

Date of Report: Jan 09, 2001

**BURNED-AREA REPORT**  
(Reference FSH 2509.13)**PART I - TYPE OF REQUEST****A. Type of Report**

- ☒ 1. Funding request for estimated WFSU-SULT funds  
☐ 2. Accomplishment Report  
☐ 3. No Treatment Recommendation

**B. Type of Action**

- ☐ 1. Initial Request (Best estimate of funds needed to complete eligible rehabilitation measures)  
☒ 2. Interim Report  
    ☒ Updating the initial funding request based on more accurate site data or design analysis  
    THIS REQUEST IS FOR FUNDS TO MONITOR AS SHOWN IN ATTACHMENT 1.  
    ☐ Status of accomplishments to date  
☐ 3. Final Report (Following completion of work)

**PART II - BURNED-AREA DESCRIPTION****A. Fire Name:** Paradise**B. Fire Number:** CA-ANF3899**C. State:** California**D. County:** Los Angeles**E. Region:** 05**F. Forest:** Angeles**G. District:** Santa Clara - Mojave**H. Date Fire Started:** September 13, 2000**I. Date Fire Contained:** September 15, 2000**J. Suppression Cost:** \$350,000**K. Fire Suppression Damages Repaired with Suppression Funds**

1. Fireline waterbarred (miles): .25  
2. Fireline seeded (miles): 0  
3. Other (identify):

**L. Watershed Number:** 1807010208**M. Total Acres Burned:** 427

NFS Acres(346 ) Other Federal ( ) State ( ) Private ( 81 )

**N. Vegetation Types:** Mixed Chaparral - chamise, buckwheat, yerba santa, ceanothus, purple & white sage,, Calif sagebush, monkeyflower, yucca, toyon, Mexacan elderberry ,suger bush. .**O. Dominant Soils:** Osito, Trigo families on hillslopes and Vertic Xerochrpts in swales.

P. Geologic Types: Upper Miocene/Lower Pliocene nonmarine siltstones and sandstones.

Q. Miles of Stream Channels by Order: USGS marked order one drainages .5 mile .

R. Transportation System

Trails: zero miles Roads: 3.69 miles (additional .79 miles of unused road)

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

A. Burn Severity (acres): 42 (low) 343 (moderate) 42 (high)

B. Water-Repellent Soil (acres): 320

C. Soil Erosion Hazard Rating (acres):  
\_\_\_\_ (low) 64 (moderate) 263 (high)

D. Erosion Potential: 131 tons/acre

E. Sediment Potential: 25,150 cubic yds/sq mi for 12 mos. cubic yards / square mile

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

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

B. Design Chance of Success, (percent): 90

C. Equivalent Design Recurrence Interval, (years): 10

D. Design Storm Duration, (hours): 24

E. Design Storm Magnitude, (inches): 7

F. Design Flow, (cubic feet / second/ square mile): 120

G. Estimated Reduction in Infiltration, (percent): 55

H. Adjusted Design Flow, (cfs per square mile): 140

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

Describe Watershed Emergency: On September 13, 2000 the fire started next to the north bound lanes of Interstate 5 due to a truck fire. The fire burned aggressively in old chaparral the first afternoon making a run to the north. When the fire ran up to the boundaries of the 1995 Marple fire the rate of spread slowed with a decrease in intensity. Fire crews were able to use roads and hand line to contain the fire. The fire was contained on September 15, 2000. Internal burning continued through to September 19, 2000.

The Paradise Fire burned approximately 427 acres, of which 81 acres (19 %) are private and 346 acres (81 %) is on Forest Service land. The total burned area was contained within the Canton Canyon watershed. Less than 5% of the Canton Canyon watershed burned. Canton Canyon watershed is a tributary to Piru Creek which flows into Lake Piru managed by United Water Conservation District for irrigation and ground water recharge.

## Threat to Life and Property:

**Water Supply Wells:** Two water supply wells, located just off Forest on private land, provide water to the Paradise Ranch Trailer Park. These wells are new and are located at the bottom of two small burned drainages. The above ground well improvements (chlorinators, electrical system and piping) are likely to be damaged from debris flows and flood waters moving down the drainages. One well is already surrounded by debris. Presently there is a low, one foot high, deflection walls protecting each of the wells from water flows. The wells were drilled as a part of a group of wells drilled during the spring and summer of 2000 for Paradise Trailer Park.

**Interstate 5:** Four culverts carry runoff under the I-5 freeway. The culverts will be blocked with burned vegetation and debris moving down the drainages during the rainy season. Blockage of the two southeastern culverts (each 1.5 ft diameter, near call box 5-668) by burned brush would result in water and debris flowing down the shoulder and onto the freeway. Several slides are already located on the drainage bottoms and periodically move toward the freeway. Slide movement is expected to accelerate due to the loss of brush evapotranspiration and partial loss of root support. This debris will eventually reach the freeway were they may interrupt traffic.

The two northwestern culverts (3 ft and 5 ft diameter, near call box 5-672) carry water from a 106 acre watershed under a large freeway fill. The fire burned brush and a number of small riparian trees upstream of these culverts. The burned vegetation left in the drainages will plug the culverts and pond water upstream of the fill. Increased saturation of the freeway fill will very likely destabilize it. The outlet of the largest culvert on the opposite side of the fill, and away from the fire, is presently plugged with willows and debris. Any smaller material entering the culvert will be trapped at the outlet of the culvert.

**Gas Pipeline:** A large (26 in) high pressure natural gas pipeline and its associated road (1.05 mi) is located within the burned area. The underlying bedrock along the pipeline route and road is located within the area subject to sliding and slumping. The head scarps of one existing slide are located just below the pipeline. The pipeline presently bridges a slide where the ground has moved out from under the pipe. The loss of vegetation and evapotranspiration due to the fire is expected to increase the presence of water in bedrock prone to slumping and sliding. Basement material sliding out from under the pipe could result in a rupture and an interruption of service.

**Access Roads within the burned area:** Access roads within the burned area are used by a variety of forest users and permittees. The loss of water control above these roads could result in portions of the roads being washed out. Road washouts will result in increased sedimentation and loss of access.

**Unused Segment of Road:** An unused road segment approximately .79 mile long is located within the burn area. It crosses the unstable area with a high number of slides. Loss of water control above the old road will result in an increase in the volume of water, sheet, rill and gully erosion on the road and downstream of the road. Water moving down the road will come in contact with the slides crossing the road. Increased water will fall into one of the slump head scarp cracks near the road causing movement. All of the slides and slumps are in drainages that go through culverts under I-5, debris from these slides and slumps will plug these culverts. Burning of the vegetation has also made the road very visible and could attract unauthorized vehicle use.

**Shooting Area:** The fire burned to an edge of two shooting areas. One range is located at the base of a small drainage, with a drainage area of 6.1 acres. A large number of spent lead (a hazardous material) slugs and brass are located in and near the channel. A bank used as backstop for bullets are located on the north side of the drainage mouth. The mouth of the drainage and the backstop is located on the Forest Land. Loss of water control in this drainage will result in the movement of debris and lead down the drainage channel and the erosion of the backstop. The debris and lead must be prevented from spreading out on Forest Land.

A second range is located at the base of a larger adjacent drainage (111 acres, 82 of which burned). Spent lead is located in a backstop near the mouth of this drainage and in front of the backstop. Loss of water control

would result in the erosion of the backstop and the flat area in front of the backstop, resulting in a release, movement, and deposition of lead over a wider area (3 acres) on the National Forest. The debris coming from the burned drainage is not expected to contain lead slugs and bullets.

Private Road to Shooting Area and Water Wells: A road on private land which leads to the shooting range and water wells crosses three channels with burned drainages. The road crossings have ineffective culverts and are likely to wash out due to the loss of water control. This will result in the loss of access to the water wells for maintenance and operation.

#### B. Emergency Treatment Objectives:

Water Supply Wells: Protect the above ground structures of the two water supply wells from flooding and debris flows so that they may continue to supply water without interruption.

Interstate 5: Prevent the plugging of culverts due to burned vegetation, which may result in the disruption of traffic on 1-5 from debris. Reduce the potential for saturation and failure of the freeway fill due to culvert blockage

Gas pipeline: Minimize service interruptions and pipeline rupture due to sliding and slumping of the ground around the pipeline.

Access Roads within the burned area: Prevent or reduce road washouts and erosion of soil below the roads. This will result in a reduced sediment load in the downstream drainages.

Unused Road Segment: Reduce surface water velocity on the road, reducing surface and gully erosion. Where ever possible direct water away from developing slumps below the road and away from slides that cross the road.

Shooting Area: Prevent erosion of the target and backstop areas, leaving the lead in place by preventing movement of lead off or away from the target areas. Keep the uncontaminated sediments from the burned drainage separate from the contaminated soils.

Road to Shooting Area and Water Wells: Reduce damage to the road so that access to the shooting area and water wells can be maintained and closure of the road kept to a minimum.

#### C. Probability of Completing Treatment Prior to First Major Damage-Producing Storm:

Land 100 % Channel 100 % Roads 100 % Other    %

#### D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land	80%	95%	100%
Channel	80%	95%	100%
Roads	80%	95%	100%
Other			

Quick recovery is expected due to the chaparral vegetative communities burned and experience with the 1995 Marple Fire.

E. Cost of No-Action (Including Loss):\_ **\$1,777,140**

F. Cost of Selected Alternative (Including Loss):\_ **\$415,660**

G. Skills Represented on Burned-Area Survey Team:

<input checked="" type="checkbox"/> Hydrology	<input checked="" type="checkbox"/> Soils	<input type="checkbox"/> Geology	<input type="checkbox"/> Range	<input type="checkbox"/>
<input type="checkbox"/> Forestry	<input checked="" type="checkbox"/> Wildlife	<input type="checkbox"/> Fire Mgmt.	<input checked="" type="checkbox"/> Engineering (roads)	<input type="checkbox"/>
<input type="checkbox"/> Contracting	<input type="checkbox"/> Ecology	<input checked="" type="checkbox"/> Botany	<input checked="" 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: Vic Andresen

Email: [\\_vandresen@fs.fed.us](mailto:_vandresen@fs.fed.us)

Phone: (626) 574-5268

FAX: (626) 574-5233

#### 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

Channel Treatments:

Water supply wells: Sandbag diversion structures 5 foot high upstream of the two wells located in the drainage channels. The structures will protect the above ground well equipment. The sediment around one of the wells is recommended to be removed to increase channel capacity as a means to help protect one of the wells. The wells are on private land and the Natural Resource Conservation Service (NRCS) has been informed of the problem.

**Interim Oct 19. The NRCS has informed us that they are providing technical assistance to the private landowners.**

Interstate 5: Channel clearing of burned brush and trees 50 feet upstream from these culverts will prevent culvert plugging with debris. Channel clearing can be performed by hand crews. This treatment should prevent culvert blockage from early winter storms. The large volumes of naturally occurring slide material already in the channels will arrive later in the season when it becomes saturated. No effective option was found to stabilize the slide material presently in the channels. Caltrans has been made aware of the problem and it is recommended that they prepare a plan for the slide material.

**Interim Oct 19. The above channel clearing treatment (50 feet above the smaller culverts) is totally within Caltrans right-of-way and Caltrans responsibility. They will be informed of the need for channel clearing above these culverts to prevent culvert blockage**

To prevent blockage of the two northwesterly culverts, channel clearing for 100 feet should occur upstream from the culverts removing burned brush and small trees. This should prevent water ponding and possible saturation of the freeway fill.

**Interim Oct.19. The freeway right-of-way is determined by the toe of the fill plus 10 feet. Treatment will be performed by hand crews upstream for 100 feet from the edge of the right-of-way.**

The outlet of the large culvert at the base of the large fill is nearly plugged with willows and debris and needs to be cleaned out by Caltrans since it is within their right of way and on the opposite side of the fill from the fire. The Caltrans maintenance Supervisor has been informed of the plugged outlet on their right of way.

Shooting Area: At the mouth of the small drainage two small catchments will be built using sandbags. These catchments will capture most of the lead along with some of the debris coming out of the drainage. The lead and debris will settle out in front of the backstop area leaving the lead on an area already contaminated with this material.

On the second shooting range, sandbags will direct the flow around the backstop. The debris coming from the drainage next to the range is expected to be uncontaminated. Sandbags will be used to raise the height of the adjoining channel banks so that water and debris will not mix with contaminated soils in front of backstop.

**Interim Oct 19. A Forest surveyor has determined the treatments are on Forest Service land. Shooting on the above ranges has occurred since the 1930's. This has left significant volume of lead on Forest.**

#### Roads and Trail Treatments:

Unused Road Segment: Waterbars will be installed on this road using hand crew(s) as a BAER treatment to divert water away from the two slides that presently cross the road. The hand crews can do the work without knocking over the burnt standing brush left after the fire. The burnt standing brush would also discourage unauthorized vehicle use. A large earthen berm will be installed to help keep unauthorized traffic off the abandoned road at the one location where access is possible from an open maintained road.

Access Roads within the burned area: Rolling dips will be installed at road drainage crossings along with installation of water bars. The steeper portion of the road will be closed to traffic during the winter, waterbars will be installed to slow water velocity and break up the flow.

Private Road to Shooting Area and Water Wells: A suggested treatment would be the removal of the three ineffective culverts at the road/channel crossings and replace the culverts with a rocked low water crossings. This road is on private land and NRCS is aware of the situation.

**Interim Oct 19. The NRCS has informed the Forest that they are providing technical assistance to the private landowners.**

Structures: None

#### Other:

Gas pipeline: Southern California Gas Company has been notified of the potential problems with the exposed unstable geology and soils in the burn area. No effective short-term treatment appears to be feasible to prevent the land sliding and slumping. Extra pipeline patrols are recommended for this winter along the section of pipeline within the burned area.

**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.)

Monitoring Narrative see Attachment 1.

## **Part VI – Emergency Rehabilitation Treatments and Source of Funds by Land Ownership**

[illegible]

## PART VII - APPROVALS

1. /S/ Jody Cook \_\_\_\_\_ 1/26/2001\_  
Forest Supervisor (signature) Date
2. /s/ Gilbert Espinosa (for) \_\_\_\_\_ 1/31/2001\_  
Regional Forester (signature) Date



## **Attachment 1**

### **BAER Implementation and Effectiveness Monitoring Plan for the Paradise Fire:**

This monitoring plan is specifically designed to answer two questions:

1. Were the original treatments implemented correctly?
2. Did the treatments provide the needed protection through the winter rainy season?

The four treatments recommended (10/00) using WFSU-SULT funds are:

1. Channel Clearing. Channel clearing of burned brush and trees upstream of the I-5 freeway right-of-way to prevent blockage of a large freeway culvert.
2. Shooting Area Treatments. Two shooting ranges on the Forest required treatments to prevent the spread of lead: a. The pistol range treatment will capture contaminated debris in two small sandbag basins. The high-density lead particles are expected to settle out in the catchments even if the catchments become filled with sediments. b. The rifle range treatment, sandbag barriers will protect the backstop contaminated with lead from uncontrolled water flow out of a burned drainage.
3. Unused Road Segment. Waterbar treatment to an unused road will drain the water off the road and reduce the volume of water coming in contact with slides that cross the road.
4. Access Road in Burned Area. A steep portion of an access road within the burned area is to be closed to traffic during the winter. New waterbars and larger rolling dips are needed at road drainage crossings to control the expected increase in water flow.

Implementation and effectiveness monitoring:

1. Channel clearing. Implementation monitoring will consist of a site visit to check for the removal of burned brush and small trees in fall or winter. At least one photo point will be established. Effectiveness monitoring will consist of a return visit in late spring of 2001 to see if the culvert is clear of debris. One or more photos will be taken in late spring.
2. Shooting Area Treatments. a. Pistol range implementation monitoring will consist of site visit to check for the construction of the two catchments basins at the mouth of the small drainage. One or more photo points to be established showing the basins. Effectiveness monitoring will consist of a return visit in late Spring 2001 to make a visual inspection for lead bullets or bullet fragments in the fresh sediments captured by the basins. One or more photos will be taken of the basins in late spring showing the effectiveness of sediment capture. b. Rifle range implementation monitoring will check for the construction of the sandbag barriers needed to divert water around the backstop. Two or more photos will be required to show sandbag barriers. Effectiveness monitoring will consist of returning in late spring to check on the integrity of the sandbag barriers and check that flows are diverted around the backstop. Two or more photos will be required.
3. Unused Road Segment. Implementation monitoring will consist of walking the unused road checking for and counting the waterbars installed. Special note will be taken of the waterbars above the slides. Determine the length of the road segment that has been diverted away from the slide. Note if any small drainages that have been diverted away from the slides by the construction of the waterbars and estimate the size of these small drainages. Effectiveness monitoring will consist of a return visit in late spring to count the waterbars that remained effective through the winter and look for vehicle tracks to verify that the closure was effective.
4. Access Road in Burned Area. Implementation monitoring will consist of verifying the closure of the steep road segment with a photo. The enlarged rolling dips will be verified and at least one photo point of a rolling dip will be established. Effectiveness monitoring will consist of returning to the photo point for the rolling dip in late spring to make sure it successfully controlled the increased water flows. Effectiveness monitoring will consist of returning to the photo point for the rolling dip in late spring to make sure it successfully controlled the increased water flows.

### Implementation and Effectiveness Monitoring Costs

Treatment	Implementation Monitoring Costs	Effectiveness Monitoring Costs	Total Costs
Channel Clearing			
GS-11 @ 281/day	.5day x 281= 141	.5day x 281 = 141	282.00
Shooting Area			
GS-11 @ 281/day	.5day x 281 = 141.00	.5day x 281= 141.00	282.00
Unused Road Segment			
GS-11 @ 281/day	1.0day x 281 = 281.00	.5day x 281.00 = 141.00	422.00
Access Road			
GS-11 @ 281/day	1.0day x 281 =281.00	.5day x 281 = 141.00	422.00
Final Report			
GS-12 @ 300/day		3 days = 900	900.00
Mileage & Supplies			500.00
Total			2,808.00