USDA-FOREST SERVICE **FS-2500-8**
(6/06)

Date of Report: October 23, 2006

BURNED-AREA REPORT
(Reference FSH 2509.13)

PART I - TYPE OF REQUEST

A. Type of Report

[X] 1. Funding request for estimated emergency stabilization funds
[ ] 2. Accomplishment Report
[ ] 3. No Treatment Recommendation

B. Type of Action

[ ] 1. Initial Request (Best estimate of funds needed to complete eligible stabilization measures)

[X] 2. Interim Report # 3
[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: Black Crater Fire

B. Fire Number: OR-DEF-000570

C. State: OR

D. County: Deschutes

E. Region: 6

F. Forest: Deschutes NF

G. District: Sisters Ranger District

H. Fire Incident Job Code: P6C03X

I. Date Fire Started: July 24, 2006

J. Date Fire Contained: August 9, 2006

K. Suppression Cost: $8.33 million

L. Fire Suppression Damages Repaired with Suppression Funds
1. Fireline waterbarred (miles): 3.2 to date
2. Fireline seeded (miles): None to date
3. Dozer line respread and wood pulled across (miles): 1.5 to date

M. Watershed Number: 1707030108

N. Total Acres Burned:
NFS Acres (5,148) Other Federal (0) State (0) Private (4,259)

O. Vegetation Types: A variety of forest and plant habitats are associated with the elevation and moisture gradients found in the fire area. Elevations range from over 6000 feet in the wilderness near the fire's origin on the east flank of Black Crater to around 3400 feet near the eastern extent of the fire near the Crossroads subdivision. Precipitation varies from about 80 inches a year in the high elevations on

Black Crater to about 14 inches near Crossroads. High elevation forests in the wilderness include lodgepole pine, mountain hemlock, and subalpine fir. Mid elevation forests associated with Trout Creek are primarily dry mixed conifer, with some inclusions of wet mixed conifer. Common tree species include: ponderosa pine, Douglas fir, white fir, and lodgepole pine. Low elevation forests are ponderosa pine.

P. Dominant Soils: The primary soils within the fire perimeter consist of moderately deep layers of airfall ash tephra overlaying basaltic lava, glacial till or outwash. Soils located on the mid and upper flanks of the stratovolcanoes are located on residuum, while the soils on the lower flanks are located on glacial till.

Q. Geologic Types: Bedrock throughout the area is comprised primarily of basaltic lavas

R. Miles of Stream Channels by Order or Class:

Perennial 3.13 miles Intermittent 0.72 miles Ditch 0.79 miles

S. Transportation System

Trails: 6.3 miles Roads: 34 miles of NFS; 41 miles of Private

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 3,713 (low) 5,573 (moderate) 103 (high)

B. Water-Repellent Soil (acres): No acres identified

C. Soil Erosion Hazard Rating (acres):
3,713 (low) 5,573 (moderate) 103 (high)

D. Erosion Potential: 2.18 tons/acre

E. Sediment Potential: 994 cubic yards / square mile; 69.5 cubic yards of material could be delivered to stream channels in a year in which a 25 year 30 minute storm event occurred.

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years): 5

B. Design Chance of Success, (percent): 90

C. Equivalent Design Recurrence Interval, (years): 50

D. Design Storm Duration, (hours): 0.5

E. Design Storm Magnitude, (inches): 0.67 - 0.77

F. Design Flow, (cubic feet / second/ square mile): 86 - 99

G. Estimated Reduction in Infiltration, (percent): none

H. Adjusted Design Flow, (cfs per square mile): 86 - 99

PART V - SUMMARY OF ANALYSIS

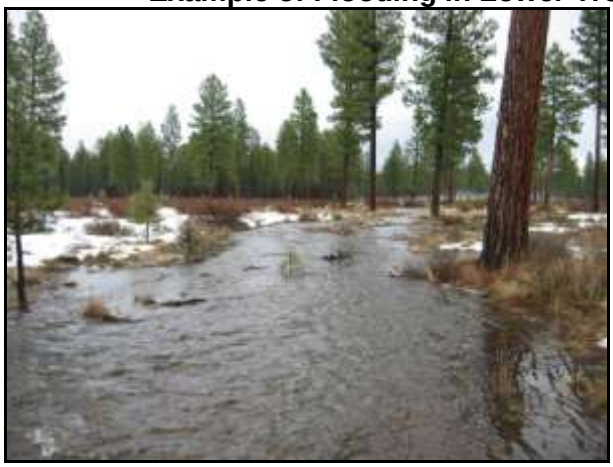
Threats to Public Lands and Private Property Within and Downstream of the Black Crater Fire

Of the 9,407 acres burned in the Black Crater fire, 45% of these acres are located on private land within the fire perimeter. Private lands also occur immediately downstream of the fire area and include developments outside and within the City of Sisters.

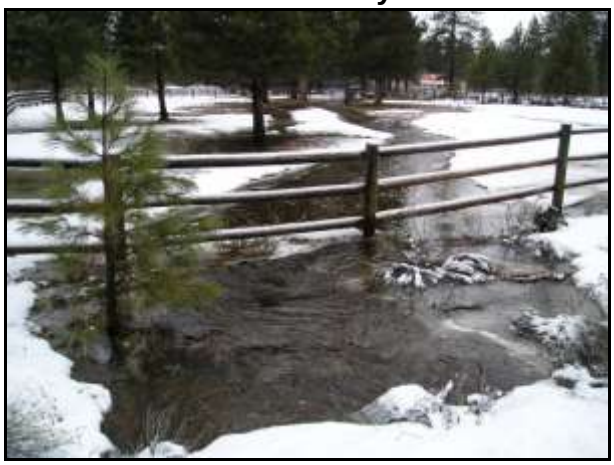
Trout Creek runs through the middle of the fire area. The creek is perennial in its upper stretches within the fire perimeter and intermittent or ephemeral in its lower reaches. Field reviews and analysis indicate that several road drainage structures within the fire perimeter on public and private lands are inadequate to carry predicted post-fire water flows. In addition several road drainage structures downstream and outside the fire perimeter are also at high risk of failure and overtopping with predicted post-fire water flows.

Although the lower section of Trout Creek is ephemeral, during rain on snow events it can run substantial quantities of water. This has caused flooding where channels run through subdivisions, commercial developments, and under Highway 20 in the City of Sisters. Because of its infrequent flows, FEMA did not map the lower Trout Creek floodplain and the area is not zoned as Floodplain by Deschutes County. This has allowed construction to occur in the ephemeral floodplain. In the last 10 years the creek has twice flooded housing developments during 1996 and 2006 winter storms and overtopped road culverts on both private and county roads during 5 year flood events. In other areas, the stream intersected and then flowed along roads on both private and public lands causing flooding on private and public lands. The culverts within the perennial section of the creek within the fire's perimeter also breached during this event on private and public roads. The 2006 flood was rated as a 5 year flood event. Management direction suggests road culverts should be sized to handle 100 year flood events.

Example of Flooding in Lower Trout Creek Watershed January 2006



Trout Creek flowing through private property behind Sisters High School, January 2006



Trout Creek flowing thorough Trapper Point Subdivision January 2006 (5 year Flood Event)

Analysis of the situation indicates that there is a higher risk of increased post-fire peak flows in Trout Creek and combined with even a low magnitude rain-on snow event (5 year flood event) there is high likelihood of road and property damage. A 5 year flood event has a 20% probability of occurring any given year. Increased flows are predicted from increased overland flow and decreased evapo-transpiration because 47% of the inner gorge of Trout Creek burned at high intensities, killing most trees and vegetation. This condition will cause increased runoff for at least 5 years until ground vegetation recovers. Precipitation in the fire area occurs between October and March and ranges from 70 in/yr to 15 in/yr of rain or snow, with most of it occurring as rain. Elevations in the fire area range from 3400 ft to 6500 ft; therefore, most of the fire area is within the rain-on-snow zone (approx. 3500-5000 ft).

Biological resources at risk from road washouts include aquatic habitats and an isolated population of Interior Columbia Basin Redband Trout which is unique to Trout Creek. Public safety concerns and private property at risk include roads on private timberlands and a private mining operation, the Tollgate subdivision, Reed Ranch, Three Winds Shopping Center, Trapper Point subdivision, County Roads (Pine Street & Camp Polk Road) and Highway 20. Of special concern is the potential risk to Highway 20 because it is a major economic artery for the state and the second busiest highway in Oregon. Past closures of Highway 20 due to fires or landslides have had devastating economic impacts to Central Oregon communities and affected thousands of travelers.

The Deschutes NF is recommending treatments on National Forest System Lands with Burned Area Emergency Response (BAER) funds to protect water quality, aquatic habitat, and road infrastructure and prevent noxious weed spread. BAER Treatments would include: culvert upsizing with box culverts or arch structures, various additional drainage features, road reconditioning, and weed patrol.

The Deschutes NF is also recommending treatments on private lands within the upper and lower Trout Creek Sub-watersheds using Wyden Amendment (PL 105-277, Sec. 323). The Wyden Amendment authorizes the Forest Service to enter into cooperative agreements with willing Federal, Tribal, State and local governments, private and nonprofit entities and landowners for the protection, restoration, and enhancement of fish and wildlife habitat and other resources on public or private land, for the reduction of risk for natural disaster where public safety is threatened, or for a combination of both that benefit resources on NFS lands within the watershed. Treatment of these private lands/roads, in conjunction with the Forest Service BAER treatments will benefit National Forest System lands by reducing impacts to resources such as: water quality, fish and aquatic habitat, and road infrastructure, while also reducing the risk of legal action against the Forest Service.

For the Amendment to work, cost-share agreements with the State of Oregon, Deschutes County and private landowners are required. Potential internal funding sources such as supplemental Regional or local forest funding have been explored and are not available. The status of other potential private funding and inkind work for other involved entities are listed below:

Cooperative Funding Status

1. Natural Resource Conservation Service. Emergency Watershed Protection contribution for the replacement of two private culverts for Trapper Point Rd. is pending (Michelle Richwine).

2. City of Sisters, Funding towards Trout Creek drainage improvements is pending (Eileen Stein, City Mgr, Gary Frazee, City DPW).

3. Sisters Mainline Station, LLC “McDonalds franchise. Funding towards Trout Creek drainage improvements is pending (Steve Rodgers, Member).

4. Tollgate Community, Funding or in-kind contribution for Trout Creek drainage improvements is pending (Betty Fadely, Finance Mgr, Mike, Board of Directors, Ken, Maint. Mgr).

5. Reed Ranch, An in-kind contribution for channel treatment through private land is pending (Mike Reed, Owner).

6. FS 2500-8 PR1 $150,000/Ea. Private Rd-1018990-Funding or an inkind work contribution for the culvert replacement on Ponderosa Land & Cattle INC/Sister’s Land Co. is pending (Bob Wolfenbarger, Member).

7. FS 2500-8 PR2 $135,000/Ea. x 2 = $270,000. Pine St. & Camp Polk Rd. A 15% in-kind (survey/design/admin $40,500) contribution by Deschutes County Road Department for the replacement of culverts has been committed (Roger Olson, Road Sup, Gordon, Rd. Maint. Foreman, Tom B, Director of Public Works (DPW).

8. FS 2500-8 PR2 $135,000/Ea. x 2 = $270,000. Private-Trapper Pt. Rd. Funding for two culvert replacements is pending (Landowners – Sam Robson, Road Association Pres, Richard Flarity).

9. FS 2500-8 PR2a $250,000/Ea. State-Highway 20. A 15% in-kind (survey/design/admin $37,500) contribution by ODOT for the replacement of these culverts is pending (Gary Farnsworth, Const. Eng, Pat Creedican, Maint. Mgr, Brad Grimm Const. Mgr.).

10. FS 2500-8 PR5 $2,665/Ea. Private Rd-1018990. A 30% in-kind (dozer work $800) contribution for constructing a rock ford is pending (Ponderosa Land & Cattle INC/Sister's Land Co.).

11. FS 2500-8 PR5 $2,665/Ea. Private Rd. A 30% in-kind (dozer work $800) contribution for channel treatment through a planned subdivision, BBC Developers has been completed (Curt Kallverg, Member, Bill Willitts, Member).

Agreements Status

There are tentative partnering agreements in place. The Forest Grants/Agreements person is aware of the need to expedite BAER Wyden amendment agreements with landowners and other entities when Wyden amendment funding is approved.

A. Describe Critical Values/Resources and Threats:

The following summary describes the conditions that warrant emergency rehabilitation actions, including those recommended under the Wyden Amendment. This initial assessment and the resulting prescriptions have been developed utilizing experience gained from previous events in the area, including the 2003 B&B Complex and Link fires, and the 2002 Eyerly and Cache Mountain fires.

- Human Life and Safety - potential loss or injury of human life due to post-fire environmental conditions primarily due to danger trees along travel routes and dispersed camping sites and flooding on roads downstream both on federal and private land.

- Property (homes, businesses, roads, culverts, recreation sites/trails) - potential loss or damage to property on both federal and private land due to post fire environmental conditions primarily due to hazard trees, increased flow magnitudes, flooding, and erosion. These include State, Federal, County and private roads and culverts. Regional and/or National benefits of keeping traffic and commerce moving on Highway 20 is significant. Traffic could be slowed or stopped if existing culverts are overtopped and fill is washed away. Traffic volume on Highway 20 averages about 9000 vehicles a day An estimate of commercial economic loss in product transportation alone is estimated at $1.4 million/day (based on one truck/5minutes carrying goods, average product @ $5000/load). Partnering with the community and other entities in coordination of effort to address flooding issues is beneficial to protecting the Forest Service from legal claims and protecting high value private property.

- Water Quality - risk of increased sedimentation into streams due to erosion on exposed soils. Also risk of increased stream temperatures as a result of 2.5 miles of the 3.85 miles of Trout Creek within the fire perimeter experiencing stand replacement burn conditions.

- Critical Habitat and Fisheries – loss or degradation to Sensitive Redband Trout habitat/species due to increases in sedimentation and stream temperatures. The Trout Creek population of Redband Trout is a unique and genetically isolated native population and has already been adversely affected by a fish kill during the wildfire. On August 2-3, a survey of fish kill associated with the wildfire was conducted. A total of 34 dead fish were counted, however later information indicates total fish kill was higher.

- Cultural Resources - loss or degradation to one cultural resource site due to exposure from post-fire runoff and erosion, resulting in an increase in surface collection by forest visitors.

- Sensitive and Desirable Plant Communities - potential loss or degradation to both native and rare plant communities/populations habitat and species due to post-fire conditions and spread of noxious weeds into and around the burned area and from private lands. Based on team assessment of burn severity, no seeding is recommended due to natural vegetation recovery and effects on native plant communities.

- Soil Productivity - Analysis of soil conditions has determined that direct effects from the fire on productivity are minimal and potential effects on productivity as a result of erosion are very low. As a result, emergency treatments have not been proposed.

B. Emergency Treatment Objectives:

The primary objective of this Burned-Area Emergency Response Report is to recommend prompt actions deemed reasonable and necessary to effectively protect, reduce or minimize significant threats to human life and property and prevent the unacceptable degradation of resources. The application of the BAER treatments would minimize on-site and downstream damages to the identified values at risk. The emergency treatments being recommended by the Deschutes National Forest/BAER Team are specifically designed to achieve the following results.

Proposed Land Treatments
The objectives of the land treatments are to:
1. protect human health and safety by removing hazards
2. prevent noxious weed spread and introduction to protect native plant communities and rare plants
3. monitor potential vandalism and fulfill legal obligation to document condition change and update cultural resource site records
4. protect the non-motorized wilderness value

Proposed Channel Treatments
The objective of the channel treatments are to:
1. improve channel drainage capacity and reduce the potential for flood damage to adjacent private land

Proposed Forest Service Road Treatments
The objective of the road treatments are to:
1. improve road drainage capacity and reduce the potential for accelerated surface runoff, erosion and sediment input to nearby streams and short term effects on fish habitat
2. reduce road surface water velocities and water concentration
3. improve culvert capacity to reduce the potential for road failure due to increased flows
4. prevent out-year drainage problems
5. improve overall watershed conditions while protecting, restoring, and enhancing of sensitive fish habitat and passage

Proposed Non-Forest Service Road Treatments (all work to be completed under the Wyden Amendment)
The objective of the State, County and private road treatments are to:
1. improve road drainage capacity and reduce the potential for accelerated surface runoff, erosion and sediment input to nearby streams and reduce downstream impacts on federal and private lands and stream channels
2. reduce road surface water velocities and water concentration
3. improve culvert capacity to reduce the potential for road failure due to increased flows and impacts of such failure on downstream federal lands and stream channels (e.g. reduce the risk for natural disaster where public safety maybe threatened)

4. prevent out-year drainage problems
5. avoid liability claims for damage on private property and county and state roads
6. restore ecosystem health across multiple ownerships and to build constructive, collaborative relationships with communities and stakeholders downstream and within the fire perimeter
7. improve overall watershed conditions while protecting, restoring, and enhancing of sensitive fish habitat and passage

Proposed Trail Treatments

The objective of the trail treatments are to:

1. minimize potential resource damage by improvement of trail drainage capacity and reduce the potential for erosion on compacted trails and slope raveling following fire
2. minimize potential resource damage by removing trail obstacles to prevent unauthorized parallel trails being developed by the public
3. allow for safe access to drainage sites for the public, contract crews and/or force account crews

C. Probability of Completing Treatment Prior to Damaging Storm or Event:

Land **80** % Channel **80** % Roads/Trails **70** % Protection/Safety **80** %

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land	80	80	80
Roads/Private Roads/Trails	80	80	80
Channel	95	95	95
Protection/Safety	95	95	95

E. Cost of No-Action (Including Loss): $8.5 million

F. Cost of Selected Alternative (Including Loss): $1,565,011

G. Skills Represented on Burned-Area Survey Team:

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

Team Leader: Terry L. Craigg/Randy Strohm

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H. Treatment Narrative:

Land Treatments:

L1 - Felling of individual danger trees (Fall 2006) along the following routes to protect human life and safety;

- along the portion 1.0 miles of Millican Crater Trail, 3.95 miles of Cross-District Trail and 0.85 miles of the Metolius-Windigo Trail within moderate and high intensity burn areas
- along access routes and culvert/drain dip/ford site surveys and operations for BAER Treatments (15 miles associated with L4, R1, R2, R3, R4, R5, R7, T1 & T2).

Routes to receive danger tree felling will be evaluated to provide the safest access at the lowest cost.

L2- Direct treatment of invasive plants introduced or aggravated by the fire or fire suppression activities to prevent weed spread and introduction to native plant communities and rare plants. The goal is to prevent or reduce noxious weed establishment and invasion into the burned area. This would involve surveying the fire area roads, safety zones, dozerlines, and larger firelines for new infestations, and removal of any discovered seed sources by manual control to prevent spread and establishment. The probability of completing treatment in the first year is high. Crews would complete the work next summer. Private landowners in the area will also be contacted to encourage cooperative weed management.

The probability of treatment success is high. The plants are easily seen in bloom by road surveys or in vegetative conditions in walking surveys.

If indications of weed invasions are found in the first year of monitoring, additional funding may be requested, depending on availability of other program funding to address the problem.

L3- Treat and monitor potential vandalism and surface ground conditions, if erosion is occurring, using local down wood to create erosion control structures would be effective. If extensive surface artifacts are visible, consider closing the access road or the dispersed camp sites for a few years until vegetation has reestablished and covered more of the site.

L4- Construct and install six Educational/Safety Awareness Information boards (Fall 2006). These boards are for emergency purposes and would be located on major roads and entrance areas to the fire. Boards and signs would educate the public on the hazards that exist due to the fire and the safety precautions necessary to avoid injury and/or fatality. Locations would be at both Cross-District Snow Mobile Trailheads, at both Metolius-Windigo Trailheads, Millican Crater Trailhead, and Whispering Pines Campground.

Forest Service Road Treatments:

R1- Replace Trout Creek culverts on the 1510 (one 30” and one 36”), 1510400 (two 43”x27”) and 1008 (two 34”x24”) road with a large concrete box culvert or arch structures (Fall 2006/2007). This will increase runoff capacity and reduce the potential for a culvert/road failure during post-fire high flows. The structure will be designed for a 100 yr event estimated @ 200cfs and protect, restore and enhance sensitive fish habitat/species in the drainage.

R2- Upsize up to five existing smaller culverts with larger circular culverts along the 1018 (18”) and 1024 (15”) roads, and other roads within the fire perimeter as identified. Increase culvert capacity 1018 road to 30” and 1024 road to 24”. Repair cross drain culvert inlets or outlet and upsize some (15”) to 18” along roads 1018, 1024, 1520 (Fall 2006). This treatment will reduce the potential for a culvert/road failure or breeching during post-fire high flows and protect sensitive fish habitat and species.

R3- Armor drain dips on the Forest secondary and interior routes within the fire perimeter and that are directly related to water quality and moderate severity to improve road drainage capacity and reduce sediment delivery into Trout Creek.

R4- Install waterbars to enable roads to better handle expected increases in surface runoff these roads are directly below moderate burn areas (Fall 2006). Roads recommend for treatment are classified as interior and secondary roads within the fire perimeter.

R5- Manage Road Surface Water (Fall 2006) within or directly downslope of moderate and high intensity burn areas. May include re-establishing the road ditch template, removing outside berms, armoring outlet, and cleaning inlets and outlets to improve road surface drainage. Would occur on steeper interior roads adjacent to Trout Creek and tributary drainages to Trout Creek.

R6- Storm patrol by Forest Service personnel in a pickup (especially high and moderate burn intensity areas) during and immediately after storm events to repair, unplug, or aid in drainage of road drainage features.

R7 – Reconstruct/Construct armored rock fords at crossing on maintenance level 1 & 2 crossings of Trout Creek. Forest roads level III include 1510 temp, 1510400 temp, 1008 temp, these three temp fords would be removed after new structure installations are in place. Forest roads 2000031, 1010120, 1010130, 1010260, 1010260A are fords reconstruction left in place (Fall 2006). This treatment will reduce the potential for a culvert/road failure or breaching during post-fire high flows and protect sensitive fish habitat and species.

<u>Non Federal Road Treatments (all work to be completed under the Wyden Amendment):</u>

PR1- Replace Trout Creek culvert on the 1018990 road with a concrete box culvert or arch structures (Fall 2006/2007). This undersized culvert (48") is located approx. in the middle of the fire and Trout Creek reach. It has Government land above and below it. Replacement of this culvert will reduce the potential for a culvert/road failure or breeching during post-fire high flows and protect, restore and enhance sensitive fish habitat/species in the drainage.

PR2- Replace Trout Creek culverts east (downstream) from Forest road 1008 (Fall 2006/2007). State Highway 20 (3-24") is below Govt. land and is a critical pinch point due to inadequate capacity of existing culverts. In the spring of 2006, water diverted down FDR 2000031 to private property, only part of the Trout Creek flow had to pass under Highway 20. If all of the flow from Trout Creek had to pass through these culverts, the flow in 2006 would have overtopped State Highway 20.

Pine Street (2-15") County Rd. becomes FS 2058 road. Government land is above this crossing and private below. Trout Creek crosses through private property downstream towards trapper pt. rd.
Trapper Point Road is a private road and Trout Creek crossings at two points. The first is (27"x22" and 2-15") that are not adequate.

Camp Polk Road (27"x22") is a County rd, and becomes FS 2050 road and was overtopped in 2006.

Replace these culverts with concrete box culverts, Box culverts were selected due to limited fill height requirements. This will reduce the potential for a culvert/road failure or breeching during post-fire high flows threatening public safety and protect, restore and enhance sensitive fish species in the drainage. Majority of culverts overtopped during a 5 year event during the winter of 2006.

PR3- Armor drain dips within the Ponderosa property to improve road drainage capacity and reduce sediment delivery into Trout Creek (Fall 2006).

PR4- Storm patrol (especially high and moderate burn intensity areas) during and immediately after storm events to repair, unplug, or aid in drainage of road drainage features.

PR5 – Reconstruct/Construct armored rock fords at crossing on private road crossings of Trout Creek (Fall 2006). This treatment will reduce the potential for a culvert/road failure or breaching during post-fire high flows and protect sensitive fish habitat and species.

Trail Treatments:

T1 - Improve trail drainage by reconstructing drain dips on 2.35 miles of trail to reduce the potential for runoff concentration and accelerated surface erosion form anticipated fire effects. Dips vary from rolling outslope dips to waterbars constructed from peeled and anchored native wood material that was destroyed by the fire. These treatments will occur on trail segments with moderate and high intensity burn where the potential for post-fire increases in surface runoff is high.

T2 - Log out trail: A number of fire killed trees will be falling and blocking trail access. Trail log out will be necessary on 2.35 miles of trail to gain access to the sections of trail that need drainage improvements and prevent development of parallel unauthorized trails.

Channel Treatments:

C1 –There is a known problem through this relatively small reach of Trout Creek and has been documented with pictures. An emergency situation does exist at the present, and the additional flow and sediment will make it worse. This request is to study how best to address this situation that has an effected on private property. Complete a field assessment to determine the drainage network of Trout Creek between the State Highway 242 crossing and the 1008 road crossing, between the 2000032 crossing and State Highway 20, and between the the State Highway 20 crossing and the Pine Street crossing. At that point, in-channel stream recommendations and/or design criteria established to help direct flow through the existing and/or improved crossings and prevent continued flooding on adjacent private property.

Protection/Safety Treatments:

See **L1** and **L5** above.

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.)

M1 - Results of the weed prevention treatments L2 will be monitored by assessing effectiveness and writing a brief report documenting the results of the summer's surveys. This documents implementation and provides valuable documentation of the weed risk from inadequate prevention measures, describes problem areas, and will provide data for future weed control in the area if needed.

M2 - An archaeologist will visit the site, heritage site L3, with the site records to record changes to the physical characteristics of soil movement within the site, look for signs of site disturbance by

visitors, and document changes in surface artifact distribution and density. Monitoring will occur in the fall, after rain events for the first year and in the spring after snow melt.

M3 – Monitor culverts on the 1510 road, 1510400 road and 1008 road once replacement is complete to see if 200cfs design capacity is accurate.

Part VI – Emergency Stabilization Treatments and Source of Funds Interim # 3

			NFS Lands				Other Lands			All
		Unit	# of		Other	# of	Fed	# of	Non Fed	Total
Line Items	Units	Cost	Units	BAER $	$	units	$	Units	$	$
A. Land Treatments										
L1- Danger Tree Felling (roads)	each	$101	67	$6,750	$0		$0		$0	$6,750
L1- Danger Tree Felling (trails)	each	$126	17	$2,146	$0		$0		$0	$2,146
L2- Weed Treatment (2007)	days	$250	20	$5,000	$0		$0		$0	$5,000
L3- Archaelogical Survey	days	$300	5	$1,500	$0		$0		$0	$1,500
L4- Install Safety Info. Boards	each	$620	6	$3,720	$0		$0		$0	$3,720
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Land Treatments				$19,116	$0		$0		$0	$19,116
B. Channel Treatments										
C1- Assessment	each	$10,000	3	$30,000	$0		$0		$0	$30,000
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Channel Treat.				$30,000	$0		$0		$0	$30,000
C. Road and Trails										
R1- Box Culvert/Arch Structure	each	$135,000	3	$405,000	$0		$0		$0	$405,000
R2- Upsize Culverts	each	$7,000	5	$35,000	$0		$0		$0	$35,000
R3- Armor Drain Dips	each	$1,500	10	$15,000	$0		$0		$0	$15,000
R4- Construct Waterbars	each	$500	40	$20,000	$0		$0		$0	$20,000
R5- Manage Road Water	miles	$2,500	11	$27,500	$0		$0		$0	$27,500
R6- Storm Patrol	days	$325	10	$3,250	$0		$0		$0	$3,250
R7- Construct Rock Fords	each	$2,665	10	$26,650	$0		$0		$0	$26,650
T1- Improve Trail Drainage	miles	$2,500	2.35	$5,875	$0		$0		$0	$5,875
T2- Log out Trail	miles	$900	2.35	$2,115	$0		$0		$0	$2,115
PR1-Box CMP/Arch 1018990	each	$150,000			$0		$0	1	$150,000	$150,000
PR2-Box CMP/Arch	each	$135,000			$0		$0	4	$540,000	$540,000
PR2-Box CMP/Arch (Hwy 20)	each	$250,000					$0	1	$250,000	$250,000
PR3- Armor Drain Dips	each	$1,500			$0		$0	5	$7,500	$7,500
PR4- Storm Patrol	days	$325			$0		$0	5	$1,625	$1,625
PR5- Construct Rock Fords	each	$2,665			$0		$0	2	$5,330	$5,330
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Road & Trails				$540,390	$0		$0		$954,455	$1,494,845
D. Protection/Safety										
See L1 and L5 above				$0	$0		$0		$0	$0
See R1,PR1, PR2 above				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Structures				$0	$0		$0		$0	$0
E. BAER Evaluation										
Personnel, vehicles	each	$16,500	1		$16,500		$0		$0	$16,500
Insert new items above this line!				---	$0		$0		$0	$0
Subtotal Evaluation				$0	$16,500		$0		$0	$16,500
F. Monitoring										
M1- Monitor L2	days	$325	4	$1,300	$0		$0		$0	$1,300
M2 - Monitor L3	days	$325	4	$1,300	$0		$0		$0	$1,300
M3 - Monitor R1 & PR1	days	$325	6	$1,950	$0		$0		$0	$1,950
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Monitoring				$4,550	$0		$0		$0	$4,550
G. Totals				**$594,056**	$16,500		**$0**		**$954,455**	**$1,565,011**
Previously approved										
Total for this request										**$1,565,011**

PART VII - APPROVALS

1. _____ _____
Forest Supervisor (signature) Date

2. _____ _____
Regional Forester (signature) Date