

Date of Report: 4/22/04 (Interim#2)

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

☐ Status of accomplishments to date

☐ 3. Final Report (Following completion of work)

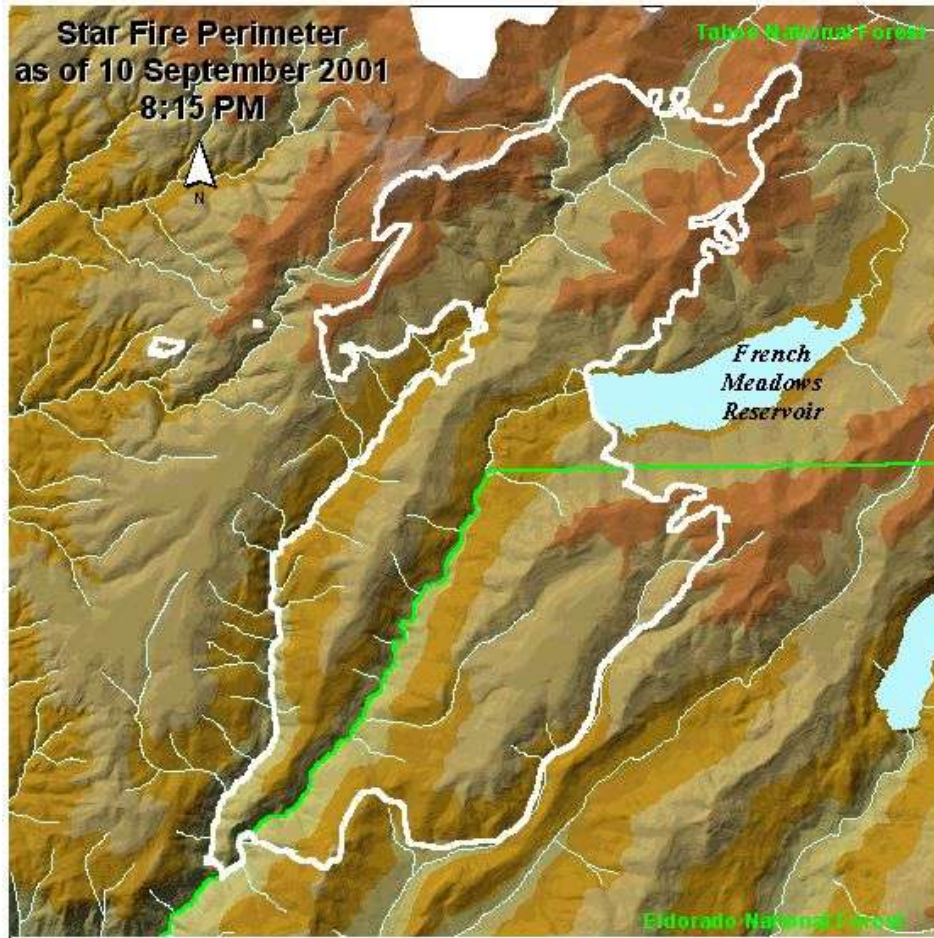


Figure 1 Star Fire, Eldorado and Tahoe National Forests

PART II - BURNED-AREA DESCRIPTION

A. Fire Name: STAR FIRE

B. Fire Number: _____

C. State: CA

D. County: Placer

E. Region: 5

F. Forest: Eldorado/Tahoe

G. District: Georgetown/Forest Hill

H. Date Fire Started: 8/25
9/13/01

I. Date Fire Controlled: Contained

J. Suppression Cost: \$ 21,500,000 to date

K. Fire Suppression Damages Repaired with Suppression Funds Suppression Rehab is just beginning

1. Fireline waterbarred (miles): 29.76 mi

2. Fireline seeded (miles): _____

3. Other
(identify):
chip and
mulch
16.26mi.
ripped and
covered
22.61mi.
blocked
access
4.25mi

L.
Watershed
Number:
1802012801
Upper
Middle fork
American
River
,180201280
2 Rubicon
River

M. Total
Acres
Burned:

NFS Acres(12056) Other Federal () State () Private (4705)

N. Vegetation Types: White fir dominated mixed conifer, Red fir, Canyon live oaks,

O. Dominant Soils: Volcanic, Andesitic Mudflow, Metasedimentary, Glacial Alluvial, Metavolcanic, and Rhyolitic parent materials.

P. Geologic Types: Geologic units found within the fire perimeter consist of: Glacial Deposits (4%), Mehrten forementation tertiary mudflow depostis (51%), Valley Springs Formation Rhyolitic Ashflow depostis (4%), Granitics (17%), and Shoo fly complex Metamorphics (24%)

Q. Miles of Stream Channels by Order or Class: Perennial: 28.3 miles
Intermittent: 14.3 miles

R. Transportation System

Trails:12.5 miles Roads:107.1 miles

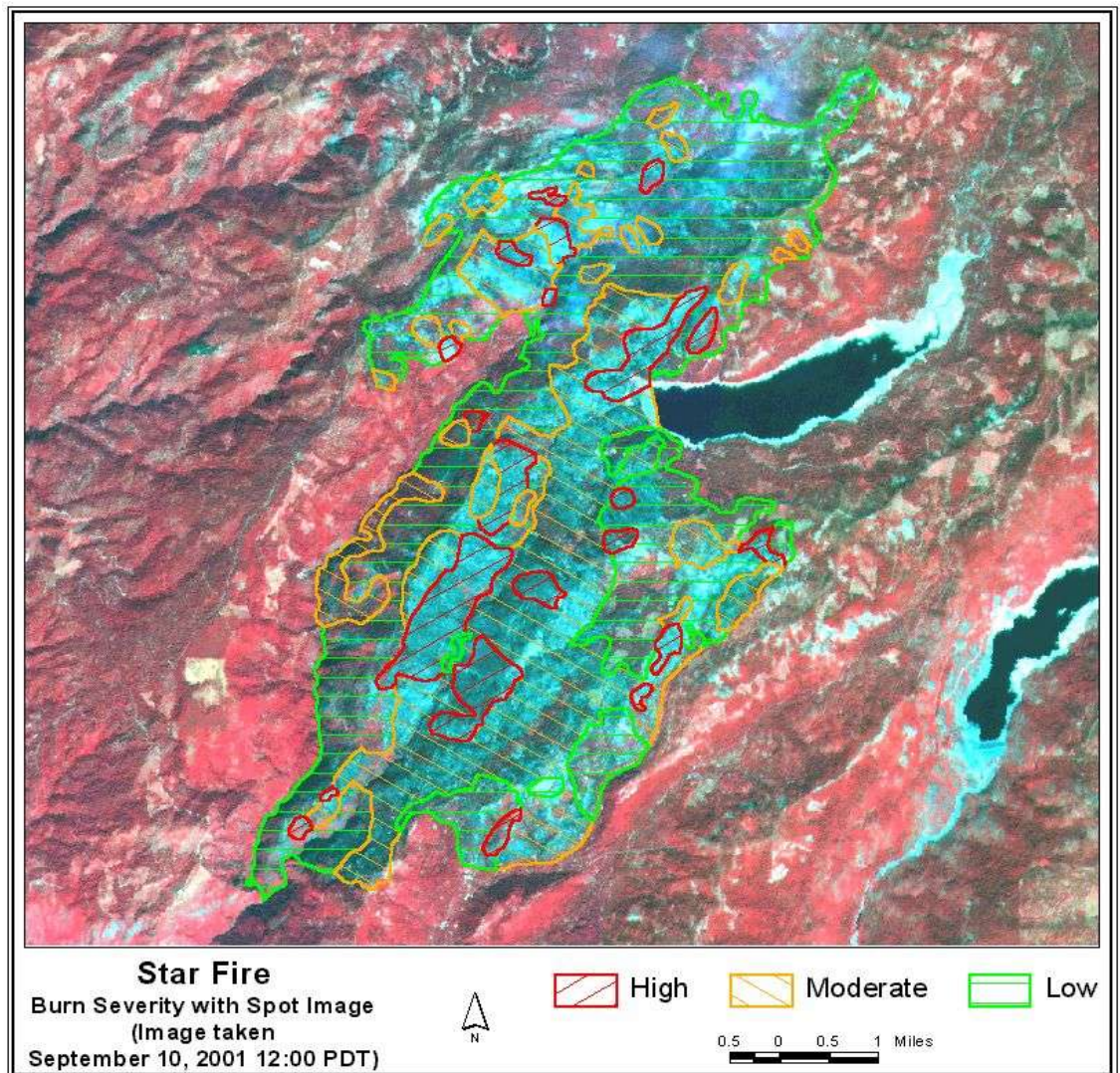


Figure 2 Star Fire Spot Image with Burn Severity

PART III - WATERSHED CONDITION

- A. Burn Severity (acres): 8604 51% (low) 6369 38%(moderate) 1844 11%
(high)
- B. Water-Repellent Soil (acres): 5,000
- C. Soil Erosion Hazard Rating (acres):
9558 (low) 5146 (moderate) 1620 (high)
- D. Erosion Potential: 8 tons/acre
- E. Sediment Potential: 3500 cubic yards / square mile

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years):	<u>5</u>
B. Design Chance of Success, (percent):	<u>90</u>
C. Equivalent Design Recurrence Interval, (years):	<u>5</u>
D. Design Storm Duration, (hours):	<u>6</u>
E. Design Storm Magnitude, (inches):	<u>3inches</u>
F. Design Flow, (cubic feet / second/ square mile):	<u>136</u>
G. Estimated Reduction in Infiltration, (percent):	<u>25%</u>
H. Adjusted Design Flow, (cfs per square mile):	<u>198</u>

PART V - SUMMARY OF ANALYSIS

A. Describe Watershed Emergency:

Threats to Water Quality: There will be a short-term threat to water quality in the Duncan Creek watershed, the Middle Fork of the American River downstream from French Meadows Reservoir, and the North Fork Long Canyon watershed. Ash and sediment are expected to be mobilized off the steeper slopes during first significant precipitation event. These areas will have increased potential for storm runoff and erosion, especially downstream of areas that were severely burned. The main short-term threat to water quality will be from fine, suspended sediment. Water temperatures will be affected by lack of shade in stream reaches where riparian vegetation and conifer crown canopy were consumed by the fire. Sediment storage capacity at the Duncan Creek and North Fork Long Canyon Diversion Dams, and the Interbay Dam could be affected if a high magnitude storm affects structures by obstructing the diversion tunnel screens with floating debris and sediment. Long-term effects to cold water fish habitat will be beneficial, as the fire will increase gravel and large woody debris to the stream channels.

Threats to Life and Federal Property: On federal lands, **several roads are considered to be at-risk** from additional precipitation event runoff and sediment expected from post-fire conditions blocking drainage structures and causing failures of roadbed and fill. Forest Rd. 96 is the main access road from Forest Hill to French Meadows Reservoir. This is a ridge top road, with steep drop offs into Duncan Canyon, and many curves. The road was burned over during the fire, and brush that lined the road was burned off. Safety signs were burned off as well.

A threat to human life exists where there is a lack of definition of the road course. The French Meadows reservoir is an important recreational area, and a facility related to the Placer County Water Agency hydropower operations. Rd. 96 is a critical access route for this area.

Geologic Hazards

The large part of the burned area contains naturally unstable geologic formations. Areas within the fire perimeter mapped as moderate and high burn severity will see high levels

of vegetative mortality. The loss of trees and other vegetative cover will reduce the ability to effectively reduce runoff. Winter breakdown of the hydrophobic soil layer may allow for increased infiltration and activate some features.

A threat to human life, private property, and water quality exists at the Dam House, located just to the north of French Meadows Dam due to a risk from debris flow and debris slide activity. The activity may increase in frequency and magnitude as the result of the fire. A debris slide feature is located approximately 200 meters north of the house. This feature was determined to be unstable by the geologist on the BAER team.

A threat to human life exists, as the risk of falling rocks into all of the roadways is extremely high, and actively occurring.

There is also a threat to human life from falling snags if people are hunting, hiking and camping or driving within the burned area, and while fishing and wading streams where increased flows are likely to occur at an unexpected magnitude from spring snowmelt and summer rainstorm events.

Trail users will see an increased threat from narrowed tread and deep holes where stumps burned out adjacent to the tread. Increased water flow, concentration of water in the trail and associated gullying may force users from the original tread onto a less stable surface or rock slide. An increased number of snags in areas of high burn intensity will continue falling for years and pose a threat, especially during high wind events and when ground conditions are wet.

Segments of the Western States and Tevis Cup trails are within the fire perimeter. Both are to be nominated for National Recreation Trail status in accordance with the Tahoe National Forest Plan. The American Discovery Trail route is synonymous with most of the trail mileage within the fire perimeter.

The Tevis Cup and a segment of the Western States Trail are used for a nationally acclaimed endurance run and endurance ride as well as conditioning training associated with those events. The trails are also used regularly by hikers and equestrians. Average daily use on the Western States trail for summer 2000 was 6.2 per day. A threat to human life exists from all of the above-mentioned failures if they occur while people are in the vicinity.

The property at risk is the trail prism itself described as a tread average 18" width, cleared height of 10' above tread, cleared width of 8' centered on trail tread including cut slope and fill which may include rock cribbing, rock or compacted fill. Uncontrolled and channeled water in the tread will lead to gully formation, excess sedimentation to nearby streams where erosion control devices have been partially and completely burned out. Forest Development trails in the report area, which pose threats to human life and loss of property in high and moderate burn intensity areas, include the following:

Trails: Western States Trail 5.0 miles
Tevis Cup Trail 6.5 miles
Little Bald Mountain 1.0 miles

Roads: #96 7.0 miles
- #96-52 2.0 miles
- # 96-57 7.3 miles
- # 96-63 4.2 miles
- #96-67 1.5 miles
#14N42 2.4 miles
#57 17.8 miles
Total: 42.2 miles

Threats to Life and Private Property There are several structures within the burned area, and immediately downstream of the burn which are facilities used for water storage and power production by the Placer County Water Agency. Debris and sediment mobilized by storm events could have a detrimental effect on these structures. Increased maintenance may be required at diversion dams, and a loss of storage in project reservoirs will be likely.

The burned areas have several roads that normally would be frequented by deer and bear hunters, this time of year. These areas are hazardous to travelers. Access to these roads needs to be restricted to private property owners, co-operators, fire fighters and other administrative uses.

Threat of significant loss of soil productivity: A long-term threat to soil productivity is not predicted, based on the WEPP model, which was used for this analysis. Certain areas of moderate to high severity burn are at increased risk of soil erosion and there is an increased risk of localized mudflows from increased runoff. However, the predicted rate of soil erosion does not exceed the long-term rate of soil formation. The risk of excessive soil erosion is mitigated by: a large amount of residual standing dead trees which will become a source wood that will reduce overland flow velocities and soil erosion rates (a number of these trees are already falling down and making contact with the ground surface), large areas that have extensive fine unburned root mat to hold soil in place, and recovery of perennial grass and other grasses that is expected to occur rapidly. The greatest predicted loss of soil is from failure of roads and hill slopes associated with failure of the road drainage system and increased debris-laden runoff. Specific areas include those areas identified for road treatments above.

Threat to terrestrial ecosystem: The introduction and spread of existing noxious weeds to recovering native ecosystems in the Star Fire area will impose a threat on the natural recovery of native plant species, thereby causing a long term threat to the terrestrial ecosystem integrity.

Threat to aquatic ecosystem integrity (habitat for Threatened and Endangered aquatic species): The burned area is directly above the highest elevation extent of range for the California red legged frog, *Rana aurora draytonii*, however, there is no suitable habitat identified in this area.

Threat to heritage and cultural resources: No potential fire-related effects to heritage resources, direct or indirect, or effects from associated emergency suppression or rehabilitation treatments have been identified.

Threat to wildlife Threatened and Endangered Species: No potential fire-related effects to TE wildlife species have been identified. There are no TE wildlife species identified within the burned area.

B. Emergency Treatment Objectives: To protect life, water quality, and Federal property, by treating the risk of failure of road and trail drainage structures, reduce the risk to driver safety by treating the road driving hazards with safety signs and markers, and informing the public of the risk of entering and recreating in the burned area. To protect the terrestrial ecosystem from the loss of habitat to exotic species of plants through monitoring and early weed eradication.

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

Land % Channel % Roads 90 % Other 0 % (would actually occur the year after the fire)

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land	none proposed		
Channel	none proposed		
Roads	90	90	90
Other	95	95	95

E. Cost of No-Action (Including Loss): 4,085,000

F. Cost of Selected Alternative (Including Loss): 531,294

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"/>
<input type="checkbox"/> Forestry	<input checked="" type="checkbox"/> Wildlife	<input type="checkbox"/> Fire Mgmt.	<input checked="" type="checkbox"/> Engineering	<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 checked="" type="checkbox"/> Fisheries	<input type="checkbox"/> Research	<input type="checkbox"/> Landscape Arch	<input checked="" type="checkbox"/> GIS	

Team Leader: Cheryl Mulder

Email: cmulder@fs.fed.us
FAX: (530) 621-5297

Phone: (530) 621-5246

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: The Star fire BAER team considered several hillslope treatments to mitigate the potential threat to water quality and loss of topsoil. The steep terrain characteristics, high soil rock content, and location of the high severity burned areas within the Star fire burned area make the likelihood of effectiveness of the implementation of hillslope treatments extremely low.

The site of the identified geologic hazard above the Dam House will be visited by a geologist, observed, and measured for evidence of movement, annually for the first three years post fire.

Channel Treatments: none are proposed

Roads and Trail Treatments: The treatment proposed for trail erosion and structural damage potential is to recondition all drainage structures (except those accomplished through fire suppression rehabilitation). These structures include waterbars, rolling dips, and lead-off ditches. After drainage structures are in good condition for the wet season, periodic maintenance after runoff producing precipitation events is proposed. Trails will be signed with public information on hazards associated with entering the burned area for recreation.

On roads, four culverts will be replaced and several end sections and debris racks added on other culverts. Rock hazard and storm drainage patrols of roads in the burned area are also proposed. **From a recent road survey, additional metal end sections (mes) have been identified as necessary for approximately 5 culverts. Several culverts located on interior roads within the Star Fire area are plugged and need cleaning and conditioning prior to winter. These were not included in the suppression rehabilitation efforts.**

Signs to be placed include rolling rock hazard signs and replacement of four curve signs that were burned. Roadway delineators will be placed where vegetation has burned off and outer road delineation is no longer evident. Road stripe paint which was burned off will also be restored. Signs will be placed according to Forest Service sign placement guidelines.

We propose to gate these roads to the public. These gates will be installed as soon as possible and maintained by FS personnel until the hazard is over. We have analyzed the various methods of closure: gates; road blocks, such as earth barriers, rocks, and the like; signs; and manned stations. The road blocks do not allow fire equipment and administrative access, and the manned stations are far too expensive. Signs can make it illegal to traverse the roadway, and thus reduce the FS liability, however, in this case our

objective is to prevent people from being killed or injured due to falling trees and rocks. The roads that are proposed for gating provide access to administrative facilities, mostly associated with the Placer County Water Agency hydropower facilities.

The following roads need to be gated:

Tahoe Forest Road 57, Red Star Ridge Road, at its junction with Mosquito Ridge Road.

Tahoe Forest Road 96-57, Hardclimb Road, at its junction with Mosquito Ridge Road.

Tahoe Forest Road 96-52, Duncan Diversion Road, at its junction with Mosquito Ridge Road.

Noxious Weeds : A Botanist will visit all areas utilized for fire suppression (dozer and hand lines), drop points, staging areas, and adjacent burn areas, as well as known occurrences(pre-fire) to determine and manually minimize the effects of noxious weeds on vegetative recovery. This should occur annually for three years.

Structures: none are proposed

H. Monitoring Needs

Road and Trail Drainage Structure Treatment Effectiveness Monitoring

Monitoring Narrative: Monitoring is proposed for the Road and Trail treatments to determine if they are handling the additional runoff and debris as predicted, and to assure that the installation was adequate to effectively handle the post fire runoff. Three days of engineering specialists time will be required to visit all of the treatments which are being applied. Monitoring should take place at the first opportunity in the spring of 2002 and prior to access by the public. Gate monitoring will be done as incidental to the monitoring described above.

Noxious Weed Monitoring

To identify new and spreading occurrences in the Star Fire area before they become large, difficult to treat, or have altered native ecosystems.

Visit areas utilized for fire suppression (dozer and hand lines), drop points, staging areas, and adjacent burn areas, as well as known occurrences (pre-fire) to determine the effects of noxious weeds on vegetative recovery. This should occur for annually for three years.

Walk dozer and hand lines, drive roads, visit: known occurrences, drop points, staging areas and adjacent burned areas to determine presence or absence of noxious weeds. This work should be performed by a GS-5/7 botanist or range scientist, and a GS 9/11 botanist or range scientist. There are approximately 20 miles of hand line, 15 miles of dozer line, 45 miles of roads, two base camps, about 10 camp areas, 2 RAWs areas, two fueling areas, three staging areas, 24 drop points, two known weed occurrences, and one helispot that would need to be monitored. This would take approximately 7 ten-hour days annually on the Eldorado National Forest and about 9 ten-hour days annually for the Tahoe National Forest. This would allow for the areas to be visited, the drive time to this remote area and any needed reporting time. The cost for this project would vary depending on grade, step, and locality pay between the Eldorado and Tahoe National Forests. An average of the grades and locality pays added to the days needed to monitor for noxious weeds would be about \$6,000.00 for the first year. An estimate of 4% wage increase annually would make the estimate \$6,240.00 for the second year and \$6,490.00 for the third year. A total maximum cost for monitoring for three years would be \$18,730.00. All other costs related to noxious weeds, in the Star Fire would be paid for by the home forest.

Noxious weed monitoring in the Star Fire area should be performed by botanists and/or range scientists. The first monitoring should occur in 2002. Monitoring for weeds should take place between July 15 and August 30 to identify the suspected weeds while they are blooming. The Eldorado and Tahoe National Forests have the needed equipment and personnel at this time to perform the noxious weed monitoring. Impact on Human Life:

Geologic Hazard Monitoring:

Occupants of the Dam House, located just to the north of the French Meadows Dam are at risk from debris flow and debris slide activity which may increase in frequency and magnitude as the result of the fire (See Figure 4, Dam House Instability Zone in the specialist report). A debris slide deposit feature is located approximately 200 meters north of the house. This feature was determined to be unstable due to the presence of jackstrawed trees ranging in age from 5 to 40 years.

This deposit, as well as upslope source areas would require monitoring in the spring for two days for the first three years to determine if there are any signs of reactivation (cracks, scarps, tree tipping). Occupants of the house should be warned of the increased risk, and should themselves evaluate that risk during times of heavy storm activity. The monitoring should be performed by at least a journeyman geologist.

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

Line Items	Units	Unit Cost	# of Units	WFSU SULT \$	Other \$	# of units	Fed \$	# of Units	Non Fed \$	Total \$
A. Land Treatments										
							\$0			\$0
				\$0			\$0		\$0	\$0
				\$0			\$0		\$0	\$0
<i>Subtotal Land Treatments</i>				\$0			\$0		\$0	\$0
B. Channel Treatments										
				\$0			\$0		\$0	\$0
				\$0			\$0		\$0	\$0
				\$0			\$0		\$0	\$0
				\$0			\$0		\$0	\$0
<i>Subtotal Channel Treat.</i>				\$0			\$0		\$0	\$0
C. Road and Trails										
trail structures		2500	1	\$2,500			\$0		\$0	\$2,500
signs		1200	1	\$1,200			\$0		\$0	\$1,200
storm/rock hazard patrol		8500	1	\$8,500			\$0		\$0	\$8,500
road drainage		85,000	1	\$85,000			\$0		\$0	\$85,000
additional mes & cleaning		10,000	1	\$10,000			\$0		\$0	\$10,000
road gates		2,500	3	\$7,500			\$0		\$0	\$7,500
<i>Subtotal Road & Trails</i>				\$114,700			\$0		\$0	\$114,700
D. Structures										
				\$0			\$0		\$0	\$0
<i>Subtotal Structures</i>				\$0			\$0		\$0	\$0
E. BAER Evaluation										
BAER Team	ea	55,000	1	\$55,000			\$0		\$0	\$55,000
Supplies	ea	300	1	\$300			\$0		\$0	\$300
G. Monitoring Cost				\$0			\$0		\$0	\$0
road treatments	yr	5,000	1	\$5,000						\$5,000
geologic monitoring	yr	875	1	\$875						\$875
noxious weeds	total/yr	3,500	1	\$3,500						\$3,500
H. Totals				\$179,375			\$0		\$0	\$179,375

Funding Request (red)

PART VII - APPROVALS

1. /s/ John D. Berry
Eldorado National Forest Supervisor (signature)

Date 4/26/04

/s/ Steve Eubanks
Tahoe National Forest Supervisor (signature)

Date 4/26/04

2. _____
Regional Forester (signature)

Date