

Date of Report: 8/21/07

**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 # \_\_\_\_\_  
    ☐ 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: Farmington CanyonB. Fire Number: UT-NWS-000697C. State: UtahD. County: DavisE. Region: IntermountainF. Forest: Wasatch-CacheG. District: Salt LakeH. Fire Incident Job Code: P4DV5JI. Date Fire Started: 08/08/2007J. Date Fire Contained: 08/16/2007K. Suppression Cost: 600,000

L. Fire Suppression Damages Repaired with Suppression Funds

1. Fireline waterbarred (miles): 3  
2. Fireline seeded (miles): 0  
3. Other (identify):

M. Watershed Number: Great Salt LakeN. Total Acres Burned: 700

NFS Acres(700)    Other Federal ( )    State ( )    Private ( )

O. Vegetation Types: Gambel Oak, Sage/GrassP. Dominant Soils: Ridd rocky sandy loam, 30 to 70% slopes, eroded and Kilburn-Francis association, 30 to 50% slopes, eroded.

Q. Geologic Types: Archean schist and gneiss, Holocene and Pleistocene landslide deposits, Pleistocene Lake Bonneville Group

R. Miles of Stream Channels by Order or Class:

Perennial – 2.5

Intermittent – None

Ephemeral – 4 miles

S. Transportation System

Trails: 2 miles

Roads: 4 miles

### **PART III - WATERSHED CONDITION**

A. Burn Severity (acres): 400 (low) 300 (moderate)     (high)

B. Water-Repellent Soil (acres): none

C. Soil Erosion Hazard Rating (acres):  
300 (low) 300 (moderate) 100 (high)

D. Erosion Potential: 12.84 tons/acre (average for low and moderate severity areas)

E. Sediment Potential: 896 cubic yards / square mile

### **PART IV - HYDROLOGIC DESIGN FACTORS**

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

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

C. Equivalent Design Recurrence Interval, (years): 5

D. Design Storm Duration, (hours): 6

E. Design Storm Magnitude, (inches): 1.4

F. Design Flow, (cubic feet / second/ square mile): 15

G. Estimated Reduction in Infiltration, (percent): 20%

H. Adjusted Design Flow, (cfs per square mile): 35

### **PART V - SUMMARY OF ANALYSIS**

- A. Describe Critical Values/Resources and Threats: Some private residences in Farmington City are at risk from flood events that might occur as a result of high intensity thunderstorms this fall or unusually rapid snowmelt next spring. While the majority of residences in the city are protected from flooding or debris flows by the existence of debris basins in Farmington Canyon and on North Compton Bench, there are a number of homes between these canyons and downslope of first order streams that have no such flood control structures. Although these drainages are small in size, they are exceedingly steep and have all been affected to some extent by the fire. Where these drainages have burned at moderate severity or higher, insufficient ground cover currently exists to protect the soils from accelerated erosion

resulting from high intensity thunderstorms this fall. Runoff and sediment volumes from a thunderstorm over these drainages could overwhelm the city storm drain infrastructure and inflict flood damages on these residences. Other property values at risk from similar runoff events include FR #007 (Farmington Canyon Road) that provides year round access to an FAA radar installation and the Bonneville Shoreline Trail (BST) which is a heavily used recreation trail in close proximity to Farmington Creek. Both facilities have inadequate drainage to handle anticipated increased runoff flows from adjacent upslope burned areas. Soil productivity values at risk include a very high potential for erosion, particularly along the lower sagebrush/grass benches that have burned at moderate severity or higher. These areas are currently in degraded watershed condition from past overgrazing, inappropriate forms of recreation, and invasion of weedy and invasive plant species. The areas are mapped as an eroded phase, and were experiencing accelerated pre-fire rates of erosion. Invasive plant species in the fire and on nearby non Forest lands include cheatgrass and yellow star thistle.

**B. Emergency Treatment Objectives:**

- 1) Protect homes from immediate thunderstorm threat by installing small temporary desiltation structures in the small first order drainage immediately to the south of Shephard Creek.
- 2) Protect the road surface of FR007 from washouts by improving drainage below moderate burn severity areas.
- 3) Provide real time precipitation data and intensens thunderstorm activity warning to Davis County Emergency Services.

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

Land    % Channel 100 % Roads/Trails 100 % Protection/Safety 100 %

**D. Probability of Treatment Success**

	Years after Treatment		
	1	3	5
Land	na		
Channel	65		
Roads/Trails	100		
Protection/Safety	100		

**E. Cost of No-Action (Including Loss):** The no action alternative presents the possibility of loss of human life if a large thunderstorm were to cause serious flooding in the residential communities downslope of the fire. There are at least 6 individual homes along the lower benches directly threatened with flooding from moderately burned first order drainages.

**F. Cost of Selected Alternative (Including Loss):** **\$19,350**

**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 checked="" type="checkbox"/> Fire Mgmt.	<input type="checkbox"/> Engineering	<input type="checkbox"/>
<input type="checkbox"/> Contracting	<input checked="" type="checkbox"/> Ecology	<input checked="" type="checkbox"/> Botany	<input type="checkbox"/> Archaeology	<input type="checkbox"/>
<input type="checkbox"/> Fisheries	<input type="checkbox"/> Research	<input type="checkbox"/> Landscape Arch	<input type="checkbox"/> GIS	

Team Leader: Paul Flood

Email: pflood@fs.fed.us

Phone: 801-236-3440

FAX: 801-524-3172

#### **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: None proposed. Post fire ground cover ranged from 55% (west facing slopes, moderate severity) to 75% (north facing slopes, low severity) and consisted primarily of scorched litter and rock. Very little of the non-woody forbs and grasses were actually killed by the fire, and regeneration is expected to occur rapidly this fall.

Channel Treatments: Install 1,000 linear feet of temporary, wire reinforced silt fence sediment traps in one moderately burned first order drainage above homes located in the Grand View Subdivision along North Compton Road and 1400 North in Farmington City. These traps will be maintained, by FS crews, until ground cover and vegetation in the first order watersheds have recovered to the point where flood potential has returned to prefire levels. Specifically, these traps are designed to retain sediment, but not water, from thunderstorm and snowmelt events for approximately one year. Existing city storm drains will handle desilted runoff throughflows from the traps. Removal of the structures will be done by the Forest Service and is anticipated to occur during the fall of 2010.

Roads and Trail Treatments: Clean out the inlet sections and pipe on four culverts on Forest Road 007. Specifically, this treatment is intended to capture increased post fire runoff flows from the moderately burned first order drainage and divert it away from the road surface and prevent washouts.

Protection/Safety Treatments: Install a temporary raingauge monitoring station above the first order drainage south of Shephard Creek scheduled to receive sediment fence channel treatments. The raingauge station is intended to provide real time precipitation information for the purpose of predicting imminent flood danger during the fall of 2007. The station is owned and maintained by the Forest BAER program. The station will be remove in the fall of 2008 and will need servicing/calibration at the National Fire Center in Boise. Telemetric communication will be incorporated to communicate data to the National Weather Service and warnings to Davis County Emergency Services.

#### **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.)

The natural revegetation response of the sage/grass communities needs to be assessed during the spring of 2008, as well as the intrusion of any weed species. Effectiveness of the stream channel treatments, and the need for maintenance, should be assessed following all thunderstorm events this fall and next summer.

#### Effectiveness of Treatment Monitoring

Comparison of collected sediment volumes in stream desilting traps with weather station precipitation event data.

#### Precipitation Monitoring

Rainfall will be monitored during the late summer and early fall monsoon seasons of 2007 and 2004. This will be done via telemetric connection of standard tipping bucket rain gauge data. Assessment of data will be done by the National Weather Service in Salt Lake City. Data will be analyzed to support flood warning forecasts by the NWS and evacuation warnings by the Davis County Sheriff Department.

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

Interim #

Line Items	Units	Unit Cost	NFS Lands		Other \$	Other Lands				All Total \$
			# of Units	BAER \$		# of units	Fed \$	# of Units	Non Fed \$	
<b>A. Land Treatments</b>										
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Land Treatments</i>				\$0	\$0		\$0		\$0	\$0
<b>B. Channel Treatments</b>										
sediment traps	each	750	21	\$15,750	\$0		\$0		\$0	\$15,750
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Channel Treat.</i>				\$15,750	\$0		\$0		\$0	\$15,750
<b>C. Road and Trails</b>										
culvert cleaning	each	400	4	\$1,600	\$0		\$0		\$0	\$1,600
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Road &amp; Trails</i>				\$1,600	\$0		\$0		\$0	\$1,600
<b>D. Protection/Safety</b>										
RAWS install	each	1000	1	\$1,000	\$0		\$0		\$0	\$1,000
Raws mtce/calibrate	each	1000	1	\$1,000	\$0		\$0		\$0	\$1,000
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Structures</i>				\$2,000	\$0		\$0		\$0	\$2,000
<b>E. BAER Evaluation</b>										
intial 2500-8	each	3000	1	---	\$3,000		\$0		\$0	\$3,000
<i>Insert new items above this line!</i>				---	\$0		\$0		\$0	\$0
<i>Subtotal Evaluation</i>				---	\$3,000		\$0		\$0	\$3,000
<b>F. Monitoring</b>										
none				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Monitoring</i>				\$0	\$0		\$0		\$0	\$0
<b>G. Totals</b>				\$19,350	\$3,000		\$0		\$0	\$22,350
Previously approved										
Total for this request				\$19,350						

**PART VII - APPROVALS**

 1. /s/Faye L. Krueger \_\_\_\_\_  
 Forest Supervisor (signature)

 August 23, 2007 \_\_\_\_  
 Date

 2. /s/ Cathy Beaty for \_\_\_\_\_  
 Regional Forester (signature)

 08/31/2007 \_\_\_\_  
 Date