Date of Report: 10-12-01

BURNED-AREA REPORT
(Reference FSH 2509.13)

PART I - TYPE OF REQUEST

A. Type of Report

[X] 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)

[X] 2. Interim Report
[X] 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)

PART II - BURNED-AREA DESCRIPTION

A. Fire Name: Moose

B. Fire Number: H14228

C. State: Montana

D. County: Flathead

E. Region: 01

F. Forest: Flathead

G. District: Glacier View

H. Date Fire Started: 8-14-01

I. Date Fire Contained: Unknown

J. Suppression Cost: $18,500,000 (as of 10-10-01)

K. Fire Suppression Damages Repaired with Suppression Funds
The following information is not available at this time. This information will be added at a future date.
1. Fireline waterbarred (miles):
2. Fireline seeded (miles):
3. Other (identify):

L. Watershed Number: (Sixcode HU's) 17010206010010, 17010206010020, 17010206010030, 17010206010040, 17010206010050, 17010206010070, 17010206020020, 17010206020040, 17010206020070, 17010206020080, 17010206020090, 17010206020100, 17010206020110

M. Total Acres Burned: NFS Acres (36808) Other Federal (22522) State (6530) Private (941) as of 9/18/01

N. Vegetation Types: Douglas-fir and Subalpine fir Potential Vegetation Types

O. Dominant Soils: Udifluvents, Eutroboralfs, Cryoboralfs, and Cryochrepts

P. Geologic Types: Precambrian meta-sedimentary; predominantly argillites, siltites, quartzites, or limestones.

Q. Approximate Miles of Stream Channels by Order or Class:
190 miles Perennial (140 miles FS-FNF and State-DNRC, 50 miles NPS-GNP)
105 miles Intermittant (97 miles FS-FNF and State-DNRC, 8 miles NPS-GNP)

R. Transportation System: Trails: 31 miles FS-FNF 5 miles NPS-GNP
Roads: 103 miles FS-FNF 9 miles NPD-GNP 5 miles Flathead Co.
11.5 miles State 3 miles Private

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 40910 (low) 25036 (moderate) 856 (high)

B. Water-Repellent Soil (acres): 28563

C. Soil Erosion Hazard Rating (acres): 38831 (low) 2685 (moderate) 25286 (high)

D. Erosion Potential: 15.7 tons/acre

E. Sediment Potential: 10,028 cubic yards / square mile

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years): 3

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

C. Equivalent Design Recurrence Interval, (years): 100 (flow)

D. Design Storm Duration, (hours): 1

E. Design Storm Magnitude, (inches): .5 and 2

F. Design Flow, (cubic feet / second/ square mile): 48

G. Estimated Reduction in Infiltration, (percent): 40

H. Adjusted Design Flow, (cfs per square mile): 96

PART V - SUMMARY OF ANALYSIS

A. Describe Watershed Emergency:

- Water Quality, Fisheries, and Aquatics.

Big Creek and Coal Creek are critical bull trout streams for the entire Flathead system. Bull trout are the species of greatest concern and most affected by the alterations of habitat as a result of the fire and actions related to that fire. Big Creek and Coal Creek contain two distinct populations of bull trout and combined represent up to 35% of the bull trout spawning activity in the Flathead System. The Big Creek and Coal Creek bull trout populations are critical to the recovery of the species in this area. These drainages are Flathead National Forest priority watersheds and a regional priority subbasin.

Big Creek and Coal Creek are currently listed on the Montana 305(b) list as having sediment problems. Flathead Lake, also listed and downstream from the fire area, has an identified nutrient enrichment problem. The Big Creek EAWS and TMDL plan both identified the large number of roads in that drainage and identified that many of the problems in the drainage are related to roads and past harvest activities. Several existing undersized culverts are at a high risk for plugging or be overtopped, and causing major erosion of the road prism, directly above Bull Trout spawning areas. The concern is that sediment and debris from a culvert failure may bury spawning gravels, fill pool habitat, and alter habitat connectivity in Big Creek.

Roads # 315, 316, 1655, and 1696 are located in the headwaters area of Big Creek directly above the Moose Creek fire area. During the post-baer watershed assessment 4 culverts were identified as being significantly undersized to the point they needed replacement this fall prior to another snow-melt event. An above average flow event (5-10 year return interval flow event) at these crossings could result in failure of road prisms and delivery of significant amounts of sediment into critical spawning habitat. During the same post-baer assessment in the headwaters area there were many stream crossing and other roads segments identified, that are delivering sediment into the headwater streams above the Bull Trout spawning areas. The installation of BMPs (e.g. drive-thru-dips, cross-drain culverts etc.) would reduce the sedimentation load to the already stressed aquatic ecosystem.

These proposed treatments are recognizing the Big Creek watershed as a system inside and outside of the burn area. We feel we need to accomplish all **emergency treatments** needed within the entire watershed due to the values at risk. **Without these treatments BAER rehabilitation already accomplished may not be effective. All treatments proposed in this interim request are to be accomplished within the next two to three weeks.**

- Public Safety

  During the initial Baer assessment the loss due to the fire of several road-warning signs were not identified for replacement funding. The request would fund the immediate replacement of burned warning-signs within the burn area.

B. Emergency Treatment Objectives:

- Minimize fire effects on water quality and fisheries habitat by reducing the amount of potential sediment delivered to streams due to inadquately sized culverts and poor road drainage design, on roads # 315, 316, 1655, and 1696.
- Replace road safety signing that was destroyed during the fire incident.

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

Land % Channel % Roads **90** % Other %

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land			
Channel			
Roads	85	90	95
Trails			
Other			

E. Cost of No-Action (Including Loss): **See initial 2500-8 cost-risk analysis document.**

F. Cost of Selected Alternative (Including Loss): **See initial 2500-8 cost-risk analysis document.**

G. Skills Represented on Supplemental Burned-Area Survey Team:

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

Team Leader: Dean Sirucek, Hydrologist, Flathead National Forest
Bill Basko, Soil Scientist, Flathead National Forest

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H. **Treatment Narrative:**

ROADS AND TRAIL TREATMENTS:

Funding for new projects:

1) On Flathead National Forest System roads # 315, 316, 1655, and 1696 remove critically undersized culverts at 4 sites along the roads. Once the culverts are removed apply erosion matting and grass seed on the excavated streambanks.
2) Installed road drainage structures (BMPs e.g. drive-thru-dips etc.) on portions of those same road. Site specific locations and specifications can be found in the project file. The purpose of the work is to decrease the risk that road stream crossings/culvert failures and inadquate road drainage delievering sediment into an important fisheries spawning area. **This work should be conducted ASAP before heavy snowfall occurs.**
3) Install road warning signs burned during the fire incident.

Need for additional funds for previously approved projects:
Additional funding is requested to adequately finance three previously accepted BAER projects (initial cost estimate was low), for the culvert cleaning, drain-dip/culvert up-sizing road treatments, and the Skookoleel North stream alliuvial fan reconstruction, Moose Fire 2500-8 (9/20/01).
1) The initial request for the culvert cleaning was $9,147 the final expenditure for this activity is estimated to be $26,098 or $16,951 under-funded. The reason for this cost over-run is that many more culverts needed cleaning than estimated, and the cost of machine rental was under estimated.

2) The initial estimate for the drain-dip/culvert upsizing was $145,100 the final contract cost was $159,000 or $13,900 under-funded.

3) The Skookoleel North alliuvial fan reconstruction was estimated at $3,381 the final cost for this was $14,672 or $10,291 under-funded. The primary reasons for this cost over-run was the under-estimate of time to do the work, and the not identifing the need for rock armoring of the new channel.

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

Please see attached spreadsheet.

PART VII - APPROVALS

1. /s/ Cathy Barbouletos — 10-12-01
   Forest Supervisor (signature) — Date

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