Date of Report: 09/01/2014

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: Shoemaker

B. Fire Number: CA-ANF-003975

C. State: CA

D. County: Los Angeles

E. Region: 05

F. Forest: Angeles National Forest

G. District: 51

H. Fire Incident Job Code: P5JB9S

I. Date Fire Started: 08/14/2014

J. Date Fire Contained: 08/24/2014

K. Suppression Cost: $ 1,000,000 (approximate cost)

L. Fire Suppression Damages Repaired with Suppression Funds
1. **Fireline waterbarred (miles)**: 0 miles dozerline, 1.5 miles handline
2. **Fireline seeded (miles):** 0
3. **Other (identify):** 0

M. Watershed Number: 6th HUC: 180701060203 San Gabriel River/Fish Fork
N. Total Acres Burned:190 acres
[190] NFS Acres **[0] Other Federal [0] State [0] Private**

O. Vegetation Types: Mixed Chaparral, Chamise Chaparral, Coast Live Oak Woodland

P. **Dominant Soils**: Trigo, granitic substratum-Exchequer families – Rock Outcrop Complex 60 to 100 percent slopes. This map unit is identified as unit 36 in the Soil Survey of the Angeles National Forest, California, 1981. The soils are very shallow to shallow (lithic) with predominate gravelly sandy loam textures (25% or greater coarse fragments). These soils are noted to exhibit high potential for dry ravel if vegetative cover is removed and have very high surface soil erosion rates. .

Q. **Geologic Types**: The main geomorphology of the Shoemaker Fire consists of crystalline metamorphic and granitic rock. The mountains represent a mature stage of topographic relief in which the drainage pattern has been developed to almost the maximum. The mountains have been highly dissected by streams and the topography consists of deep V-shaped canyons and sharp narrow ridges with hillslopes ranging from 60 to 100 percent. The landform that the fire is on is comprised of the dry headlands of minor drainages "micro" drainages on dominate fluvial lands. The formative processes have been the rapid concentration of surface and shallow subsurface flow. These concentrations acting on well fractured/weathered bedrock have resulted in the development of over-steepened, fan shaped headlands with dendritic drainage patterns that concentrate water very rapidly to a focal point of the base of the drainage. These drainages exhibit rapid response to water input as they concentrate channel flow, which is the main means of water delivery during high intensity storms.

R. **Miles of Stream Channels by Order or Class**: perennial 0, intermittent 0.33, ephemeral 0

S. **Transportation System**

Trails: 0 miles in fire but (0.25 miles in the path of a debris flow) **miles Roads:** 0 **miles**

PART III - WATERSHED CONDITION

A. **Burn Severity (acres)**: 40 **(low)** 50 **(moderate)** 100 **(High)**

B. **Water-Repellent Soil (acres)**: 160

C. **Soil Erosion Hazard Rating (acres)**: 10 **(low)** 70 **(moderate)** 110 **(high)**

D. **Erosion Potential**: 1st Year = 127 2nd Year = 46 3rd Year 31 **tons/acre** *Figures from – Rowe, Countryman and Storey, 1949 Also note that based on LA County Depatment of Public Works Sedimentation Manual 2006, the erosion potential for this area is 430 **tons/acre**.

E. **Sediment Potential**: 1st Year = 70,920 2nd Year = 25,560 3rd Year 17,280 **cubic yards / square mile** *Figures from – Rowe, Countryman and Storey, 1949. Also note that based on LA County Depatment of Public Works Sedimentation Manual 2006, the sediment debris potential for this area is 240,000 **cubic yards / square mile.**

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years): 5 to 10 years

B. Design Chance of Success, (percent): 50%* - There are no feasible land or channel emergency stabilization treatment measures to attenuate the potential for flash floods or debris flows due to the steep terrain with the occurrence of high-intensity rainfall event. Installation of hazard and warning signs at both the main trailhead and the confluence of the micro drainage and the East Fork San Gabriel River/Trail campsite for recreationist should greatly mitigate the potential threat to human life.

C. Equivalent Design Recurrence Interval, (years): 1 year. The following values in the table are the 1st year flash flood and debris flow thresholds. These numbers that applied to the Shoemaker burn area with precipitation frequency values from the NOAA Atlas 14 analysis shows that the debris flow triggering rainfall thresholds are generally near a 1-year recurrence frequency.

D. Design Storm Duration, (hours): High Intensity short duration rainfall from a thunderstorm

15 min	0.20 in
30 min	0.30 in
1 hr	0.50 in
3 hr	1.00 in
6 hr	1.40 in
12 hr	1.90 in

Based on the Los Angeles County Department of Public Works Crystal Lake 50-Year 24-Hour Isohyet map, the fire area may receive 13.4 inches/24 hours, once in every 50 years (2 % chance per year); 11.77 inches/24 hours or once in every 25 years (4% chance per year); and 9.57 inches/24 hours or once in every 10 years (10% chance per year).

E. Design Storm Magnitude, (inches): Refer to IV.D Table above.

F. Design Flow, (cfs per square mile): 6.33

G. Estimated Reduction in Infiltration, (percent): 65%

H. Adjusted Design Flow, (cfs per square mile): 608 cfs per square mile – from flash flood generated by high intensity rainfall from a thunderstorm.

PART V - SUMMARY OF ANALYSIS

A. Describe Critical Values/Resources and Threats (narrative):

Table 1 identifies the values at risk in the watersheds of the Shoemaker Fire. The primary threat to the values at risk is to the hikers and dispersed recreation campers adjacent to the East Fork Trail and East Fork San Gabriel River by fire-induced flash flood and debris flow down the small micro-drainage. Figure 1 – is a map that depicts the threat to the public recreating in this area below the Shoemaker Fire. Additional values at risk are associated with: 1) habitat for the T&E Santa Ana Sucker in the main stem of the East Fork of the San Gabriel River; 2) downstream Camp 19 Bridge that serves as primary access to Los Angeles County Camp 19; and 3) downstream San Gabriel River Reservoir which serves as water storage and as the municipal watersheds for the greater Los Angeles Basin. Potential fire induced runoff with the flooding and sedimentation will likely have negative effects to water quality.

Table 1: Watershed Values at Risk of the Shoemaker Fire

Watersheds	Values at Risk from Flooding and Sedimentation	Comments
East Fork San Gabriel River and East Fork Trail – immediately below the micro-drainage burned by the Shoemaker Fire.	Public hiking the popular East Fork Trail and dispersed camping adjacent to the East Fork San Gabriel River at or immediately below the confluence with the micro drainage burned by the Shoemaker Fire.	Trigger of a flash flood or debris flow is a potential threat to hikers and campers in the area.
East Fork San Gabriel River below Shoemaker Fire	Santa Ana Sucker and sensitive aquatic species habitat could be adversely affected by poor water quality and high turbidity episodes caused by fine ash and sediment delivered to the river from burned watersheds during storms.	Fire-induced debris-laden flows may adversely affect aquatic habitat. The first two years following the fire represents the highest risk.
East Fork San Gabriel River below Shoemaker Fire	Concrete bridge crossing East Fork San Gabriel River that provides primary access to LA County's Camp 19 could be further impacted with sediment entering river upstream of bridge that may restrict ingress/egress from Camp 19 and potentially cause structural damage to the bridge. The bridge was initially constructed with very little clearance over the river.	The Camp 19 Bridge is located downstream where both natural high sediment bedload and fire induced bedload sediment is aggrading in a natural depositional reach of the river. These natural and fire induced contributions could exacerbate flood conditions of the river and cause sediment aggradation of river channel and damage to bridge and possible loss of use.

Watersheds	Values at Risk from Flooding and Sedimentation	Comments
East Fork San Gabriel River below Shoemaker Fire	The downstream San Gabriel River Reservoir which serves as water storage and as a municipal watershed for the greater Los Angeles Basin. Potential fire induced runoff with the flooding and sedimentation will likely have negative effects to reservoir storage and water quality.	Fire induced sedimentation and ash laden flows have the potential to negatively affect reservoir storage and water quality for downstream municipal needs.

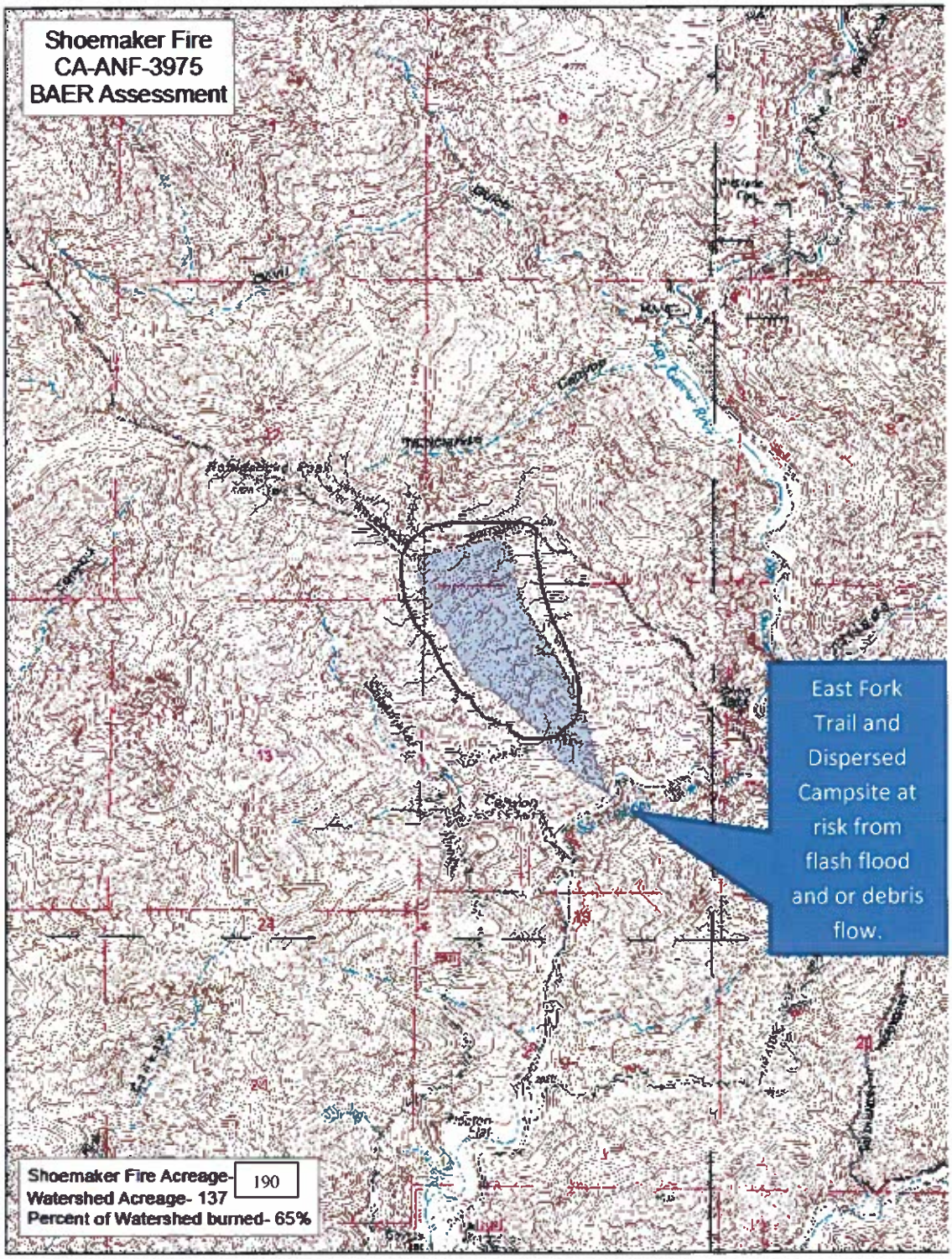

Figure 1 - Threat to Public Recreating below the Shoemaker Fire.

B. Emergency Treatment Objectives (narrative):

Due to the inherently steep topography of the Shoemaker Fire, there are no feasible emergency stablization land or channel treatments to mitigate the potential for flash floods or debris flows. There is a high probability for accelerated erosion and accelerated sedimentation to occur given a relatively frequent storm event. Should this occur there is a threat to the public recreating within the East Fork San Gabriel River either on the popular hiking trail or dispersed recreationist camping near the confluence of the micro drainage affected by the Shoemaker Fire. In the Treatment Narrative Section H that follows a description of the "Recreation Site Safety Signage" will bring notification and awareness to those individuals recreating within this area of the East Fork of the San Gabriel River thus greatly mitigating this potential threat.

In regards to the other values at risk identified above (T&E habitat for the Santa Ana Sucker, Camp 19 Bridge, San Gabriel Reservoir water storage and municipal water supply) there is no feasible treatment within the Shoemaker Fire to lessen any of the potential fire-induced effects.

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

Land NA% **Channel** NA% **Roads/Trails** NA% **Protection/Safety Signage** 80%

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land	NA	NA	NA
Channel	NA	NA	NA
Roads/Trails	NA	NA	NA
*Protection/Safety/ Signage * Due to vandalism and removal of signs, only a 80% treatment success is identified.	80%	80%	80%

E. Cost of No-Action (Including Loss): Risk of harm to public without warning

F. Cost of Selected Alternative (Including Loss):

G. Skills Represented on Burned-Area Survey Team:

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

Recreation Site Safety Signage (*English and Spanish)

General Description: This treatment will design and install burned area warning signs, and warn forest visitors recreating below the micro drainage coming from the burned area. It is consistent with the language provided in the BAER Treatments Catalog. The treatment is a component of the overall travel control devices for the burned area (USDA Forest Service-EM7100-15, 2005). The warning signs will identify the types of hazards to watch for at the recreation sites. This treatment will place hazard warning signs and information signs at 3 recreation areas including trailheads and dispersed camping areas.

Suitable Sites: This treatment is intended for use in one or more of the following locations:

1. Access routes to recreational areas.
2. East Fork Trailhead providing access into the area affected by the Shoemaker Fire.
3. Informational kiosks located near the area affected by the fire (Heaton Flats).

Design/Construction Specifications: The travel management strategy identifies the type of signing necessary. Purchase and install signs at each of the identified locations consistent with Forest Recreation Standards at these locations.

Purpose of Treatment: This treatment provides benefits as listed in the BAER Treatments Catalog. The BAER Team considered this treatment to be the minimum necessary to achieve a reduction in risk to the accumulated critical values of:
1. Travelers, and
2. Forest visitors and Forest Service employees.

Describe Treatment Effectiveness Monitoring: A Forest Service employee will inspect the signs every few weeks.

Protection/Safety Treatments:

Recreation Site Safety Signage

Item	Unit	Unit Cost	# of Units	Cost
1 GS- 9 - Recreation Specialist	Days	$280	8	$2,224
1 GS -5 - Recreation Technician	Days	$197	8	$1,576
Supplies (Signs and Posts)	Each	$200	10	$2,000
			Total Cost	**$5,800**

Land Treatments: none

Channel Treatments: none

Roads and Trail Treatments: none

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

			NFS Lands			Other Lands				All
		Unit	# of		Other	# of	Fed	# of	Non Fed	Total
Line Items	Units	Cost	Units	BAER $	$	units	$	Units	$	$
A. Land Treatments										
Noxious Weed Detection Survey	ea	0	0	$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Land Treatments				$0	$0		$0		$0	$0
B. Channel Treatments										
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
				$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
				$0	$0		$0		$0	$0
				$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										
Recreation Site Safety Signage	ea			$5,800	$0		$0		$0	$5,800
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Structures				$5,800	$0		$0		$0	$5,800
E. BAER Evaluation										
BAER Assessment	hours	15	100	$1,500			$0		$0	$1,500
Insert new items above this line!				---	$0		$0		$0	$0
Subtotal Evaluation				$1,500	$0		$0		$0	$1,500
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				$5,800	$0		**$0**		**$0**	$5,800
Previously approved				$0						**$0**
Total for this request				**$7,300**						$7,300

PART VII - APPROVALS

1. _____ 9/2/2011
For Forest Supervisor (signature) Date

2. _____ 9/17/17
Regional Forester (signature) Date