

R. Miles of Stream Channels by Order or Class:

Class I: 4.40 mi, Class II: 0.48 mi, Class III: 32.13 mi, Class IV: 6.21 mi

S. Transportation System

Trails: **31.44 miles**

Roads: **26 miles**

PART III - WATERSHED CONDITION

A. Burn Severity (acres): **15,336** (low) **4,094** (moderate) **346 ac.**(high)

B. Water-Repellent Soil (acres): **Not Estimated** Road and Protection Treatments are not based on increased water repellency and runoff. The low estimate of High Burn Severity indicates debris, not sediment (except from road cut and fillslope erosion) will obstruct road drainages.

C. Soil Erosion Hazard Rating (acres):

9690 (low) **9492** (moderate) **593** (high)

D. Erosion Potential: **39 tons/acre**

E. Sediment Potential: **989 cubic yards / square mile**

PART IV - HYDROLOGIC DESIGN FACTORS

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

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

C. Equivalent Design Recurrence Interval, (years): **25**

D. Design Storm Duration, (hours): **24**

E. Design Storm Magnitude, (inches): **2.3**

F. Design Flow, (cubic feet / second/ square mile): **115**

G. Estimated Reduction in Infiltration, (percent): **25**

H. Adjusted Design Flow, (cfs per square mile): **144**

PART V - SUMMARY OF ANALYSIS

A. Describe Critical Values/Resources and Threats:

TRANSPORTATION INFRASTRUCTURE – There are approximately 26 road miles within the Rattle Fire perimeter including 2.5 miles of Highway 138. The high and moderate burned areas have already delivered soil, rock and burned woody debris to drainage ditches and road surfaces. Even ordinary winter runoff will exceed the capacity of many ditches and culverts that become blocked by wildfire debris. Water that is diverted from stream channels can cause erosion, fill failures and landslides. The cost of repairing crossings, fills and driving surfaces could be high. About 2/3 of the Rattle Fire burned in the Boulder Creek Wilderness. The transportation infrastructure threatened by wildfire is outside designated wilderness lands.

The 2008 Rattle Fire burned much of the same acreage affected by the 1996 Spring Fire. The reburn of standing and down trees from 1996 created additional threats to the road drainage. Note: There are relatively few acres (346) of High burn severity estimated by the Burned Area Reflectance Classification satellite imagery during the only acceptable (cloud and smokeless) LANDSAT image 9/23/2008. Some unknown portion of the Moderate and High burn severity acre may contribute some sediment to the road drainage system, but treatment recommendations are based on expected floatable organic debris delivery. Professional judgement and the team's experience in this landscape with the 1996 Spring fire led us to expect low sediment delivery, and no Land Treatments were recommended. Road Treatments focused on road drainage pathways. The team did not improve the preliminary burn severity map, or estimate increased runoff from water repellent soils.

B. Emergency Treatment Objectives:

PUBLIC AND FOREST SERVICE HEALTH AND SAFETY – Provide safe access for the public and Forest Service personnel on essential routes through the area especially contractually required locations. Provide safe access to Forest Service employees to prevent failure and maintain roads during BAER treatments and storm patrols.

TRANSPORTATION INFRASTRUCTURE – Reduce the loss of road crossings and fills from winter runoff, by preventing drainage system failure with culvert cleanout, ditch cleanout, waterbarring and storm patrols. The cost to prevent the loss of crossings and fills, driving surfaces, and downstream water quality is much less than the cost of repairing roads.

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

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

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land			
Channel			
Roads/Trails	80%	90%	100%
Protection/Safety	95%	95%	90%

E. Cost of No-Action (Including Loss):_ \$1,060,000

F. Cost of Selected Alternative (Including Loss): \$311,000

G. Skills Represented on Burned-Area Survey Team:

<input checked="" type="checkbox"/> Hydrology	<input checked="" type="checkbox"/> Soils	<input type="checkbox"/> Geology	<input type="checkbox"/> Range	<input type="checkbox"/>
<input type="checkbox"/> Forestry	<input 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 type="checkbox"/> GIS	

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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.)

Land Treatments: - Invasive Weed Detection Surveys - Assessment to determine if invasive (noxious) weed treatments are needed. A monitoring or assessment plan is attached to this request. The forest will complete the surveys and submit an interim request for any needed treatments plus effectiveness monitoring based on what the surveys show. Areas that will need to be surveyed (83 miles) include: roads, trails leading into the wilderness, areas of impact such as staging areas, drop points, safety zones, containment lines, and any area where material (rock, soil etc.) is brought in.

Channel Treatments: none

Roads and Trail Treatments: - Road drainage emergency treatments on essential roads including ditch and drainage structure cleanout (21 miles); road closure and waterbarring (2.6 miles), fill pull-back (0.6 miles); and emergency storm patrol of selected road segments that do not have treatment sites.

Two-person storm patrol teams will perform flood emergency road maintenance during an estimated four storm events. These actions are targeted at the emergency road situation made necessary by wildfire effects during the first winter, and are above the ordinary road maintenance requirements on the 26 miles of roads located within fireline boundaries.

Implementation costs are built into line item treatment costs.

Protection/Safety Treatments: Three roads which have been determined as high risk to public safety will gated (4775, 3810 and 4760-105). There will also be hazard tree removal (22.5 miles) for emergency rehabilitation work; signing of road hazards and closures (9 sites), and closure signing at fourteen locations.

- I. Monitoring Narrative:** - Invasive (noxious) Weeds Assessment - Areas of known infestations and areas where new infestations may have been introduced should be monitored for at least three years after the fire, starting with the first summer after the fire. The procedures and costs for summer 2009 are in the attached monitoring plan. Previously known infestations will be monitored to see if existing infestations are increasing as a result of the fire. Early detection of new sites greatly facilitates effective treatment of sites and dramatically decreases treatment costs. Areas that will need to be surveyed (83 miles) include: roads, trails leading into the wilderness, areas of impact such as staging areas, drop points, safety zones, containment lines, and any area where material (rock, soil etc.) is brought in.

Part VI – Emergency Stabilization Treatments and Source of Funds

Interim #

			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											
Invasive Weed Assessment		42.25	83	\$3,507	\$0			\$0		\$0	\$3,507
				\$0	\$0			\$0		\$0	\$0
				\$0	\$0			\$0		\$0	\$0
Insert new items above this line!				\$0	\$0			\$0		\$0	\$0
Subtotal Land Treatments				\$3,507	\$0			\$0		\$0	\$3,507
B. Channel Treatments											
				\$0	\$0			\$0		\$0	\$0
Insert new items above this line!				\$0	\$0			\$0		\$0	\$0
Subtotal Channel Treat.				\$0	\$0			\$0		\$0	\$0
C. Road and Trails											
Close and Waterbar Roads	Miles	600	2.6	\$1,560	\$0			\$0		\$0	\$1,560
Fill Pullback	Excavator -Hours	80	85	\$6,800	\$0			\$0		\$0	\$6,800
Ditch and Drainage Structures	Miles	150	21	\$3,150	\$0			\$0		\$0	\$3,150
Subtotal Road & Trails				\$11,510	\$0			\$0		\$0	\$11,510
D. Protection/Safety											
Snag along Rds Treatment	Miles	2800	22.5	\$63,000	\$0			\$0		\$0	\$63,000
Emergency Road Patrol	Event	1925	4	\$7,700	\$0			\$0		\$0	\$7,700
Install Gates	Each	3342	5	\$16,710	\$0			\$0		\$0	\$16,710
Road Signs - Installation only needed	Each	50	9	\$450	\$0			\$0		\$0	\$450
Trail Signs	Each	125	14	\$1,750	\$0			\$0		\$0	\$1,750
Insert new items above this line!				\$0	\$0			\$0		\$0	\$0
Subtotal Structures				\$89,610	\$0			\$0		\$0	\$89,610
E. BAER Evaluation											
Assessment Team	days	329	58	\$19,035				\$0		\$0	\$0
Insert new items above this line!				---	\$0			\$0		\$0	\$0
Subtotal Evaluation				---	\$0			\$0		\$0	\$0
F. Monitoring											
				\$0	\$0			\$0		\$0	\$0
Insert new items above this line!				\$0	\$0			\$0		\$0	\$0
Subtotal Monitoring				\$0	\$0			\$0		\$0	\$0
G. Totals				\$104,627	\$0			\$0		\$0	\$104,627
Previously approved											
Total for this request				\$104,627							

PART VII - APPROVALS

1.

Forest Supervisor (signature)

Date
2.

Regional Forester (signature)

Date

Rattle Fire

BAER Noxious Weed Treatment, Prevention, & Monitoring Plan

Monitoring and Early Treatment:

Areas of known infestations and areas where new infestations may have been introduced should be monitored for at least three years after the fire, starting with the first summer after the fire. Early detection of new sites greatly facilitates effective treatment of sites and dramatically decreases treatment costs.

Known infestations – Previously known infestations will be monitored to see if existing infestations are increasing as a result of the fire. Existing infestations within the fire perimeter that are of principle concern include:

Meadow and Diffuse knapweed along major roads
Scotch broom on the 4775, 4775-011, 4775-545, and 4760 roads
Himalaya blackberry along Hwy 138 and 4775-011

Other noxious weeds that are likely within the fire perimeter that we don't currently have inventoried include: Canada thistle, bull thistle, St. Johnswort and medusahead rye.

Sources for introduction of noxious weeds – Among the noxious weeds in the immediate vicinity of the fire are spotted knapweed, rush skeletonweed, and medusa head rye. There are additional noxious weed species in the County that could easily have been transported on fire vehicles and equipment into this area. These species include: wooly distaff thistle, yellow starthistle, and purple loosestrife.

Monitoring Methods – Areas that will need to be surveyed include: roads, trails leading into the wilderness, areas of impact such as staging areas, drop points, safety zones, containment lines, and any area where material (rock, soil etc.) is brought in. Noxious weed locations will be mapped with a GPS unit and information about the infestations (weed species present, size of population, estimated number of plants, *etc.*) will be documented. Survey will occur in the summer. Most areas will be surveyed twice during the season. The first Survey will document sites and provide data for any treatment that would have to occur at site, beyond hand-pulling of infestations which would normally occur concomitant with survey. The second survey will locate plants that were missed or have bolted since the initial survey. Survey is anticipated to be needed for at least three years.

First Year Monitoring Costs:

Rattle Fire	Road Miles	Miles/Day	Cost/Day	Visits/Season	Total
Open road survey	48	20	\$184	2	\$1104.00
Closed road survey	35	5	\$184	1	\$1288.00
Analysis and assessment	N/A	N/A	\$184	3 days	\$552.00

	Cost/Month	Months	Mileage Rate	Mileage	
Vehicle expenses	\$277.00	1	\$0.28/mi	1022	\$563.00

Total	\$3,507.00
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