. Other (identify): **Erosion control for roads used as fireline, drop points, safety zones and water sources**

M. Watershed Number: **1710030107, 1710030109, 1710030110**

N. Total Acres Burned: 8393
NFS Acres (7766) BLM (114) State ( ) Private (514)

O. Vegetation Types: **Douglas Fir/White Fir/Western Hemlock**

P. Dominant Soils**: Loamy-skeletal Typic Xerochrept**

Q. Geologic Types: **Tub, Tus**

R. Miles of Stream Channels by Order or Class: **Class 1 – 2.0 miles, Class 2 – 5.0 miles, Class 3 – 12.8, Class 4 – 27.7 miles**

S. Transportation System

Trails: **11.6** Roads**: 21.4**

PART III - WATERSHED CONDITION

A. Burn Severity (acres): **Unburned/very low- 1049 Low- 4519 Moderate- 2461 High- 340 (BARC) High – 175 (IR Mapping)**

B. Water-Repellent Soil (acres): **Not Estimated** Road and Protection Treatments are not based on increased water repellency and runoff. The low estimate of High Burn Severity indicates debris, not sediment (except from road cut and fillslope erosion) will obstruct road drainages.

C. Soil Erosion Hazard Rating (acres):
Low – 19% **Moderate - 80%** **High - 1%**

D. Erosion Potential**: 52 tons/acre**

E. Sediment Potential: **17 tons/acre**

PART IV - HYDROLOGIC DESIGN FACTORS

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

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

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

D. Design Storm Duration, (hours): **24 hrs**

E. Design Storm Magnitude, (inches): **2.8 in**

F. Design Flow, (cubic feet / second/ square mile): **75.1 cfs/mi^2**

G. Estimated Reduction in Infiltration, (percent): **25 %**

H. Adjusted Design Flow, (cfs per square mile): **94 cfs**

PART V - SUMMARY OF ANALYSIS

A. Describe Critical Values/Resources and Threats:

The Williams Creek Fire lies above Hwy 138 which is part of the Rogue-Umpqa Scenic Byway. Highway 138 is a major east-west route through Oregon providing direct access to numerous recreational opportunities including Diamond Lake and Crater Lake. The Williams Creek fire burned predominantly in LSR and Key Watershed with a minor inclusion of matrix land along the western edge. Portions of the fire are also within the North Umpqua Wild and Scenic corridor. The fire perimeter emcompasses most of the Williams Inventoried Roadless Area.

While ninety percent of the land within the fire's boundary are under the jurisdiction of the USFS, there are inclusions of private and other agency owned land. The BAER team contacted the Oregon Department of Forestry (to reach private forest landowners), Douglas Forest Protective Association (DFPA), and forest residents, the Roseburg District Bureau of Land Management, Pacific Power, and the Oregon Department of Transportation (ODOT). Pacific Power has a Federal Power Act license agreement for power transmission lines, and ODOT has a Highway 138 right of way with a memorandum of understanding for the highway's management. These contacts helped gather information on agency responsibilities, capability to address threats to critical values and resources identified in the assessment, and plans for emergency treatments. These include roads and crossings on roads affected by wildfire, including Oregon Highway 138, and hazard trees and safety on the highway and other roads, structures, water sources and facilities. Those contacts continue and threats to critical values and resources may require additional mitigation. Any work where owners need assistance on private land will be done through the Natural Resources Conservation Service, and BLM will submit a Burned Area Report on lands managed by the Department of Interior. USFS and BLM will cooperate on inventory and treatment, if any, for noxious weeds.

Threats to human life due to the Williams Creek Fire are associated with: 1) motorists traveling on Highway 138; 2) snag blow down along the highway, system roads, trails, and developed and disperse campsites; 3) downstream storm runoff threatening roads at stream crossings; and 4) private residences.

TRANSPORTATION INFRASTRUCTURE –
The burned area above Highway 138 has reduced the anchoring of loose rock on the steep slopes and the risk of rocks falling on the highway was been elevated. In addition, many of the fire-killed trees along the highway will be very susceptible to blow down. Rocks and fallen trees on the highway may significantly increase the risk of a vehicular accident for the next several years. Potential snag blow down on several miles of national forest system roads, campgrounds and trails also pose an elevated threat to human safety.

There are approximately 21.4 road miles within the Williams Creek Fire perimeter. The high and moderately burned areas have already delivered soil, rock and burned woody debris to drainage ditches and road surfaces. Even ordinary winter runoff will exceed the capacity of many ditches and culverts that become blocked by wildfire debris. Water that is diverted from stream channels can cause cause erosion, fill failures and landslides.

FS Rd 4710-480 lies directly above Highway 138. This road is utilized for fire and essential administrative access. This road has drainage structures which were not designed to handle the post-fire flows and debris anticipated. A failure associated with this road could directly impact Highway 138 below. Private residences are located below the 4710 road. The Forest Service should act quickly to remove the hazard these roads could present by allowing for appropriate drainage and reducing the hazard from debris and fire-killed trees. The cost of repairing crossings, fills and driving surfaces could be high.

Assessment of the private property impacts other than the impacts of the system roads has not been completed. Further assessment may be needed to look at potential impacts to the private residences and the water sources. The forest should assign qualified personnel to assess the situation with time to complete any needed work prior to the onset of heavy seasonal rains. In addition, any work completed in the area should recognize there are special use permits identifying buried water lines along the 4710 road.

It was noted during the BAER assessment that culverts on Highway 138 under the jurisdiction of ODOT would benefit from cleaning and brushing before the first season event. While the BAER team did not analyze the capacity of the culverts outside their jurisdiction, it was noted that the culvert on Bogus Creek was likely very undersized for a 100-year event.

Note: There are relatively few acres (340) of High burn severity estimated by the Burned Area Reflectance Classification satellite imagery during the only acceptable (cloud and smokeless) LANDSAT image 8/18/2009. Soil severity based on IR mapping only identified 175 acres of high severity. Some unknown portion of the Moderate and High burn severity acre may contribute some sediment to the road drainage system, but treatment recommendations are based on expected floatable organic debris delivery. Professional judgement

and the team's experience in this landscape led us to expect low sediment delivery, and no Land Treatments were recommended. Road Treatments focused on road drainage pathways. The team did not improve the preliminary burn severity map, or estimate increased runoff from water repellent soils.

B. Emergency Treatment Objectives:

PROVIDE FOR PUBLIC/FOREST SERVICE HEALTH AND SAFETY – Provide safe access for the public and Forest Service personnel on essential routes through the area especially contractually required locations. Provide safe access to Forest Service employees to reduce failure risk and maintain roads during BAER treatments and storm patrols. Reduce the risk of vehicular accidents on Highway 138 due to hazard trees and debris.

PROTECT PRIVATE LAND AND FOREST TRANSPORTATION INFRASTRUCTURE – Protect private and public property by improving drainage along FS roads 4710 and 4710-480. Reduce the loss of road crossings and fills from winter runoff, by reducing the risk of drainage system failure with culvert upgrades, culvert and ditch cleanout, waterbarring and storm patrols. The cost to reduce the risk of the loss of crossings and fills, driving surfaces, and downstream water quality is much less than the cost of repairing roads.

Note: Treatments such as log terracing, hillslope seeding and instream channel treatments were either not expected to be successful or necessary. The included emergency BAER treatments were considered to have a high chance of success and considered necessary to BAER Objectives. No emergency exists for heritage resources and any cost of heritage input will be included in treatment costs.

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

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

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land	60%	55%	55%
Channel			
Roads/Trails	80%	90%	95%
Protection/Safety	95%	95%	90%

E. Cost of No-Action (Including Loss): **$1,380, 000**

F. Cost of Selected Alternative (Including Loss): **$275,749**

G. Skills Represented on Burned-Area Survey Team:

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

Team Leader: **Joy Archuleta**

Email: jearchuleta@fs.fed.us Phone: **541-496-3532** FAX: **541-496-3534**

H. **Treatment Narrative:**

Land Treatments

Invasive Weed Detection Assessment - Assessment to determine if invasive (noxious) weed treatments are needed. An assessment plan is attached to this request. The forest will complete the surveys and submit an interim request for any needed treatments plus effectiveness monitoring based on what the surveys show. Areas that will need to be surveyed include: roads, trails leading into the wilderness, areas of impact such as staging areas, drop points, safety zones, containment lines, and any area where material (rock, soil etc.) is brought in. Areas near known infestations and areas where new infestations may have been introduced should be inventoried for at least three years.

Channel Treatments - none

Roads and Trail Treatments

Repair Burned Fills: Spot repair of roads whose stability has been compromised due to burning of fill material.

Grade Sags: Construct low points to divert water to prevent surface and fill erosion.

Drainage Dips: Construct rolling outsloped dips with surfacing to improve ditch relief and the ability of the roads to better handle anticipated increases in surface runoff.

Waterbars: Construct waterbars to improve ditch relief and enable maintenance level 1 roads to better handle expected increase in surface runoff.

Replace Undersized Culverts: Replace two extremely undersized culverts at the Raspberry and Archie stream crossings on FS Rd 4710-480. Failure from plugging and overtopping culverts at these stream crossings could affect Highway 138 directly downstream.

Ditch Cleanout and Clean/Brush Drainages: Remove material from ditches. Remove down woody debris from within 15 feet (where possible) of stream crossings on the following roads: 4710, 4710-480, 017, 031 road. Remove rubble from stream channels blocking drainage along the 4710-480 road. Other areas may be identified.

Protection/Safety Treatments

Remove Debris from Rd 4710-480: Remove rubble and debris that accumulates along the road that could potentially fall on to the Highway below. This may have to be repeated for several seasons.

Hazard Tree Removal: Removal of individual hazard trees along essential access routes and BAER construction sites. Campgrounds, dispersed sites and trailheads will also be assessed for hazard trees.

Storm Patrol: Patrol area during and immediately after storm events. Repair, unplug, or aid in drainage of road system to reduce the risk of catastrophic road failure.

Trailhead and Road Hazard Signing: Post hazard signs at approximately 8 trail and 3 road sites to inform visitors of post-fire hazards. Hazard trees will not be felled on trails, except at trailheads.

Implementation costs are built into line item treatment costs.

BAER Evaluation

Baer Assessment: Support completion of the initial survey identifying emergency treatments

I. **Monitoring Narrative: -** No monitoring identified.

Part VI – Emergency Stabilization Treatments and Source of Funds

Line Items	Units	Unit Cost	# of Units	BAER $	Other $	# of units	Fed $	# of Units	Non Fed $	Total $
A. Land Treatments										
Invasive Weed Assessment		75.62	39	$2,949	$0		$0		$0	$2,949
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Land Treatments				$2,949	$0		$0		$0	$2,949
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										
Repair Burned Fills	Sites	3000	10	$30,000	$0		$0		$0	$30,000
Grade Sags	Sites	2000	5	$10,000	$0		$0		$0	$10,000
Drainage Dips	Sites	1000	15	$15,000	$0		$0		$0	$15,000
Waterbar Roads	Miles	1000	3	$3,000	$0		$0		$0	$3,000
Replace Undersized Culverts	Each	20000	2	$40,000	$0		$0		$0	$40,000
Ditch Cleanout and Clean/Brush Drainages	Miles	1200	8	$9,600	$0		$0		$0	$9,600
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Road & Trails				$107,600	$0		$0		$0	$107,600
D. Protection/Safety										
Remove Rubble from Boundary Road	yd^3	20	100	$2,000	$0		$0		$0	$2,000
Road Hazard Tree Removal	Miles	2400	13	$31,200	$0		$0		$0	$31,200
Storm Patrol	Event	1000	4	$4,000	$0		$0		$0	$4,000
Trailhead Hazard Signing	Each	125	10	$1,250			$0		$0	$1,250
Road Hazard Signing	Each	250	3	$750			$0		$0	$750
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Structures				$39,200	$0		$0		$0	$39,200
E. BAER Evaluation										
BAER Assessment	days	350	40	$15,600			$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				$149,749	$0		**$0**		**$0**	**$149,749**
Previously approved										
Total for this request				**$149,749**						

PART VII - APPROVALS

1. /s/ Clifford J. Dils — August 24, 2009
   Forest Supervisor (signature) — Date

2. _____ _____
   Regional Forester (signature) — Date

Williams Creek Fire
BAER Noxious Weed Treatment, Prevention, & Monitoring Plan

Inventory and Early Treatment:
Areas of known infestations and areas where new infestations may have been introduced should be inventoried for at least three years after the fire, starting with the first summer after the fire. Early detection of new sites greatly facilitates effective treatment of sites and dramatically decreases treatment costs.

Known infestations – Previously known infestations will be inventoried to see if existing infestations are increasing as a result of the fire. Existing infestations within the fire perimeter that are of principle concern include:

Spotted and Meadow knapweed along major roads and power line route
Scotch broom along major routes and power line routes
Himalaya blackberry along major routes and power line route

Other noxious weeds that are likely within the fire perimeter that we do not currently have inventoried include: Canada thistle, bull thistle, St. Johnswort and medusahead rye.

Sources for introduction of noxious weeds – Among the noxious weeds in the immediate vicinity of the fire are false-brome, spotted knapweed, Scotch broom, and medusa head rye. There are additional noxious weed species in the County that could easily have been transported on fire vehicles and equipment into this area. These species include: wooly distaff thistle, yellow starthistle, and purple loosestrife.

Inventory Methods – Areas that will need to be inventoried include: roads, trails leading into the interior of the fire perimeter, areas of impact such as staging areas, drop points, safety zones, containment lines, and any area where material (rock, soil etc.) is brought in. Noxious weed locations will be mapped with a GPS unit and information about the infestations (weed species present, size of population, estimated number of plants, *etc*.) will be documented. Inventory will occur in the summer. Most areas will be inventoried twice during the season. The first inventory will document sites and provide data for any treatment that would have to occur at site, beyond hand-pulling of infestations which would normally occur concomitant with inventories. The second inventory will locate plants that were missed or have bolted since the initial inventory. Inventories are anticipated to be needed for at least three years.

First Year Monitoring Costs:

Williams Creek Fire	Road Miles	Miles/Day	Cost/Day	Visits/Season	Total
Open Road Inventory	16	20	$184	2	$368.00
Closed Road, Trail, and Powerline Inventory	23	3	$184	1	$1472.00
Analysis and Assessment	N/A	N/A	$184	3 days	$552.00

	Cost/Month	Months	Mileage Rate	Mileage	
Vehicle expenses	$277.00	1	$0.28/mi	1000	$557.00

Total	**$2,949.00**