DOCUMENT HEADER

Document name: Cleveland El Monte Final Document type: WRD

Drawer: rehab Folder: 96 report finals
Received from: STAFF,FS

Last modified on Feb 21,97 8:16 AM by R.GRIFFITH

Author: Jim O'Hare Typist: Sandy Lew

Filed on: Feb 24,97 7:36 AM Message attached

Subject: El Monte Rehab

Summary:

Comments:

photo-monitoring done (poster) - cleveland
point
of lake shore taken
oct 95, oct 96

rainfall
96 11 inches
as compared
to 25" ave

$10,000 Geological Report
potential landslides & boulder fall
to lake shore

poster -
seed bank assessment - cleveland

To r.griffith:r05a CC t.white

From: STAFF,FS
Postmark: Feb 21,97 8:19 AM
Status: Certified Previously read Urgent
Subject: Final BEAR Report- El Monte, Cleveland NF

Comments:

Tom, next time please go thru Janet to get approvals before sending to me. Thanks

USDA-FOREST SERVICE Date of Report: 02-18-97

BURNED-AREA REPORT
(Reference FSH 2509.13, Report FS-2500-8)

PART I - TYPE OF REQUEST

A. Type of Report

[ ] 1. Funding request for estimated EFFS-FW22 funds
[X] 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 and design analysis
[ ] Status of accomplishments to-date

[X] 3. Final report - following completion of work

PART II - BURNED-AREA DESCRIPTION

A. Fire Name: **El Monte** B. Fire Number: **CNF1384**

C. State: **CA** D. County: **San Diego**
E. Region: **05** F. Forest: **Cleveland**
G. District: **Palomar & Descanso**

H. Date Fire Started: **08/27/95** I. Date Fire Controlled: **09/05/95**
J. Suppression Cost: **$ 4,250,000**

K. Fire Suppression Damages Repaired with EFFS-PF12 Funds:
1. Fireline waterbarred (miles) **6.1 (dozer) & 10.8 (Handline)**
2. Fireline seeded (miles) **0**
3. Other (identify) **approx. 15 acres of secondary line & safety zones. Back blade dozer lines, pull berms, spread cut piles, repair drainage systems, recontour roadbeds as needed.**

L. Watershed Number: **18070304**

M. NFS Acres Burned: **2299** Total Acres Burned: **8100**
Ownership type:
(**1395**)County-City ( )BLM (**791**)PVT (**3615**)BIA

N. Vegetation Types: **Southern Mixed Chaparral, Coastal Sage Scrub, Chamise Chaparral, Coast live Oak Woodland**
O. Dominant Soils: **Cieneba-Fallbrook rocky sandy loam, slope 30-65%, eroded.**
P. Geologic Types: **granodiorite/granite**

Q. Miles of Stream Channels by Order or Class:
Order1 **17.4 miles** Order2 **2.3 miles** Order3 **1.3 miles**

R. Transportation System:
Trails: 0 (miles) Roads: 20 (miles)

PART III - WATERSHED CONDITION

A. Fire Intensity (Acres): 5220 (low) 1920 (moderate) 960 (high)

B. Water Repellant Soil (Acres): 1920

C. Soil Erosion Hazard Rating (Acres):
150 (low) 660 (moderate) 7290 (high)

D. Erosion Potential: 179 tons/acre
E. Sediment Potential: 85,760 cu. yds/sq.

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period: 2 years.
B. Design Chance of Success: 90 percent.
C. Equivalent Design Recurrence Interval: 25 years.
D. Design Storm Duration: 6 hours.
E. Design Storm Magnitude: 0.6 inches.
F. Design Flow: 100 cfsm.
G. Estimated Reduction in Infiltration: 35 percent.
H. Adjusted Design Flow: 130 cfsm.

PART V - SUMMARY OF ANALYSIS

A. Describe Emergency:
The fire burned 8,100 acres of the San Diego River Watershed. The majority of the watershed adjacent to El Capitan Reservoir was burned in the fire. The area is steep with erosive soils with large boulders and many landslides.

A thunderstorm on 9/2/95 following the fire produced 1/2 inch of rain which resulted in mud flows. Some mud flows reached the reservoir 45 minutes after the rain had stopped. This means that people using the shoreline could be threatened as much as 45 minutes after a thunderstorm. The shoreline should be posted to warn users of the hazard. The shoreline of El Capitan Reservoir is under the jurisdiction of the City of San Diego.*

Many landslides occur within the burn area with a capability of producing 5 cubic yards to 200 cubic yards of debris. These landslides existed before the fire.

Recreationists using El Capitan Reservoir may be endanger near debris flow, mud flow, and landslide areas following moderate to heavy rainfall events. Once wetted landslides may be a threat at any time. The removal of vegetation has taken away the natural water pump which helped to keep the landslides from moving before the fire. More information will be available once the landslides have been mapped, hazard areas identified, and any appropriate mitigation suggested. Also refer to the Soil's Report for more discussion of the mud flow and landslide issues.

It is expected that on the average the top inch or two of surface soil material may erode from the burn area, the majority of which will reach the reservoir as sediment. Delivery coefficient is estimated to be 75 percent. The erosion hazard is high to very high over 90 percent of the burn area. About 5,700 acres of the burn area drains into the reservoir. Numerous landslides will add to the sediment and debris reaching the reservoir. Water quality in the reservoir will be impacted by nutrient loading (ash and organic debris) and sedimentation. Up to 478.5 acre feet of storage may be lost.

Rockfall will occur off steep facing bluffs, which will endanger people recreating or working near bluffs. Residences on the San Diego River within the fire area are probably not in danger as boulders and rock will need to move across the river channel and onto an alluvial fan. There is an outside possibility of boulders and rock damaging residences. Further assessment of this hazard by the responsible agencies may be needed.*

These are natural processes accelerated by the fire. No treatment will effectively slow or stop these natural processes. The team proposes that landslide hazards be identified and mapped to track landslide movement, assist in providing public safety, and determine their impact on El Capitan Reservoir.

The opening of the roads for suppression and the loss of natural vegetation barriers open the area to illegal off highway vehicle use. Additional erosion and sedimentation may occur in localized areas of concentrated use.

There is the possibility that debris dams may develop in the San Diego River below the dam on El Capitan Reservoir. Over grown vegetation at the base of the dam and on portions of the river downstream of the dam needs to be removed. High flows may occur from the spilling of the dam and runoff from the southwest corner of the burn area, which drains into the San Diego River below the reservoir endangering 3 to 6 residences. A portion of the channel clearing will need to be done on National Forest and City of San Diego lands at the base of the dam and approximately 1.0 mile of the San Diego River. In addition a log boom is recommended to be installed on the reservoir to prevent woody debris from moving down stream.

INTERIM - 10-17-95

The landslide assessment revealed that hazards to human life exist along the shoreline of El Capitan Reservoir. On the west side of the reservoir there is 2.5 miles of shoreline mapped as high potential for debris flow and rockfall. On the east side of the reservoir there is approximately 3 miles of shoreline with a moderate potential for debris flow and rockfall.

The area on National Forest near El Cajon Mountain and El Capitan is popular for day use and hiking. This area also high potential for debris flow and rockfall and is a hazard to human life.

Forest Road 13S10 has a high erosion potential which will be accelerated by the burn. Portions of the road are susceptible to debris flows and rockfall. Damage to Forest Road 14S10 is suppression damage and will be rehabilitated using suppression funds.

The spillway to the dam for El Capitan Reservoir may be damage by rockfall and additional debris is expected to occupy a portion of the spillway, which could interfere with flow.

The beehives between the dam and switchbacks of Road 13S10 may be damaged by rockfall.

B. Emergency Treatment Objectives:

1. Notify public of rockfall, mudflow, debris flow, landslide hazards.*

2. Control off road vehicle use until natural vegetation barriers have been re-established.

3. Correct suppression damage. Allow the watershed to recover naturally.

4. Protect downstream life and property.

5. Protect Forest road investments and mitigate impact of accelerated erosion from roads on water quality.

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

Land _____ % Channel **95*** % Roads **100*** % Other _____ %

D. Probability of Treatment Success

	<----Years after treatment-----> 1	3	5	
Land				
Channel	90	95	95*	
Roads	95	95	95*	
Other				Signing

E. Cost of No-Action (Including Loss): **$ 17,417,625**

F. Cost of Selected Alternative (Including Loss): **$ 16,010,165***

G. Skills Represented on Burned-Area Survey Team:

[X] Hydrology	[X] Soils	[X] Geology	[X] Range
[ ] Timber	[X] Wildlife	[ ] Fire Mgmt.	[ ] Engineering
[ ] Contracting	[X] Ecology	[ ] Research	[X] Archaeology
[ ] _____	[X] Botany____	[X] Road Eng._	[ ] _____

Team Leader: **Jim O'Hare**
Phone: **(909)736-1811** DG Address: **R05f02A**

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.

The BAER team recommends signing of hazard areas for public safety around El Capitan Reservoir and mapping of landslides within the Reservoir and recreation area. Landslide mapping is scheduled for early October 1995. Aerial photography is required to map landslides and identify hazard areas.

Although the fire will accelerate natural erosion processes, no reasonable treatment will effectively mitigate the impacts of erosion and sedimentation on El Capitan Reservoir. El Capitan Reservoir will effectively serve as a sediment and debris trap protecting downstream values below the dam. The land ajacent to the reservoir is steep eroded country with numerous landslides; it is naturally very unstable. The very unstable condition of the land existed prior to the fire.

The fire burned at a low to moderate intensity over 90 percent of the burn area. Hydrologic recovery is expected within 2 years.

The BAER team recommends that vegetation be removed at the base of the at El Capitan Reservoir and on sections of the San Diego River downstream of the reservoir. The City of San Diego would be the lead agency, USDA Natural Resource Conservation Service and California Department of Forestry and Fire Protection Cooperating agencies, and USDA Forest Service would serve as liaison. The project would be accomplished under Section 403 authority.* The USDA Forest Service would be the lead agency for work to be done on National Forest lands.

Suppression rehabilitation efforts will continue outside the BAER process. Needs will be identified and described in a separate report.

INTERIM - 10-17-95

Additional treatments recommended by the BAER team and Landslide Mapping Team are as follows.

Keep fisherpersons off the shoreline and 100 feet away from shore of El Capitan Reservoir where high and moderate potential for debris flows and rockfall exist. This can be done by closing the Reservoir to the public or posting warning signs and added patrolling to keep people out of hazardous areas during the period when most precipitation occurs, normally November 15 through February. If the late winter and spring are unusally wet, the closure or added patrolling may need to be through April.

Discourage public use of the popular day use and hiking area near El Cajon Mountain and El Capitan. It is proposed that this be done by extensive signing.

The area is too open and easy to access for barriers such as a temporary fence to be affective, and maintenance would be constant and costly. Also added Forest Service presence during this period will help inform the public and keep them away from hazardous areas.

Forest Service Road 13S10 will need rolling dips and out sloping to protect existing drainage. Additional drainage (rolling dips and out sloping) are required in places. Cross drains with energy disipators on their outlet are needed on an abandoned section of road exposed by the fire, which now will accelerate erosion on 13S10.

The BEAR team recommends that the spillway for the dam at El Capitan Reservoir be evaluated by the City of San Diego for its capacity to handle existing and predicted added debris from the debris basin up slope of the spillway. The team also recommends that the City monitor the spillway for damage from large boulders landing on the spillway from rockfall or debris flow activity following precipitation events this coming precipitation season.

The beehives located between 13S10 and the dam may be damaged by rockfall. It recommended the hives be moved to a safer location for this coming precipitation season.

Final Report 02/18/97

All of the above projects were completed. The burn is recovering well.

PART VI - EMERGENCY REHABILITATION TREATMENTS AND SOURCE OF FUNDS BY LAND OWNERSHI

NOTE: Emergency rehabilitation is work done promptly following a wildfire and not to solve watershed problems that existed prior to the wildfire.

			NFS Lands			Other Lands			A
Line Items	Units	Unit Cost $	Number of Units	EFFS-FW22 $	Other $ ident.	Number of Units	Fed $ BIA ident.	Non-Fed $ Pvt/LG# ident.	To
A. LAND TREATMENTS									
B. CHANNEL TREATMENTS									
Channel Clearing	Miles	$16M	.75	$16,437		.25		$ 6,000	$22
LOG BOOM	Struc	$ 5M				1		$ 0	$
C. ROADS AND TRAILS									
Hazard Signng				$ 1,000				$ 3,000	$ 4
Drainage & Out Slope	Miles	6M	1.5	$ 9,000					$ 9
Patrol				$ 1,500				$ 8,000	$ 9
D. STRUCTURES									
E. BAER EVALUATION/ ADMINISTRATIVE SUPPORT									
Salary survey team			8,100	$15,000			$ 2,000	$ 1,000	$18
Air photo flight				$ 2,200					$ 2
Landslide mapping			4,600	$ 8,500					$ 8
F. TOTALS				$53,637			$ 2,000	$18,000	$73

* BAER Team recommendations - requires apporval of responsible agencies.
\# LG - Local Government.

PART VII - APPROVALS

1. /s/ Anne S. Fege — 2/21/97
   Forest Supervisor (Signature) — Date

2. /s/ _____ _____
   Regional Forester (Signature) — Date