Date of Report: 11/14/2011

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 # 1 .
[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: Shadow Lake Fire

B. Fire Number: OR-DEF-000676

C. State: OR

D. County: Deschutes/Jefferson/Linn

E. Region: 6

F. Forest: Deschutes/Willamette

G. District: Sisters RD (Deschutes)/ McKenzie River RD (Willamette)

H. Fire Incident Job Code: P6GC8J

I. Date Fire Started: August 28, 2011

J. Date Fire Contained: as of 11/14/2011 fire still in patrol status.

K. Suppression Cost: $10,811,489 as of 9/25/2011

L. Fire Suppression Damages Repaired with Suppression Funds
1. **Fireline waterbarred (miles)**: 2
2. **Fireline seeded (miles):** 0
3. **Other (identify):** approx. 8 miles of fireline decommissioned

M. Watershed Number: 1707030109 Upper Metolius River (Deschutes)
1709000401 Upper McKenzie River (Willamette)

N. Total Acres Burned: 5,984 (Deschutes)/ 4,016 (Willamette)
[10,000] NFS Acres [0] Other Federal [0] State [0] Private

O. Vegetation Types: High elevation forests in the wilderness and adjacent forest areas include lodgepole pine, mountain hemlock, and subalpine fir. Common understory plants are huckleberry, Ross sedge, needlegrass, princess pine, lupine, squaw carpet, and pinemat manzanita. These forest types are adapted to infrequent high intensity fire (Fire Regimes 4 & 5), trees often naturally reseed, and understories tend to recover readily from stand replacing fire events.

Mid elevation forests are primarily composed of mixed conifers including white fir, ponderosa pine, and lodgepole pine with a snowbrush and sedge understory. These forests historically experienced a mosaic of fire intensities ranging from low to high intensity, depending on microsites and localized conditions (Fire Regime 3a and 3b) and understories tend to recover readily from a variety of fire intensities. Forest recovery is dependent on remaining seed sources.

A higher diversity of plant species occur in the fire area along riparian areas of Cache Creek, Big Lake, lakes in the Cache Mtn. RNA and mesic meadows on the Willamette. Most riparian plants are well adapted to disturbance and have adaptations to recover rapidly from fire.

P. Dominant Soils: Surface soils consist of a loamy sand texture as a result of basaltic ash deposits from nearby Sand Mountain. These soils were originally classified as Typic Cryorthents or Cryandepts and would likely now fall into the ashy Vitricryand classification within the Andisol soil order.

Q. Geologic Types: Mt. Washington is a stratovolcano which has undergone extensive erosion due to mountain glaciers. Other geologic features in the area include glacial moraines which have formed steep ridges at the base of Mt. Washington and basalt lava flows which originated from nearby Belknap Crater and other vents in the Sand Mountain Complex.

R. Miles of Stream Channels by Order or Class:
Deschutes NF – Class 4: 6.2 miles; Class 3: 0.1 miles
Willamette NF – Class 4: 3.9 miles

S. Transportation System

Trails: Deschutes NF – 15.8 miles
Willamette NF – 7.5 miles

Roads: Deschutes NF – 25.7 miles
Willamette NF – 6.6 miles

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 8,272 **(low)** 1,637 **(moderate)** 91 **(high)**

B. Water-Repellent Soil (acres): 0

C. Soil Erosion Hazard Rating (acres): 9,954 **(low)** 45 **(moderate)** 45 **(high)**

D. Erosion Potential: 3.44 tons/acre

E. Sediment Potential: 2200 tons/square mile

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

D. Design Storm Duration, (hours): 0.5

E. Design Storm Magnitude, (inches): 0.67 - 0.77

F. Design Flow, (cubic feet / second/ square mile): 86 - 99

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

H. Adjusted Design Flow, (cfs per square mile): 86 - 99

PART V - SUMMARY OF ANALYSIS

A. Describe Critical Values/Resources and Threats:

Road Prisms
A rain event in early October caused significant runoff on the south slope of Little Cache Mtn. – an area with moderate and high burn severity – which resulted in buried ditchlines and culverts and deposition of 4-6 inches of silt onto Road 1028500 (Figure 1). Inadequate drainage was also found on a segment of Road 1028500 to the west and a segment of Road 1028550, both downslope of burned areas that could experience increased runoff. Subsequent storm events could result in even more damage to the road prism in these areas. The probability of damage to these road segments is “likely” and the magnitude of consequences is “major”, leading to a “very high” risk determination. Therefore, treatment should be considered (*Treatment 6-T*).

B. Emergency Treatment Objectives:

2. Minimize destruction of property (i.e. trail and road prisms) from identified threats by:
   a. stabilizing drainage on trails in the burned area
   b. establishing adequate drainage on road systems affected by the burned area before large storm events occur
   c. patrolling during storm events to detect drainage issues before they damage property

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

Roads/Trails 90% Roads

D. Probability of Treatment Success

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

E. Cost of No-Action (Including Loss): $1,658,160

F. Cost of Selected Alternative (Including Loss): $804,840

G. Skills Represented on Burned-Area Survey Team:

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

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H. Treatment Narrative:

Treatment #6-T – Improve Road Drainage

In September 2011 Deschutes road maintenance engineers did an initial assessment of Forest Roads 1028500 and 1028550, both within the Shadow Lake fire and on the south side of Cache Mtn. In the initial BAER request emergency stabilization of drainage on Roads 1028500 and 1028550 was approved. Treatments included: ditch and culvert cleaning and blading on 2 miles of Road 1028500; constructing 50 feet of ditch and a driveable waterbar on Road 1028500 to the west; and constructing an armored dip and apron on Road 1028550. Cost included time and equipment to complete road work ($11,500).

Addational reconnaissance conducted on October 27, 2011 and following fall rains has identified addationl damage to Forest Raod 1028550. Road engineers found long sections of the road washed out and covered with silt from the hillside. Some of the washout conditions were small trenches in the road created by storm water runoff and areas of the road prism blown out by water. Based upon additional reconnaissance the following treatments are recommended. Removal of silt from the road bed, road

reconstruction on approximatly 0.7 miles for Forest Road 1028550, and instillation of armored water dips at key spots along the road. Addational cost request include time and equipment to complete road work ($6500).

Part VI – Emergency Stabilization Treatments and Source of Funds **Interim # 1**

			NFS Lands				Other Lands			All
		Unit	# of		Other	# of	Fed	# of	on Fe	Total
Line Items	Units	Cost	Units	BAER $	$	units	$	Units	$	$
A. Land Treatments										
Subtotal Land Treatments										
B. Channel Treatments										
7-H-DES Dismantle Bridge	ea									$0
Subtotal Channel Treat.				$0	$0		$0		$0	$0
C. Road and Trails										
3-R-DES Trail Drainage	mi									$0
3-R-WIL Trail Drainage	mi									$0
5-T-DES Road Storm Patrol	days									$0
6-T-DES Road Drainage	lump	$6,500	1	$6,500						$6,500
6-T-DES SHPO Consultation	days									$0
9-C-DES Remove Wood Wagon	mi									$0
Subtotal Road & Trails				$6,500	$0		$0		$0	$6,500
D. Protection/Safety										
1-R-DES Hazard Signs	ea			$0						$0
1-R-WIL Hazard Signs	ea			$0						$0
2-R-DES Patrol Wilderness Bd	lump			$0						$0
4-T-DES Patrol Rd Haz Trees	days			$0						$0
Subtotal Structures				$0	$0		$0		$0	$0
E. BAER Evaluation*										
THSP Assess. Team - DES	days				$0					$0
THSP Assess. Team - WIL	days				$0					$0
Subtotal Evaluation				$0	$0		$0		$0	$0
F. Monitoring										
8-W-DES Noxious Weeds	days			$0						$0
8-W-WIL Noxious Weeds	days			$0						$0
10-C-DES Cultural Sites	days			$0						$0
10-C-WIL Cultural Sites	days			$0						$0
Subtotal Monitoring				$0	$0		$0		$0	$0
G. Totals				$6,500	$0		**$0**		**$0**	**$6,500**
Previously approved				$0						
Total for this request				**$6,500**						

TOTAL DESCHUTES NF **$6,500**

TOTAL WILLAMETTE NF **$0**

** approximate; detailed costs available upon request*

PART VII - APPROVALS

1. _____ _____
Deschutes National Forest Supervisor (signature) Date

2. _____ _____
Willamette National Forest Supervisor (signature) Date

3. Nora B. Rasure (for): _____ 10/25/2011
Regional Forester R6 (signature) Date