

UNITED STATES
DEPARTMENT OF
AGRICULTURE

FOREST
SERVICE

RO

REPLY TO: 2520/6520

DATE: September 9, 1994

SUBJECT: Authorization for Expending Burned-Area Emergency Rehabilitation
Funds (EFFS-FW22) - Highway 41 Fire

TO: Forest Supervisor, Los Padres National Forest

Attached is the approved Burned-Area Emergency Rehabilitation Report for the Highway 41 fire. You are authorized to expend up to \$499,110 of EFFS-FW22 funds for the emergency rehabilitation treatments indicated in Part VI of the enclosed FS-2500-8 report.

The difference between what was approved vs what you requested is due to the unit costs for seeding. Your request was to seed 8,749 acres at \$70 per acre, totalling \$612,430. Approved unit costs were reduced to \$40 per acre for a total of \$349,960. This reduction was based on the \$36 per acre final unit cost incurred on the Marre fire on your forest last year. Your report states the proposed seeding mix will be the same as used on the Marre fire. In addition the Highway 41 fire acreage to be seeded is nearly 1,000 acres larger than the Marre fire, therefore unit costs should be similar.

/s/G. Lynn Sprague

G. LYNN SPRAGUE
Regional Forester

Enclosure

cc: Z.MORALES, PB
R.Godden:R05H
WSA:W01A
S.Miles:R05F14A
C.Madden:R05F16D52A

United States
Department of
Agriculture

Forest
Service

Los Padres
National
Forest

6144 Calle Real
Goleta, CA 93117
805-683-6711
TDD: 805-967-4487

Reply to: 2520

Date: August 26, 1994

Subject: Highway 41 Fire

To: Regional Forester

The initial Burned Area Report (Form FS 2500-8) for the Highway 41 Fire is attached. The initial report serves as the Forest request for \$761,580.00 to implement emergency rehabilitation treatments.

/s/ D.W. Dahl
DAVID W. DAHL
Forest Supervisor

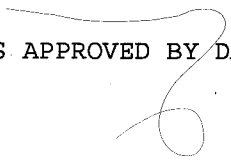
CC: Santa Lucia DR

HIGHWAY 41 FIRE
BURNED AREA REPORT NARRATIVE
(2500-8)

AUGUST 25, 1994

BY CAROLYN MADDEN, BURNED AREA EMERGENCY REHABILITATION TEAM LEADER

TREATMENTS APPROVED BY DAVID DAHL, FOREST SUPERVISOR



I. INTRODUCTION

A. Description of the Incident

On Sunday August 14, 1994 at approximately 3:45 pm an incendiary device was thrown out on Highway 41 in San Luis Obispo County. The device landed in a brushy area and the spark grew in size over the next four days until it had burned 48,531 acres, 37 homes, 50 other buildings, 51 cattle, 48 motor vehicles, nine boats, 14 trailers and seven tacters. At times the fire moved at approximately 7000 acres per hour, but fortunately no lives were lost.

The fire burned 16,341 acres of National Forest, 1,220 acres of state land, 335 acres of BLM lands, and 30,394 acres on private. Several small communities were hit especially hard and these include residences in the Tassajara Canyon, and 531 acres within the city limits of Atascadero.

B. Description of the Watershed

The fire burned portions of 20 watersheds:

Watershed	TOTAL ACRES	BURNED ACRES	% BURNED
TORO	9643	1262	13%
MORRO	10828	6478	6%
LITTLE MORO	4277	665	15%
SAN BERNARDO	5424	3920	72%
SAN LUISITO	5400	2166	40%
PENNINGTON	1922	775	40%
DAIRY	1804	627	35%
CHORRO	2300	36	99%

MAIN CHORRO (INCLUDES ALL WATERSHEDS FROM SAN BERNARDO TO CHORRO)

NOTE: NONE OF MAIN CHORRO BURNED BUT CUMULATIVE IMPACTS ARE OF MAJOR CONCERN.

STENNER	3757	1443	38%
BRIZZIOLARI	1786	424	24%
SAN LUIS OBISPO	7426	3272	44%
UNNAMED	1762	418	24%
TROUT	6106	3362	55%
MILLERS FLAT	3455	1450	42%
SANTA MARGARITA	6369	5000	79%
TASSAJARA	2888	2888	100%
ATASCADERO	9445	7979	84%
PALOMA	3565	2415	68%
UPPER SANTA MARGARITA	1540	1540	100%

Within these watersheds there was a mosaic of burn intensity, but a pattern established itself where higher intensity burns and hydrophobic soils were often found at the upper reaches of the watersheds. Some watersheds like

Tassajara burned completely, and this is also the same area where numerous residences were destroyed by the fire.

The geology of the burned area includes shale, sandstone, landslide alluvium, and the Franciscan Melange. Many of these areas are inherently instable, and the team worked hard to evaluate the effect of the fire on these already unstable slopes. Climate in the fire area is comprised of dry summers and wet winters, but with the influence of the coastal fog on the western portion of the burn.

The burn area is also of major importance to downstream wetlands, especially Morro Bay. This area has been under study for several years, and over 7 million dollars has already been spent on improvements and studies of the area. Restoration efforts for Morro Bay focus on efforts to reduce sediment delivery to the area.

Additionally, Steelhead Trout spawn in Morro and Toro Creeks and there is some use of the Chorro drainage as well. Sensitive plant species are found throughout the area and occupy unique sites on many of the serpentine soils. The Sargent Cypress Botanical area is within the burn, and portions of the grove survived the fire. The watersheds within the fire perimeter also have provided habitat for Red Legged Frogs and Western Pond Turtles.

II. ASSESSMENT OF THE ON-THE-GROUND CONDITIONS

Assessment of the entire burned area was made following the procedures outlined in FSH 2509.13 and FSM 2523.02. The purpose of such a post fire assessment is to determine if an emergency to life, property, site productivity and loss of control of water and deterioration of water quality has been caused by the wildfire.

A. Initial Reconnaissance

Initial reconnaissance was made by Santa Lucia Ranger District personnel who were pulled into the fire to address suppression rehabilitation efforts as the fire burned. As a result of their exposure to the fire they worked with the California Department of Forestry Liaison on the Fire, Ben Parker in developing a team to formally evaluate the effect of the fire on the watershed. The burned area rehabilitation team consisted of the following members:

Title	Person
Team Leader	Carolyn Madden USFS, Stanislaus NF
Team Leader	Ben Parker, CDF, San Luis Obispo
Soil Scientist	Barry Cohn, Los Padres, USFS
Soil Scientist	John Munn, Sacramento, CDF
Soil Scientist	Margie Lindquist, SCS- Paso Robles
Soil Scientist	Carlos Lopez, BLM, Bakersfield
Wildlife	Jim Lidberg, Dept. of Fish and Game
Wildlife	Marty Berbach, California Dept Fish and Game
Wildlife	Kevin Cooper, Los Padres
Geology	Mike Manson, Calif. Dept of Mines and Geology
Geology	John Duffy, CAL TRANS, San Luis Obispo
Geology	Julia Grim, SCS, Sacramento

Fisheries	Karen Worcester, Regional Water Quality Control Board, Morro Bay
Fisheries	Sara Chubb, Los Padres N.F.
Hydrology	Bob Blecker, Los Padres N.F.
Hydrology	Scott Robbins, SCS, Morro Bay
Hydrology	Edward Schmidt, SCS, Sacramento
Hydrology	Pete Cafferata, CDF, Sacramento
Engineering	Greg Napper, Stanislaus N.F.
Engineering	Chuck Sheen, Los Padres
Recreation	Bob Stone, Los Padres
Archeology	Jim Lopez, Los Padres
Engineering	Doug Toews, SCS EWP Coordinator
Range	Gary Montgomery, Los Padres
Support	Cobie Cavanaugh, Los Padres
Forest Service Liason	Melody Fountain, Los Padres
Plant Ecologist	Deborah Hillyard, Fish and Game, Monterey
Engineer	Greg Norris, SCS, Paso Robles

The diverse team was able to work together and build on local resource knowledge in order to quickly and efficiently assess the situation. Additionally, all agencies agreed from the start that the team would assess all lands regardless of jurisdiction and develop a coordinated plan for rehabilitation of the watershed as deemed necessary by the findings of the team.

B. Findings From the On-The-Ground Survey

Results of the teams findings include the following:

1. Loss of soil and site productivity;

It was determined, by measuring ground cover density, soil hydrophobicity, and burn intensity, that erosion rates over the entire 45,831 acres averaged a soil loss of 8.2 tons per acres. Approximately 20,500 acres burned under a high intensity, on steep slopes with a high erosion hazard rating prior to the fire. In coordination with the plant ecologist and a representative of the California Native Plant Society, the team looked hard to evaluate what natural revegetation would occur and where was it most likely to resprout. Seed banks within the soil were felt to be high in many areas and the team worked to exclude these areas from any specific treatment and allow for natural recovery.

2. Threat to life and property:

Due to the size of the fire, the team worked to identify red flag watersheds where conditions indicated that there was a threat to life and property. The findings indicated the highest risks exist within the Tassajara watershed which is a steep, geological unstable area, with only one access into the canyon. Flood potential is high given that the entire watershed burned under a high intensity. Bridges were burned and the transportation system needs to be repaired prior to seasonal rains. Other areas of concern were Upper Santa Margarita, Santa Margarita, Morro, and Atascadero watersheds. The team felt that if these watersheds were not treated individually then the off-site downstream effects would be catastrophic. The team evaluated the towns of

Atascadero, and Santa Margarita and established that many homes were in jeopardy in terms of flooding and Soil Conservation Service developed figures to provide protection for these areas.

Forest Service roads and property, especially the Cerro Alto Campground facility were evaluated to determine if closures would be required in the case of flooding. Preventative strategies were developed to reduce the potential of flooding by removing culverts, reshaping roads to prevent accelerated erosion caused by concentrated flows, and flood patrols were considered.

Key transportation routes for the public were reviewed as well and coordination with Cal Trans on Highway 41 and 101 was conducted. Cal Trans has already started to patrol these roads to remove debris and rocks which are coming down the slopes.

The team felt that the Southern Pacific railroad lines through the San Luis Obispo watershed needed to be reviewed by SP to evaluate there drainage structures and to maintain patrols in the event of debris torrents from the steeper slopes.

Overall the team felt that the highest risk to life and property was found on the East side of the burn where homes, residences, and towns were often right in the middle of the burn. Fliers and informational packets were disseminated to inform interested residents about potential hazards after the fire.

3.) Loss of water control and deterioration of water quality;

Evaluation of the watersheds indicated that water quality and water control would be a problem throughout the burned area. Site specific concerns were focused on Tassajara, Atascadero, Upper Santa Margarita, Santa Margarita and Morro watersheds. Cumulative impacts on downstream water quality was seen as a major threat to the Morro Bay area as a result of sediment being carried into Main Chorro from the five watersheds within the burn on the western slope which drain into Chorro.

Based on the above findings the team felt confident in determining that an emergency does exist as a result of the Highway 41 fire.

III. MITIGATION OF THE EMERGENCY

To the extent possible the following treatments have been proposed to mitigate the loss of soil, loss of control of water, and reduce the potential threat to life and property.

A. Proposed treatments to Mitigate the Emergency

1. Grass Seeding:

Purpose - to minimize soil loss to maintain site productivity and to reduce expected increase in peak streamflow.

Treatment - Seed site specific areas within the Tassajara, Atascadero, Upper Santa Margarita, Santa Margarita, Morro, San Bernardo, and San Luisito watersheds. Seed application will be to augment natural recovery

and is at 6 pounds per acre. Anticipated acreage is approximately 7000 acres for private lands and 8749 acres on Forest Service lands. Team members felt that we needed to develop as a group treatments we felt comfortable in prescribing regardless of jurisdiction. Costs are projected at \$70.00 per acre based on the seed mix and need to seed with a helicopter.

2. Channel Clearing:

Purpose - to minimize the risk of floatable debris becoming mobilized and blocking culverts and creating stream channel diversions which could put both life and property at risk. Site specific channels would be cleared to remove this kind of debris out of the flood channel. Considerations for adverse impacts to wildlife and fisheries would be included and during the lay out representatives from wildlife would be involved.

Areas of concern are Tassajara, Atascadero, Santa Margarita, and San Luisito. Only 2 miles of channel clearing would be performed on Forest Service lands with the remaining 29.5 being done on private lands.

3. Sediment Basins:

Purpose - to trap sediment before it creates flooding and property damage to both residences and to aquatic and wetland communities. These projects are being further developed by the Soil Conservation Service. The need for this kind of project is partially due to the geology of the area and the inherent instability. Input from team members indicate that much material will move in the form of debris torrents and there are few opportunities to trap sediment.

4. Straw Mulching:

Purpose - to minimize soil loss and to maintain site productivity.

Treatment - Mulch approximately 70 acres off of Forest Service roads within the burn just below the road to protect the soil resource.

5. Public Notification and ALERT

Purpose - to minimize the risk of loss of life by educating and alerting residents when storm events may create debris and mud flows. This project will be implemented in coordination with the county and CDF to both install ALERT sensors and to maintain open communications with the public as the rainy season approaches.

Treatment - Install ALERT sensor system at sites on National Forest that can be used to predict storm events that may produce debris and mudflows.

6. Road Treatments

Purpose - to minimize soil loss and reduce accelerated erosion while maintaining Forest Service investment in the transportation system.

Treatments - Remove culverts in sensitive areas where they are currently undersized to handle the anticipated flows. Reshape and outslope roads to avoid concentrated flows on already unstable soils within the burn. Place rolling dips to anticipate and build in for flooding on roads. Conduct flood patrol with equipment to clean out culverts and to remove floatable debris which could block culverts. Reconstruction of retaining wall that supports a road that was burned during the fire and is currently inadequate in its ability to support the road load on a heavily used road.

IV. CONCLUSIONS

The Highway 41 fire burned 48,531 acres of land within four days. The effect of the fire on not only the watershed but the homeowners and residence of the community will be felt for many years.

The treatments proposed for emergency rehabilitation of the Highway 41 fire have been designed by a coordinated group of agency experts to try and reduce the adverse impacts of the fire. The findings of the group indicate that a large component of the burned area should recover well without any treatment. It is also recognized that some areas within the burn will be difficult and even impossible to mitigate, and in these areas it is important to inform and pre warn residents of the potential threats. This process of education and informing the public has already started. There are, however, several key areas where the team felt that treatments could be effective and would help to reduce the anticipated erosion and increased peakflows by 10 to 50 percent. The team worked hard to determine which treatments would be responsive to the watershed emergency created by the fire, while taking into consideration the communities concerns for their environment. Based on the combination of these factors we provide the attached request for emergency funding.

USDA-FOREST SERVICE

Date of Report: 08-25-94

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 EFFF-FW22 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 and design analysis
 ☐ Status of accomplishments to-date

☐ 3. Final report - following completion of work

PART II - BURNED-AREA DESCRIPTION

- A. Fire Name: HIGHWAY 41 FIRE B. Fire Number: CA-SLU-002719
C. State: CALIFORNIA D. County: SAN LUIS OBISPO
E. Region: 05 F. Forest: LOS PADRES
G. District: SANTA LUCIA
H. Date Fire Started: 08-14-94 I. Date Fire Controlled: 08-20-94
J. Suppression Cost: \$ 6,000,000.00
K. Fire Suppression Damages Repaired with EFFF-PF12 Funds:
 1. Fireline waterbarred (miles) 70
 2. Fireline seeded (miles) 0 AT THIS TIME
 3. Other (identify) _____
L. Watershed Number: 1806000505 (SALINAS RIVER), 1806000601 OCEAN FRONT,
1806000602 (PACIFIC OCEAN TRIBUTARIES)
M. NFS Acres Burned: 16,341 Total Acres Burned: 48,531
Ownership type:
(1220) State (335) BLM (30,394) PVT () _____
N. Vegetation Types: GRASSLANDS, COASTAL SAGE SCRUB, CHAPARRAL, SARGEANT
CYPRESS, BLUE OAK, COAST LIVE OAK, RIPARIAN WOODLANDS
O. Dominant Soils: CUESTA, LODO, MILLSHOLM, LOS OSOS, LOPEZ, DIABLO,
MILLERTON
P. Geologic Types: SHALE, SNADSTONE, SERPENTINES, BASALTS, LANDSLIDE
ALLUVIUM, FRANCISCAN MELANGE

Q. Miles of Stream Channels by Order or Class:

I = 25 MI.

II = 25

III = 20

TOTAL = 70 MI

R. Transportation System:

Trails: 4 (miles)

Roads: 79 (miles)

PART III - WATERSHED CONDITION

- A. Fire Intensity (Acres): 22787 (low) 4927 (moderate) 20576 (high)
- B. Water Repellant Soil (Acres): 25503
- C. Soil Erosion Hazard Rating (Acres):
482 (low) 1932 (moderate) 45876 (high)
- D. Erosion Potential: 8.22 tons/acre
- E. Sediment Potential: 5248 cu. yds/sq. mile

PART IV - HYDROLOGIC DESIGN FACTORS

- A. Estimated Vegetative Recovery Period: 10 years.
- B. Design Chance of Success: 75 percent.
- C. Equivalent Design Recurrence Interval: 10 years.
- D. Design Storm Duration: 24 hours.
- E. Design Storm Magnitude: 8 inches.
- F. Design Flow: 275 cfs.
- G. Estimated Reduction in Infiltration: 52 percent.
- H. Adjusted Design Flow: 418 cfs.

PART V - SUMMARY OF ANALYSIS

A. Describe Emergency: Potential loss of soil productivity on high and moderately burned soils with an estimate of 8.2 tons per acre over the entire burn. Inherent erosion rates are high and will lead to degradation of water quality, debris slides and mud slides which may adversely impact the communities of Tassajara, Santa Margarita, and Atascadero through flooding. In addition mud slides and debris flows could impact the Southern Pacific Railroad. Loss of water control exists in Tassajara Creek, Atascadero, Morro Ck, and Santa Margarita. Cumulative impacts to Morro Bay exists from the Chorro drainage which is fed by San Bernardo, San Luisito, Pennington, Dairy and Upper Chorro tributaries. The Morro Bay is already at high risk with sediment conditions prior to the burn and anticipated sediment and erosion as a result of the burn is anticipated. Threat to human life and property exists at Cerro Alto Campground, Santa Margarita, Tassajara, Atascadero, and Morro watersheds. These areas are subject to debris and mudslides under pre burn conditions and with the removal of vegetation to help stabilize these areas the threat is further increased. Many of these streams are important for fisheries, especially Steelhead spawning areas in the Morro, Toro and Chorro watersheds. Increase in sediment to these areas may adversely impact fisheries habitat which could limit reproduction capabilities.

B. Emergency Treatment Objectives: Treatment objectives are to reduce soil erosion and sediment production in the five red flag watersheds where threat to human life, loss of soil, and loss of water control and degradation of water quality is anticipated. These watersheds are Tassajara, Atascadero, Santa Margarita, Upper Santa Margarita, Morro, and Chorro. Reduce the threat to loss of property and life. Keep water in the drainages and treat upper portions of watersheds so that downstream values are protected.

An additional objective is to continue the collaborative response to this watershed emergency which was created by the fire by working with other agencies involved. These agencies include California Dept. of Forestry and Soil Conservation Service. Collaborative work in evaluating the emergency up to this point recognizes the importance of working together to ensure the effectiveness of treatments to reduce the impacts of the burn. Public meetings held during the evaluation process were useful in identifying sponsors for Soil Conservation Service and CDF to work with and at this time all agencies are moving ahead in obtaining funding and looking for seed sources.

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

Land 85 % Channel 90 % Roads 90 % Other 100 %

D. Probability of Treatment Success

	<----Years after treatment----->		
	1	3	5
Land	60	75	80
Channel	80	100	100
Roads	80	100	100
Other Flood Patrol	95	95	95

E. Cost of No-Action (Including Loss): \$ 3,758,142.00

F. Cost of Selected Alternative (Including Loss): \$ 1,152,175

G. Skills Represented on Burned-Area Survey Team:

<input checked="" type="checkbox"/> Hydrology	<input checked="" type="checkbox"/> Soils	<input checked="" type="checkbox"/> Geology	<input checked="" type="checkbox"/> Range
<input type="checkbox"/> Timber	<input checked="" type="checkbox"/> Wildlife	<input type="checkbox"/> Fire Mgmt.	<input checked="" type="checkbox"/> Engineering
<input checked="" type="checkbox"/> Contracting	<input checked="" type="checkbox"/> Ecology	<input type="checkbox"/> Research	<input checked="" type="checkbox"/> Archaeology
<input checked="" type="checkbox"/> Recreation	<input checked="" type="checkbox"/> Fisheries	<input type="checkbox"/> _____	<input type="checkbox"/> _____

Team Leader: Carolyn O. Madden

Phone: 209-795-1381

DG Address: R05F16D52A

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 will include seeding and mulching. These treatments are intended to increase infiltration, reduce erosion, provide soil cover, and to reduce the amount of sediment which may enter the fluvial system and to reduce expected increases in peak streamflow.

Seeding is recommended to be applied in areas which meet the teams criteria which includes the following:

Do not seed on grasslands or where perennials currently exist

Not in areas where TES plants are found

Seed in areas with less than 60% slope and greater than 10%.

Only seed in areas with moderate and high burn intensity.

Utilize natives where feasible and to reflect natural vegetation

Seed in areas with high downstream values such as Morro Bay and in areas with there is a high threat to life and property (Tassajara and Atascadero, and Santa Margarita watersheds).

Do not seed in grass/oak woodlands where natural recovery is anticipated to be high.

Select seed based on its capability to respond and be effective to initial storms when erosion and sediment delivery is most likely to occur.

Seeding is recommended to be used in site specific locations within Tassajara, Atascadero, Santa Margarita, Upper Santa Margarita, Morro, San Bernardo, and San Luisito watersheds. Seed selection includes Zorro Fescue, Blando Brome and Cucamonga Brome at an application rate of 6 pounds per acre and a target of 30 pure live seeds per square foot. The total proposed acreage for site specific seeding is 8749 acres on National Forest lands, and seeding on private lands has been recommended by both California Dept. of Forestry and Soil Conservation Service for an estimated 6500 acres. All agencies are recommending the same seed selection and mix. Availability at this time looks good for implementation.

Species selection was based on the above criteria developed by the team, and from information on the success of similar seeding application rates and species on the Marre Fire incident of 1993.

Mulching: Mulching will be applied off of Forest Service roads which have been identified as having a high erosion potential due to steep cuts and fills. With herbaceous vegetation removed from these areas there is a need to reduce runoff by utilizing rice straw on 70 acres off of roads. Most Forest Service roads are at the higher reaches of the watersheds and have experienced a high intensity burn surrounding them. Additional road treatments are being recommended in conjunction with straw mulching to lessen the potential erosion, and to protect property and investment already in the road.

Channel Treatments:

Stream channel clearing has been recommended on 2 miles of Forest Service property. An additional 28 miles of channel clearing has also been proposed on private property to reduce the potential flooding hazard in the towns of Atascadero, Santa Margarita, and through Tassajara Creek. The goals are two fold: One is to protect downstream resources by remove dead and down material within the burned area which are in the channel that has a high likelihood for mobilization under predicted storms. The other goal is to be proactive in unburned areas and mow willows which are immediately upstream of structures which include culverts, bridges, and buildings. Most of the unburned areas which will be treated will be done with cooperation between private landowners and Soil Conservation Service, rather than on Forest Service Lands. Channel clearing on Forest Service lands within the burn will be done at specific locations and will have input from the Forest Fisheries Biologist to evaluate sensitive habitat reaches so that these areas are avoided.

Flood Patrol: Flood patrol will occur on National Forest lands to protect Forest Service property which includes the Cerro Alto Campground facility, and along West Cuesta road. Early detection devices (ALERT) will be installed to predict the potential for debris torrents and mudslides. This type of action will be done in conjunction with California Dept. of Forestry and the OES group in San Luis Obispo County. Flood patrol will enable the Forest Service to provide maximum services to the public by maintaining their campground and preventing threat to human life and property during and after storm events.

Road Treatments: Treatments to Forest Service roads was determined necessary due to both the potential loss of property and investment already made in these roads, and due to off site effects of water being concentrated on areas which burned under a high intensity at the top of the watershed where the roads may traverse. Channel diversion potential was also evaluated on all trails and roads reviewed. Due to the size and extent of the fire and the road access within the burn, not all areas were reviewed nor was jurisdiction fully confirmed in some locations. Follow up work is required to determine full treatment opportunities. The following treatments are recommended and include replacement of a 40 foot long and 8 foot tall wooden retaining wall. Other treatments are preventative in nature and include removal of culverts, placement of riser pipes, reshaping of portions of some roads so to avoid concentrating flows on already unstable and highly erosive slopes, removing temporary crossings, and providing road protection through rip rap embankments in two key locations. Road treatments for private roads, county, and State roads have been recommended and Cal Trans is working on patrol plans for both Highway 41 and 101 within the burn. Areas are already experiencing dry ravel and rock fall. Recommendations for county roads based on Forest Service review will be made available to the San Luis Obispo County engineers.

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

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

Line Items	Units	Unit Cost \$	NFS Lands			Other Lands			Al
			Number of Units	EFFS- FW22 \$	Other \$ ident.	Number of Units	Fed \$ ident.	Non-Fed \$ PVT ident.	Tot \$
A. LAND TREATMENTS									
Seeding	acres	70	8749	612430				6330	
Mulching	acres	800	70	56000				45	
B. CHANNEL TREATMENTS									
Channel clearing	miles	5000	2	10000				29	
C. ROADS AND TRAILS									
Remove culverts	each	3500	2	7000					
Install riser pipes	each	5000	2		10000				
Shoulder grading	mile	1000	10	10000					
Patrol& Maintenance	days	750	20	15000					
Rip Rap Embankments	each	2500	2	5000					
D. STRUCTURES & Roads									
Retaining Wall	each	15000	1	15000					
Rehape & Outslope	mile	5000	3	15000					
Early Warning System	each	8000	1	4000			4000		
E. BAER EVALUATION/ ADMINISTRATIVE SUPPORT									
BAER TEAM	Days	225	54	12150					
F. TOTALS									
				761580					

PART VII - APPROVALS

1. /s/ D. W. Dahl
Forest Supervisor (Signature)

August 26, 1994
Date

2. /s/G. Lynn Sprague
Regional Forester (Signature)

September 9, 1994
Date