USDA-FOREST SERVICE FS-2500-8 (7/00)

Date of Report: July 17, 2003

BURNED-AREA REPORT
(Reference FSH 2509.13)

PART I - TYPE OF REQUEST

A. Type of Report

[ ] 1. Funding request for estimated WFSU-SULT 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)

[X] 2. Interim Report
[ ] Updating the initial funding request based on more accurate site data or design analysis
[X] Status of accomplishments to date

[] 3. Final Report (Following completion of work)

PART II - BURNED-AREA DESCRIPTION

A. Fire Name: **Williams**

B. Fire Number: **CA-ANF-3518**

C. State: **California**

D. County: **Los Angeles**

E. Region: **Pacific Southwest**

F. Forest: **Angeles**

G. District: **San Gabriel River (52)**

H. Date Fire Started: **09/22/2002 1657**

I. Date Fire Contained: **10/02/2002**

J. Suppression Cost: **$ 15,300,000 (as of containment date)**

K. Fire Suppression Damages Repaired with Suppression Funds
1. Fireline water barred (miles): **xx equipment lines, handlines unknown**
2. Fireline seeded (miles): **0**
3. Other (identify): **Roads within and on the perimeter of the fire were graded.**

L. Watershed Number: 1807010602,1807010604,1807010603,1807020310,1807010605

M. Total Acres Burned: **38,184** NFS Acres (**33,970** Other Federal (**1,966)** State (0) Private/County (**2,248**)

N. Vegetation Types: **Mixed Chaparral, California Sagebrush, Riparian Woodland, and Canyon Live Oak, Big cone Douglas Fir.**

O. Dominant Soils**: Trigo, Exchequer, Lodo, Coperton, Modesto, Green Bluff, Stakel, Toolhouse, Sur, Wintrop.**

P. Geologic Types: **Precambrian to Miocene metamorphic crystalline rock, Cenozoic sedimentary and volcanic** .

Q. Miles of Stream Channels by Order: **Order 1(42 mi) Order 2(45 mi) Order 3(21mi) Order 4(2.8 mi) Order 5: (2 mi)**

R. Transportation System Trails: **0** miles Roads: **Forest System (53.3), County/State (11.8), LA County Public Works (48.8) LA Flood (1.0), Cabin Owners (1.7) miles**

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 9932 (low) 17,986 (moderate) 5727 (high) 4539 (unburn)

B. Water-Repellent Soil (acres): **33,928**

C. Soil Erosion Hazard Rating (acres):
0 (low) 3800 (moderate) **34,383** (high)

D. Erosion Potential: 220 tons/acre

E. Sediment Potential: 87,118 cubic yards / square mile

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years): **7**

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

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

D. Design Storm Duration, (hours): **2**

E. Design Storm Magnitude, (inches): **2.13**

F. Design Flow, (cubic feet / second/ square mile): **286**

G. Estimated Reduction in Infiltration, (percent): **47%**

H. Adjusted Design Flow, (cfs per square mile): **424**

PART V - SUMMARY OF ANALYSIS

A. Describe Watershed Emergency:

On September 22, 2002 at approximately 1657 hours, a fire started east of Camp Williams on the East Fork Road in the East Fork of the San Gabriel River. The initial tactic after addressing life threat concerns by evacuation of approximately 2200 recreational visitors was to focus on structure protection at Camp Williams and adjacent areas. Due to steep topography and fire intensities, fire perimeter control was severely hampered. The fire was human caused and the specific cause is still under investigation.

The fire grew in size over the next several days and many residences including Forest Service permitted recreation residences in San Dimas Canyon were difficult to protect due to burning conditions, geographic placement of the residences, and from a limited road system. Additional homes were evacuated in the cities of La Verne, Glendora, Mt Baldy and other communities over the next several days. After approximately 8 days of burning the mop-up was well underway and the BAER team had started to assemble to assess the damage.

There were some unburned areas within the perimeter that included the 1999 Bridge Fire, the Shinn Burn of 1999, and some of the big cone Douglas Fir/Canyon Oak forests in the vicinity of the Sunset peak.

The fire destroyed sixty (60) structures of the seventy-seven (77) in the San Dimas Canyon and approximately four (4) buildings that are part of the San Dimas Experimental Forest. Approximately 17 recreational residences remain within the area that burned at a moderate to high severity.

There are also scattered islands of north slope vegetation that did not burn. However the steep slopes, dry ravel, and hydrophobic soils caused by high burn severity combined with high values at risk below the forest necessitated a well orchestrated thorough Burned Area Emergency Rehabilitation assessment.

A Burned Emergency Area Team Leader was assigned to the incident on September 24 at which time the initial inventory was completed and the values at risk identified. Members of the BAER Team were ordered during September 25-30. The Forest Service through several meetings between involved agencies (NRCS, Los Angeles County Department of Public Works) and local cities (Glendora, San Dimas, La Verne, Claremont, Azusa, and Mt. Baldy) initiated coordination with other agencies. Working in conjunction with the above groups a thorough assessment of values at risk were identified and later reviewed in the field.

The Williams Fire burned in soils that occur on steep slopes and have a potential for high erosion hazards. The Fire could increase the high erosion hazard through the formation of water repellent soil layers at the surface or just slightly below the surface.

The Fire burned from the East Fork of the San Gabriel at Williams Camp, east across to San Antonio Canyon. The fire has affected approximately 15 miles of urban interface area adjoining the front of the forest and the communities of Glendora, San Dimas, La Verne, Claremont, and Mt Baldy. Most of the fire area had not burned in approximately 40 years.

Values at Risk Emergency –

Sediment yields and water flows: The Williams fire occurred in an area that is directly above numerous cities and communities. A complex of reservoirs and debris basins are located both on Forest Service lands and within the communities to serve as storage facilities for debris that could result from fires, earthquakes, or flooding. A high percentage of the watersheds that drain into the communities have burned at a moderate severity. Not only have they burned at a moderate severity but also due to the combination of steep, erodible slopes, hydrophobic soils, and loss of vegetative cover these areas will have a high watershed respond and efficiently conduct both debris and post-fire runoff downslope. Working with the Los Angeles County Department of Public Works (DPW) they have identified two debris basins of concern: Mull and Engelwild Debris basins. Approximately 34% of the Engelwild subwatershed has burned at both a low and moderate severity on Forest Service lands. Approximately 58% of Mull has burned with a low severity. Other watersheds that contain reservoirs and debris basins were reviewed but based on LA County DPW calculations they felt they could remove debris and release water by altering their schedule on several basins. They did alert other agencies that this would necessitate the hauling of material from their debris basins once they had over 5% debris, and that they would be releasing more water downstream throughout the winter to provide greater storage. Based on this information the Forest Service, which had initially been concerned with debris into San Dimas Reservoir developed a back up treatment plan that would help to reduce sediment by approximately 10% with the application of mulch. The San Dimas Reservoir has a 2,546,000 cubic yard capacity and estimates DPW estimates for a 5-10 year storm were 1,400,000 cubic yards. If successive storms were to occur it would be more difficult for the DPW to remove the material.

On the East Fork there are also a number of areas where increased sediment yield and water flows are anticipated. These locations include private land at Williams Camp, Camp Follows, and Camp #19. Steep slopes that burned under a moderate to high severity are prevalent and the anticipated watershed response is high.

Structures and Foundations at risk from flooding and debris: As previously noted, the Fire destroyed approximately sixty (60) of the structures in San Dimas Canyon, and four (4) buildings associated with the San Dimas Experimental Forest. There are currently seventeen (17) unburned structures, 2 private residences,

one (1) Forest Service Fire Station, within the Canyon, which have been evaluated to assess HAZMAT, and environmental hazards that may exist as a result of the fire. In addition the four (4) buildings associated with the San Dimas Experimental station have also been reviewed.

Recreational residences are personal property permitted to reside on National Forest land. Only 17 recreation residences remain within the high and moderate severity burn area. These unburned structures as well as the Forest Service Fire Station were analyzed for potential flooding and falling debris:

1. Eight (8) of the structures have debris channels on one or both sides of the buildings that are at risk of debris torrents to occur. (Recreation residence # 33, 67, 52,56,63,21,10, 51)
2. Seven (7) are at risk of dry ravel continuing to accumulate behind homes. Material is from steep Sideslopes that vary in length and steepness but most are over 60% slope. (Recreation Residence # 35, 24,28, 8,45,49,80)
3. Two (2) recreation residences are not at risk from sliding or any stability concerns (Recreation Residence # 26 & 53)
4. The Forest Service Fire station is at risk from debris torrents entering the barracks.

In addition to the above there were 5 access bridges to various recreation residences that may be at risk from flooding and debris. Many of these footbridges have water lines associated with them.

Although the foundations of the destroyed recreational residences appear to have limited value, they still are personal property of the permit holders.

HazMat and Debris: Nearly all of the burned recreational residences and Experimental forest facilities were determined to contain one or more hazardous substances in the ash or on the ground near by. These substances include asbestos, paint and paint cans, household chemicals, unburned petroleum products, propane tanks containing propane, and loose debris such as roofing steel. Each of the 60 burned cabins had a refrigerator, range, water heater, propane tanks, passenger cars, and four had shop machines and repair and welding equipment. Nearly all of the structures that burned are near or within the riparian area. With the predicted high winter flows and slope wash many of these hazardous materials are expected to be picked up by the water and move downstream into San Dimas Reservoir. Older appliances are not being put in local landfills. Burned appliances and equipment needs to be collected and brought to scrap recycling facilities.

San Dimas Recreation Residences - This cabin tract was heavily damaged from the Williams Fire. Structural debris and hazardous material from the burned residences could become mobilized into channels through sediment movement and uncontrolled water flow. It is the recommendation of the BAER Team that the District approach the permittee to cleanup the debris within 30 days. Funding is included within this request if the Forest has to cleanup the debris to protect the watershed.

There are thirty (30) vehicles that are burned or partially burned and they include passenger cars and smaller light-duty trucks. They contain at least 25 percent recyclable material. Recovery and recycling of these vehicles within San Dimas Canyon and at the Experimental Station needs to be done to remove them from flood prone areas.

HazMat survey conducted at Tanbark facilities on the San Dimas Experimental Forest identified five buildings that burned during the Williams Fire. Two buildings still contain asbestos. The large vehicle and maintenance building also had several burned FS vehicles. The large lysimeters and lab building has a large amount of asbestos materials. There are approximately 40 cubic yards of asbestos contained construction materials present and the burned maintenance building where asbestos shingles are present in about two cubic yards. Cleanup and disposal of the other 3 burned buildings, includes metal and tank wastes.

In addition to the HazMat associated with the burned recreation residences and Experimental forest facility, there was an additional site determined in Burro Canyon, which is a large debris storage area with an extensive concrete drainage network. At this same location a creosote building was burned and this poses a risk to water quality left untreated.

Archeology and Historical: Twenty-two heritage resource sites are located within the Williams Fire area of potential effect. Particular significance is attached to a proposed National Register of Historic Places (NHRP) District that encompasses the USDA –Forest Service San Dimas Experimental Forest. Of the 22 sites, a total of 15 sites were recommended for no action due to the low probability of effects from deteriorated watershed and the sites do not represent class one properties. The seven remaining sites require treatment or documentation.

Forest and County Roads: There are Forest roads located throughout the burn area that are used by a variety of forest users which include: permittees, communication sites access, San Dimas Experimental Forest, Recreational Residence access, private landowners, Los Angeles County Department of Public Works, and Forest Administrative staff. Loss of water control and inadequate drainage to handle the expected increase in flow could prevent access to portions of the Forest. Large amounts of dry ravel have already been documented throughout the burned area, which reduces the road width, plugs existing drainage structures and severely limits access. In addition there are several roads that have deteriorating road condition in terms of road width, condition of bridges, and loss of structural integrity of the bridges.

The Forest Service reviewed roads with the County DPW to assess access needs and safety. Several County roads will be closed. Two county roads, which are the East Fork and the Mount Baldy Road, were identified as being kept open to provide homeowner access throughout the year.

In addition there are numerous roads below Forest Service lands that are a safety issue for travelers. Specific roads include access into the San Dimas Canyon up to the recreation residences. The San Dimas Canyon Road adjacent to the golf course during storm events, East Fork Road, and Mount Baldy Road. In addition the road, which accesses Palmer Canyon residences, may become a safety issue during storm events due to the limited access and narrow road width within this canyon. Existing conditions after the fire indicate a high potential for dry ravel to reduce road width and despite efforts by both the Forest Service and the County DPW, road access conditions can change daily. The bigger concern is during the rainy season since there are large amounts of material to be mobilized that could block access and isolate recreational residences and other individuals within the area affected by the burn.

It should be noted that there is a forecast for a low to moderate El Nino effect to manifest by the end of the year. The assumption is that the average precipitation data that will be used is based on a time frame of long duration that includes the occurrences of El Nino events.

B. Emergency Treatment Objectives:

The base analysis used for the formulation of Emergency Treatment Objectives for the Williams Fire was the review of Emergency Treatment Objectives developed for BAER analyses. This was combined with information from previous wildfires in the area, local resource “corporate” knowledge, and close coordination with other agencies and groups to assess values at risk during the preliminary assessment of the Williams Fire burn area. The following goals for emergency rehabilitation of watersheds after wildfires was followed:

1. Loss of Soil Productivity
2. Deterioration of Water Quality
3. Loss of Water Control
4. Threat to Human Life and Property
5. Maintain ecosystem stability
6. Reduce potential spread of noxious weed

* Identify and reduce, through the development of treatment measures, to the extent possible:

- Damage to heritage resource sites.
- Spread or infestation of noxious weeds.
- Damage to physical investments within the burn area:
  - San Dimas Fire Station
  - Forest Service Roads: RD #1N10.1, 1N10.2, 1N11, 1N14.1 &2, 1N16.2, 1N17, 1N10A, 2N07, 2N17, 1N16.1
  - Coordinate with County DPW on Glendora Mountain Road and all county roads that provide access to the affected area.
  - San Dimas Recreation Residence Tract
  - Burro Canyon shooting range
- Reduce the potential for increased sediment deposition into Engelwild Debris basin.
- The loss of downstream property values including Palmer Canyon, San Dimas Golf Course, LA County DPW reservoirs and debris basins.
- The loss of downstream property values including Camp Follows, Williams Camp, and LA County Camp #19.
- Facilitate the identification of debris disposal sites on Forest where possible.

* Work in cooperation with Federal, State, and local responsible agencies and landowners to reduce the possible hazards to downstream values at risk, both public and private, from increased flows and sedimentation. Utilize Public Involvement Tools to facilitate interaction.

* Recommend measures to insure Forest User safety during events of increased flow and sedimentation.

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

Land **90** % Channel **90** % Roads **100** % Other **75** %

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land	90	95	100
Channel	75	75	75
Roads	80	90	95
Other	95	95	95

E. Cost of No-Action (Including Loss): **$2,612,500**

F. Cost of Selected Alternative (Including Loss): **$2,485,796**

G. Skills Represented on Burned-Area Survey Team:

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

Team Leader: **Carolyn Napper & Jeff TenPas**

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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.)

The treatment specifications that follow will be detailed in the Implementation Plan that will be developed upon funding approval for this Initial Request. The Plan will be provided to the Regional Office for review prior to any treatment implementation. The Forest Service will do all Treatments unless otherwise noted. All costs are based on treatment being done by the Forest Service.

Hillslope treatments

The objective of the hillslope treatments is to reduce erosion by providing mulch on both moderate and high severity burned areas. Due to the steepness of slopes in the area and the amount of dry ravel on slopes over 55%, areas were identified that were both treatable and had values at risk below.

The following treatments areas were prescribed:

- Treat the burned area above Engelwild where the debris basin has been identified by LA County DPW as not having adequate capacity
- Treat within San Dimas Canyon behind Recreation residences to establish cover and reduce sediment.
- Apply mulch on slopes above Williams Camp, Camp 19 and Follows Camp, and Glendora Mountain Road above the East Fork Road. Different treatments will be used based on slope steepness and availability of crews to spread straw.
- Treat at the San Dimas Experimental Station to prevent the spread of noxious weeds by the helibase.
- Treat at Burro Canyon by applying mulch on the fillslopes of the storage area to reduce rill erosion.
- Treat approximately 1700 acres in West Fork San Dimas with a combination of aerial hydromulch, aerial straw mulch, and ground applications of mulch. This area includes the most treatable part of the San Dimas Experimental Forest. It reduces sedimentation to the San Dimas Reservoir.
- Treat approximately 300 acres in Ham Canyon with straw wattles to improve infiltration and reduce length of slope.
- Fell burned trees and chip on site at four plantation locations. Use cut logs as slope stabilizers in and adjacent to plantation sites to reduce the movement of sediment.

Interim Report February 2003. The mulch treatments, including aerial hydromulch treatments as prescribed were not implemented due to the fact that there has been a significant amount of regrowth of forbs and grasses, up to 50% in most areas. In addition, sample testing of the hydrophobicity of the soils found them to be fairly absorbent.

Straw wattles were placed to contain the spread of noxious weeds within the San Dimas Experimental Station, heliport area. 2,000 straw wattles were placed in Ham Canyon. This project has been completed. The tree felling at four plantation locations has not been completed.

Expenditures to date: $52,374.73

Interim Report July 2003. Vegetative recovery over the entire fire area has been significant. Contributing to the successful regrowth was a series of storms, each followed by warm weather, which initiated and promoted plant growth.

Site inspection showed that the straw wattle treatment in the San Dimas Experimental Forest to prevent the spread of noxious weeds appears to be successful. No germination occurring downstream of site.

Straw wattles which were placed in Ham Canyon also seem to be effective. Treatments are considered to be successful. The tree felling at four plantation locations has not been completed.
Expenditures to date: $52,374.73

Hazardous Materials

Objective: To reduce the threat to water quality by contamination of hazardous materials found after the Williams Fire. There are three sites that have hazardous materials that vary in type from creosote logs, asbestos shingles, propane, lead, motor oil, and other automotive and welding materials.

- San Dimas Recreation Residences: Removal of hazardous material from 60 cabin sites.
  - Clean up and recycling appliances and propane tanks.
  - Trash, metals, and material containing asbestos are estimated at 60 tons.
  - 2 Equipment storages area have waste oils and chemicals. One has heavy equipment that needs fuel and oil drained prior to transport.
  - Four (4) trucks that need to be drained of fuel and oil for transport off-site.
  - Remove thirty (30) burned vehicles.
- San Dimas Fire Station: Drain Propane tank at this station.
- Burro Canyon: Removal of lead from shooting area. The shooting area is in the area where a concrete drainage network has been constructed at a sediment disposal site. The drainage network carries runoff, which has been increased as a result of the fire drains through a disposal area to Morris Reservoir, which is a drinking water supply.
- Tanbark Flats: 4 burned up buildings that are part of the San Dimas Experimental Forest were constructed of asbestos shingles.

<u>Interim Report February 2003.</u> These treatments were not fully funded/approved - no work was performed. The southern California area received a series of storms during the month of December where some areas experienced a total of over 6 inches of rain during the month. A second storm event, occurring in early February, where a storm cell centered over the Glendora and San Dimas area dropped over 5 inches within a one hour period. San Dimas Canyon experienced extensive damage from mud flows and subsequently a lot of material and metals were inundated with sediment. The access roads and bridge were completely destroyed. We are requesting additional funding to remove the existing hazardous materials from the burned cabin sites, the metals, and 35 burned vehicles. This work has already begun and is expected to be completed within 2 months.
A contract was completed for the removal of asbestos at Tanbark Flats.
Expenditures to date: $51,970.00

<u>Interim Report July 2003.</u> Removal of metals and debris in San Dimas Canyon has begun. A contract is underway to remove the 35 vehicles, some of which are partially buried in the stream channel. Additional costs were incurred for monitoring and testing as well as staff salary for the asbestos removal at Tanbark Flats.
Expenditures to as of June 30. : $57,124.50

At the time of this writing. WE STILL HAVE PUBLIC VALUES AT RISK DUE TO THE FIRE. Down stream of the San Dimas recreational tracts is a county flood control dam that diverts water into facilities that that provide domestic water to the cities of La Vern and San Dimas. The original work removed some of the obvious Hazardous Material. The large event in February buried many vehicles, metal, and other hazardous material from the recreational tract along with sediment and woody debris from the hillsides above the recreational tracts. Now that the hillsides have some dry vegetation matter we still expect next year that the flows will be high but with a greatly reduced sediment load. As a result the stream will continue eroding away the recently deposited sediments exposing cars, old drained propane tanks, a variety of other waste mixed with logs and other natural debris. Oil, gasoline, rusting and corroding metal are now and will continue to be released into the water. We were unable to get work crews in the late fall winter and spring because they were taken away and used to control Newcastle Disease in poultry and for the shuttle recovery.

Presently we have a crew that is doing channel clearing removing all of the debris that is obviously safe to handle. We are projecting that this crew will cost $32,000 and will be charged to the BAER

code. After the removal of the safe debris, which will allow access to all portions of the canyon, we need to bring in a Haz Mat crew to remove the cars and other hazardous debris. An estimate that a Haz Mat crew will cost an additional $45,000.

We are requesting a continuation of $77,000 to continue the cleanup in San Dimas Canyon.

Channel Clearing

Objective: To reduce the threat of loss of control of water as a result of debris jams forming from floatable material located in the channel. It is anticipated that floatable material may be mobilized and form debris jams and impoundments that could be more deleterious if left in the channel during anticipated higher flows.

A total of 3 miles of channel clearing is requested in the following areas

- Palmer Canyon: channel clearing on Forest Service above the private homes in Palmer Canyon which is a part of Claremont.
- West Fork of San Dimas
- Main Fork of San Dimas

Interim Report February 2003. Channel clearing started in portions of the West Fork and the Main Fork of San Dimas Canyon to remove floatable wood. A site visit to Palmer Canyon revealed that there was a sufficient "green belt" located between the burn and the private homes. No clearing was conducted. Expenditures to date: $16,634.58

Interim Report July 2003. Channel clearing clearly resulted in reduced downstream impacts during the storm periods, including one storm that yielded over 6 inches within a one hour timeframe. Damage to the West Fork and Main Fork of San Dimas Canyon would have been much more significant if channel clearing had not been completed.

In addition removal of standing dead trees in 3 locations for 100 feet above and 100 feet below the following recreation residences:

1. Recreation Residence #45
2. Recreation Residence #35
3. Recreation Residence #63

Interim Report February 2003. This work was completed and costs are reflected in the total costs for the above channel clearing.

Interim Report July 2003. This treatment, which included cutting and removing standing dead trees, was effective. Damage to these recreation residences could have been significant.

In addition to the above, removal of floatable material at a burned recreation residence is recommended. This will reduce the potential for debris jams to form and lower risk of water quality deterioration. Floatable material in this case includes both debris and a propane tank in the riparian area.

Threat to Life – Early Warning Systems

To reduce the risk of loss of life from potential flooding and debris flows an early warning mechanism is recommended for 7 locations throughout the burned area. Sites have been selected that are close to areas where life is potentially threatened. At this time the locations are tentative until further coordination and identification of existing sites has been documented with Los Angeles County DPW, and NRCS. This system should be for both local residents and also to advise travelers of impending emergency conditions that may pose a threat to life and property.

The following locations are recommended:

- West Fork San Dimas (numerous recreation residences in the area) The area is also above the San Dimas Dam and community of San Dimas.
- Main Fork San Dimas (numerous recreation residences, FS facility, San Dimas Dam below and an access route (San Dimas Canyon Rd) is located below.

- Palmer Canyon: This location has approximately 50 homes below in a narrow canyon with only 1 point of egress.
- Ham Canyon: This location is in a narrow canyon that has a moderately burned watershed above a golf course down below. In addition the San Dimas Canyon Road carries considerable local traffic from homeowners. By working in conjunction with NRCS and LA County DPW notification of hazards can greatly reduce threats to life.
- East Fork San Gabriel: This location is on a road that is proposed to remain open year round. The county is not closing the road due to private residences in the area. Steep terrain surrounds the area and numerous debris flow and flood source area ignition points, which cannot be effectively treated on the hillslope.
- Camp Williams: Located on a private land this is a recreation resort that may have people in the area that are unaware of the hazard created by the Williams Fire.
- Camp Follows: Located on private land this recreation resort may have people in the area that are unaware of the hazard created by the fire and that they are in the path of flooding and debris flows.

Interim Report February 2003. Based on communications with Los Angeles County Department of Public Works Flood Control, we have coordinated the monitoring of storm events with equipment already on line by other County entities. We receive long-range weather forecasts on a daily basis. One early warning system was purchased and placed to supplement the systems that are in place.
Expenditures to date: $12,481.00
Interim Report July 2003. Weather was monitored on a daily basis and more frequently during storm periods. All systems operated successfully.
Expenditures to date: $12,500 est.

Threat to Property-Structure Protection Measures

Locations have been identified that are in the direct path of potential debris flows or from dry ravel from steep hillslopes devoid of vegetative cover.

- San Dimas Fire Station: Part of the Angeles National Forest barracks at San Dimas Canyon is located within the path of a very steep channel that burned under a moderate severity. Due to the steepness of slope, stability of the hillslope the watershed response will be high. Debris could enter the barracks posing both a threat to life and destruction of property left untreated. San Dimas Fire Station install K-Rails to protect well house and propane tank. Both of which are located in the path of potential debris flow and flood event.
- Protect eight (8) Recreation Residence from debris flows by channeling flows past the residences into a safer area. This would be done utilizing a combination of K-Rails and construction of walls to serve as deflectors.
- Install chain link fences that are placed at approximately 7 locations to protect existing Recreation Residences from dry ravel that is moving off the slopes. Field review of existing chain link fences illustrates that this technique is very effective in reducing dry ravel and sediment accumulation on the structures.
- Protect the historic homestead by constructing a silt fence/straw bales/straw wattles that will reduce deposition on the feature.

Interim Report February 2003. K-rails were installed at the San Dimas Fire Station, fencing was installed at the recreation residences to protect and divert water and debris flow. In addition, wattles were placed above the San Dimas Fire Station and residence to slow down water flow.
Expenditures to date: $10,874.08
Interim Report July 2003. Sediments overflowed the K-rails which were installed at the San Dimas Fire Station causing minor damage to the station chlorinator building. Forest Service engineering crews were utilized on three occasions to remove sediments from this area. Damage was done to a chain link fence located down slope of the building. The fencing which had been installed at the recreation residences were successful in diverting the flow. Additional fencing was installed as a further protection measure.
Expenditures to date: $15,000 est.

Noxious Weeds

Monitoring at key locations for the potential increase and spread of noxious weeds within the Williams Fire. The monitoring methodology will be two pronged:

- Monitor existing and known populations of noxious weeds at Tanbark Flat, San Dimas Canyon, Dalton Canyon and Monroe Canyon. This is to inhibit inadvertent conversion of native plant communities into non-native grasslands or monoculture stands of non-native species. Monitoring will be done by reconnaissance surveys over a 3-year period unless establishing transects is determined to be needed.
- Monitoring/eradication of *Centaurea maculata* at Tanbark Flats: to inhibit inadvertent conversion of native plant communities into non-native grasslands or monoculture stands of non-native species. Monitoring will be done of infested areas after rainfall events each season to assess density and distribution of *Centaurea maculata.*
- Eradication will be done mechanically and chemically each year as prescribed by Jim Hartman (LA County Agriculture Department. Given this is a class A noxious weed eradication treatments are required. To reduce the spread of the noxious weed, soil stabilization in infested area will proceed before the first rain event. Treatments include Bonded Fiber Matrix, straw wattles or hay bale application.
- Rare plant habitat: To prevent additional loss of individuals or habitat for TEPS species and other rare species of the Angeles National Forest, the Species Management Plans will be updated for the TEPS species directly affected by the fire. In addition, known and historical populations for watch list species will be monitored. No BAER cost is associated with this effort.
- Natural revegetation of plant communities: to allow vegetative regeneration to ensure plant community and soil stability, which will provide protections. If ground treatments are not implemented, the ANF Botanist will conduct surveys. Ocular assessments of native plant communities will be done as driving thru the areas. If recovery appears to be slow or in need of rehabilitation these needs are to be addressed. If treatments are implemented then monitoring of the burn area will proceed including ground transects.

<u>Interim Report February 2003.</u> Monitoring of the noxious weed population has been conducted at Tanbark. Five site visits have been conducted. More are planned prior to and during the seed production phases of the plants. Over 235 plants have been located. These will be chemically treated prior to seed head development.
Expenditures to date: $800.00
<u>Interim Report July 2003.</u> Chemical treatment was conducted on two occasions to reduce the production of noxious weed.
Expenditures to date: $1,500 est.

Heritage Resource Values – There are seven sites that treatment measures are proposed for as a result of the Williams Fire. A sediment retention device (silt fencing) is proposed to protect Heritage Resource Site FS# 05-01-52-105. Develop and updated site record to document the layout of site components at FS #05-01-52-038 where potential impacts from sediment/debris flows may occur and there are no practical preventative treatments. Update site records to document linear features associated with two trail segments that have been newly detected and may be obliterated with dry ravel at sites FS #05-01-52-063, Fs#05-01-52-103. FS #05-01-52-108 is related to the San Dimas Experimental Forest. Previous assessment work by Jones & Stokes Consultants identified NRHP eligibility and it is recommended that help to assess fire damage and future watershed effects on SSDEF buildings and structures. The recordation treatment represents the least obtrusive treatment as well as the most efficient and fiscally beneficial in terms of the value at risk. See Heritage Report.

Shooting Areas – There is one shooting area located in Burro Canyon on National Forest. The lead present at the shooting areas is at risk from sediment movement and uncontrolled water flow to move out of the shooting area into the drainage network that takes runoff to Morris reservoir. This movement out of the shooting area would trigger a Hazmat violation with possible fines and expenses for a cleanup. Treatment is designed to keep the lead in place.

Interim Report February 2003. The channel structures have been cleaned by the shooting area permittee and Los Angeles County Flood Control. In addition, DPW has installed K-rail to serve as a dam structure and barrier control in some of the smaller channels within the shooting area.
Expenditures to date: $0
Interim Report July 2003. Treatment has been effective.
Expenditures to date: $500

Knapweed Control - The Forest will be working with the Los Angeles County Department of Agriculture to ensure the continued eradication of Knapweed at Tanbark Flats. This will include a combination of treatments that include stabilization of the site, mechanical removal of Knapweed, and chemical treatment. (See Botany Report)

Interim Report February/July 2003. This work is ongoing. See above discussion regarding noxious weeds.

Roads and Trail Treatments:

Road Stabilizing Retaining Walls – Install welded wire retaining wall at locations where vegetation depleted slopes along roads are causing the edges to slough away jeopardizing the integrity of the travel way. Estimate 600 facial sq. feet.

Installing Overside Drains: Install "Mac" type drains, and flume assemblies at a total of 3 locations to ensure drainage is maintained on roads. (1N10.1 and 1N17)

Drainage Basin and Flume Cleanout – Culvert pipe basins along Forest System roads will be cleaned out by Forest Service crews over a three week period to allow for the storage of new material associated with sediment and water flow as a result of this event. This will include basin cleanout and hauling the spoils to a designated site. See attached Engineering Estimate.

Road Barricades- Purchase and installation of barricades to prevent crossing the 3 burned out bridges within the burned area.

Outsloping and removal of berms- remove outside berms to reduce the potential for loss of control of water on approximately 10 miles of level 2 roads. This will help to reduce accelerated erosion and rill networks from forming.
Interim Report February 2003. The retaining walls and overside drains will be done by contract.
Expenditures to date: Contract prep - $2500; bid estimated at $77,700
The drainage basins and drain cleanouts have been completed.
Expenditures to date: $15,000
Road barricades have been purchased and placed.
Expenditures to date: $1380
Outsloping and removal of berms has not been completed. Will be done with decommissioning of roads.
Expenditures to date: $0
Interim Report July 2003. Extensive damage to road surfaces resulted after each storm. Forest Service Road Maintenance Crews completed cleanup work.
Expenditures to date: $3,000 est.

Postpone Bridge Installation- There are two bridges within drainage channels adjacent to watersheds that burned which have an existing contract for replacement. Due to projected increase in run-off through these channels it is recommended that the bridges not be installed until after the rainy season.
Interim Report February 2003. We are requesting $9,000 for bridge replacement. This work needs to be implemented as soon as possible to allow access for additional BAER work in areas beyond this bridge location.
Expenditures to date: $0
Interim Report July 2003. Contract package for bridge repair has been completed.
Expenditures to date: $8,818.34

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.)

A Monitoring Plan will be submitted within 45 days of the final approval of this Initial Request. At this time, funding is requested for the Plan formulation as well as some initial monitoring of the noxious weed populations, and natural revegetation of plant communities. In addition aerial photography of the fire is requested to monitor fire effects.

Monitoring/eradication of noxious weeds throughout burn area:

Objective: Inhibit inadvertent conversion of native plant communities into non-native grasslands or monoculture stands of no-native species. Areas of special concern are Tanbark Flats, San Dimas Canyon, Monroe Canyon, and all dozer lines and roadways. In addition, all areas treated for soil stabilization will be surveyed.

Description: Monitoring of burn area will proceed after rainfall events each season to assess invasion of native communities by non-native species. Monitoring will be done by reconnaissance surveys for 3 years unless establishing transects is determined to be necessary. Variability of biomass and density of noxious weeds will be used to assess the need for subsequent eradication treatments. Possible eradication treatments are pre-seed set harvesting, herbicide treatment, and/or seeding with native species. If eradication efforts are needed these costs will be applied for at the time of need.

Total cost for 3 years: $4,878 (No herbicide) or $10,378.00 (With herbicide). See botany report for further information.

Natural revegetation of plant communities:

Objective: To allow vegetative regeneration to ensure plant community and soil stability, which will provide watershed protection.

Description: In order to assess the effectiveness of the ground cover treatments, vegetative surveys will be conducted biannually for the next 3 years. A combination of the Point Cover and Line Intercept sampling methods will be used to assess changes in ground cover and germination rates in treatment areas. The number and placement of transects will be based on the area treated and accessability.

Total cost for 3 years: $12,078 or $4,026/year.

Aerial Photography

Objective: To capture the burned area at this time after it has burned and geologic as well as other features are very distinct.

Total cost: $8,000.00

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

Line Items	Units	Unit Cost	# of Units	WFSU SULT $	6/30/2003 $	Funds	# of units	Fed $	# of Units	Non Fed $
A. Hillslope Treatments										
Aerial Straw Mulch	acre	488	1203	$587,064	$0			$0		$0
Aerial Hydromulch	acre	3000	118	$354,000	$0					
Aerial Bonded Fiber Matirx	acre	4000	0	$0	$0					
Ground Hydromulch	acre	1,200	82	$98,400	$0					
Ground Straw Mulch	acre	500	568	$284,000	$0					
Ground Bonded Fiber Matrix	acre	3,000	1	$3,000	$0					
Ground Bonded Fiber Matrix with seed	acre	3050	2	$6,100	$0			$0		$0
Straw Wattles	acre	2000	103	$206,000	$52,375					
Structure Protection K-Rail	@ 12ft	400	30	$12,000						
Shoot Area-mulch	ft	8.5	1000	$8,500	$500				2000	$17,000
H-mulch Glendora Mtn Rd	acres	1200	50	$60,000	$0					
Tree Felling	acres	49	418.9	$20,526						
Subtotal Land Treatments				$1,639,590	$52,875			$0		$0
B. Channel Treatments										
Trees	ft	31.62	600	$18,972				$0		$0
Remove Floatable Debris	ft	6.83	8303	$56,709	$16,635			$0		$0
Subtotal Channel Treat.				$75,681	$16,635			$0		$0
C. Road and Trails										
Overside Drains (see text)	ea	3	7390.3	$22,171				$0		$0
Basin Cleanout	mi	20	924	$18,480	$15,000			$0		$0
Outslope	miles	10	1500	$15,000	$3,000			$0	1	$10
Retaining Wall	ea	92.63	600	$55,578	$80,200				1	$93
Road Closure Barricade	each	3	600	$1,800	$1,380				1	$3
Postpone Bridge Installation	project	1		$10,000	$8,818			$0	1	$1
Subtotal Road & Trails				$123,029	$108,398			$0		$107
D. Structures										
SD Fire Station Walls	feet	515	64	$32,750	$10,874			$0		$0
SD Fire Station Fence	feet	575	26	$14,585	$4,126			$0		$0
Subtotal Structures				$47,335	$15,000			$0		$0
E. Other										
Early Warning Systemea	ea	20000	7	$140,000	$12,500			$0		$0
Arch Treatmt Surveys	ea	3600	5	$18,000	$1,130					$0
Hazmat Treatments								$0		$0
San Dimas Tract	proj	1	71,000	$71,000	$5,155	77,000		$0		$0
Burro Canyon	proj	1	9,000	$9,000				$0		$0
Tanbark Hazmat	proj	1	17,000	$17,000	$51,970			$0		$0
Subtotal Structures				$255,000	$70,755			$0		$0
F. BAER Evaluation										
Team Leader				$13,700				$0		$0
Team				$65,130	$63,778					
Consultants (3)				$18,500	$22,509			$0		$0
Per Diem				$8,400	$3,899					
G. Monitoring					$1,500			$0		$0
H. Totals				**$2,246,366**	**$355,349**			**$0**		**$107**

PART VII - APPROVALS

1. /S/ Jody Cook — 7/17/30
   Forest Supervisor (signature) — Date

2. _____ — _____
   Regional Forester (signature) — Date