USDA-FOREST SERVICE FS-2500-8
Date of Report: 8/12/2018

WHALEBACK FIRE 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

[X] 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)

PART II - BURNED-AREA DESCRIPTION

A. Fire Name: Whaleback Fire

B. Fire Number: CA-LNF-003951

C. State: California

D. County: Lassen

E. Region: 5

F. Forest: Lassen National Forest

G. District: Eagle Lake

H. Fire Incident Job code: P5L1VS18 0506

I. Date Fire Started: July 27, 2018

J. Date Fire Contained: 100% as of 8/08/2018

K. Suppression Cost: Approximately 8.9 million as of 8/6/2018, with anticipated costs around 10.5 million

L. Fire Suppression Damages Repaired with Suppression Funds

1. Fireline waterbarred (miles): 64 miles of dozer lines, 0.1 miles of handline
2. Fireline seeded (miles): 0
3. Other (identify):

M. Watershed Numbers and Names:

HUC 12 Watershed Name	HUC 12 Watershed Number	Acres
Antelope Valley-Pine Creek	180800030301	6,733
Brockman Flat Lava Beds-Frontal Eagle Lake	180800030306	11,804
Eagle Lake	180800030307	49
Houseman Camp Reservoir-Frontal Eagle Lake	180800030302	117

N. Total Acres Burned: 18,703 (NFS- 18,183; County- 3; Private -476)

O. Vegetation Types:

Vegetation types in the Whaleback fire burn perimeter are predominantly sagebrush (51%), eastside pine (21%), and Sierra mixed conifer (10%). Various annual and perennial grasslands, and wet meadows and springs occur in the burn perimeter. The overstory vegetation is primarily composed of ponderosa pine (*Pinus ponderosa*), Jeffrey pine (*P. jeffreyi*), sugar pine (*P. lambertiana*), white fir (*Abies concolor*) and incense cedar (*Calocedrus decurrens*). There is a large mountain mahogany (*Cercocarpus ledifolius*) component on Brockman Flat and a western juniper (*Juniperus occidentalis*) component associated with sagebrush communities.

P. Dominant Soil Types:

Map Unit #	Dominant Map Units > 100 acres	Dominant Soil Texture	Acres	Percent
56	Lithic Haploxerolls-Rock Outcrop-Trojan family association, 0-15 % slopes	Very gravelly sandy loam	8,529	46%
33	Inville-Patio-Trojan families association, 0-35 % slopes	Bouldery sandy loam	3,284	18%
34	Inville-Patio-Trojan families association, 35-50 % slopes	Bouldery sandy loam	2,723	15%
110	Trojan family-Lithic Haploxerolls-Rouen family association, 0-15 % slopes	Loam	1,309	7%
57	Lithic Haploxerolls-Rouen family-Rock Outcrop association, 0- 15 % slopes	Very gravelly sandy loam	1,066	6%
185	Eaglelake-Outland-Weste complex, 9-30 % slopes	Very gravelly loam	428	2%
121	Wintoner family-Aquolls-Patio family association, 0-15 % slopes	Gravelly sandy loam	365	2%
343	Rubble land-Fiddler association, 15-50 % slopes	Fragmental material	296	2%
353	Said-Ninemile association, 2-30 % slopes	Gravelly loam	228	1%
345	Rubble land-Rock outcrop complex, 30-70 percent slopes	Fragmental material	176	1%
48	Klicker-Patio families complex, 15-70 % slopes	Very stony loam	123	1%

Q. Geologic Types:

The fire perimeter is located at the convergence of the southern Modoc Plateau and the southeastern extent of the Cascade Range. Units are primarily volcanic, ranging from andesite to basalt in composition. The western, more mountainous third of the fire, consists of late Pliocene mafic andesite on Whaleback Mountain. About 56% of the flatter eastern portion of the fire is comprised of younger basalt flows in Brockman Flat, dated at between 125,000-130,000 years in age. Pleistocene and Holocene lacustrine deposits are located near the western shore of Eagle Lake, making up 12% of the fire footprint. Other surficial deposits include talus on slopes and valley alluvium. A series of several northward-trending normal faults also occur in the Whaleback Mountain area.

R. Miles of Stream Channels (with Fire perimeter) by Order or Class:

0 miles of perennial streams, 5 miles of intermittent streams and ephemeral streams.

S. Transportation System:

Roads: 67 miles
Motorized Trails: 1.9 miles
Non-Motorized Trails: 0 miles

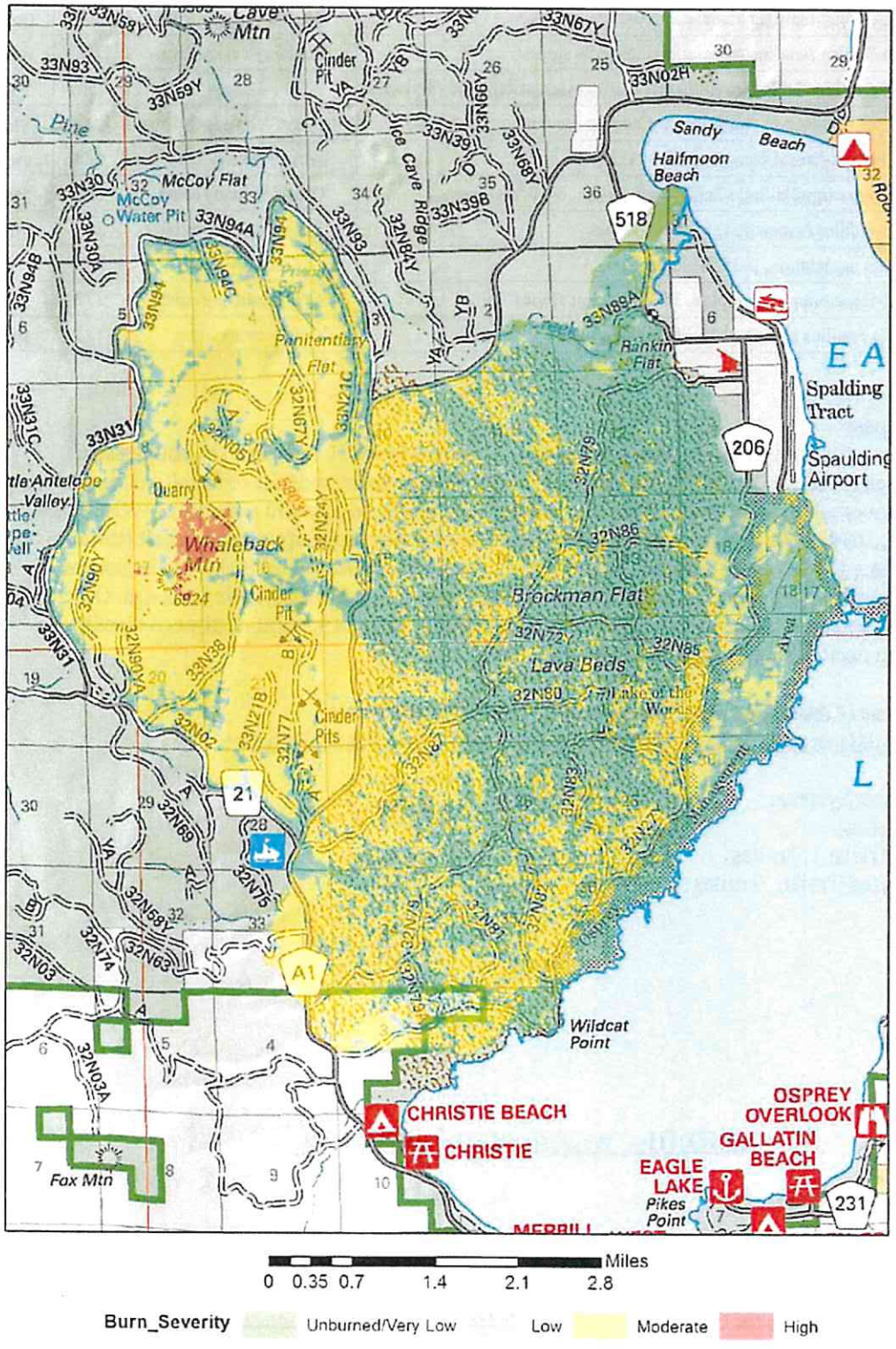
Maintenance Level	Miles
1	7.4
2	49.3
3	8.1
4	2.3
Total	67.1

PART III - WATERSHED CONDITION

A. Burn Severity (acres):

Soil Burn Severity Acre				
Unburned	Low	Moderate	High	Total
472 (2.5%)	9,730 (52%)	8,407 (45%)	93 (0.5)	18,703

Whaleback SBS BAER Map



B. Water-Repellent Soil (acres): 950 acres. Strong but discontinuous water repellency was observed in manzanita-dominated areas on Whaleback Mountain at 1-inch soil depth. The e-veg layer names this vegetation "montane chaparral" and estimates 950-acres within the fire footprint.

C. Soil Erosion Hazard Rating (acres):

Erosion Rating	Acres	Percent
Very Severe	0	0%
Severe	2,289	12%
Moderate	4,542	24%
Low	11,871	63%

D. Erosion Potential: Using the estimated erosion potential for the nearby 2014 Eiler Fire, which occurred on similar terrain and geology, sediment production is estimated at 2 tons per acre for a 5 year runoff event. The 950 acres of strongly hydrophobic soil would likely be higher, 3 tons per acre. These rates pertain to the mountainous portion of the fire only. Brockman flat would be much lower. Post-fire monitoring on the Eiler Fire footprint found no significant soil movement off of hillsides on basalt and andesitic parent materials.

E. Sediment Potential: Given the lack of stream channels and low background runoff rates from the watersheds within the Fire footprint, it can be assumed that deep percolation through the fractured volcanic rock is a major component of outflow. It is roughly estimated that 20% of the sediment estimates above could be delivered to the fluvial system until hydrophobicity diminishes and soil cover is replenished.

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):	2
D. Design Storm Duration, (hours):	6
E. Design Storm Magnitude, (inches):	0.80
F. Design Flow, (cubic feet / second/ square mile):	4.5
G. Estimated Reduction in Infiltration, (percent):	15%
H. Adjusted Design Flow, (cubic feet / second/ square mile):	8.8

PART V - SUMMARY OF ANALYSIS

A. Describe Critical Values/Resources and Threats

Background:
The Whaleback Fire started July 27, 2018 and burned a total of 18,703 acres in the Brockman Flat Lava Beds, and Whaleback Mountain. The fire approached approximately 6.6 miles of Eagle Lake shore line. Developed camping facilities along the lake were not impacted by the fire, however, electrical power delivery to Spaulding Tract was impaired. The Whaleback Fire did not enter into Spaulding Tract. The cause of the fire is under investigation. Approximately 97% of the Whaleback Fire was on lands administered by the Lassen National Forest. Less than 1% of the fire burned under high soil burn severity, 45% moderate, 52% low and 2.5% unburned.

Critical values at high or very high risk identified include threats to life and safety across the burned area, impacts to the road system near Whaleback Mountain, the recovery of native plant communities, and cultural site degradation.

Values at Risk Matrix:
The values at risk (VAR) matrix displayed in Appendix A summarizes values at risk, post wildfire threats and risk ratings. Values with high or very high risk ratings are addressed, where possible, with BAER response actions (treatments). Generally, response actions are not recommended for values with low and intermediate risk ratings. The level of risk was assessed by using the matrix below which accounts for the probability of an event occurring and the magnitude of consequences if it occurred.

The risk matrix, Exhibit 2 of Interim Directive No.: **2520-2010-1** was used to evaluate the Risk Level for each value identified during Assessment:

Probability of Damage or Loss	Magnitude of Consequences		
	Major	Moderate	Minor
	RISK		
Very Likely	Very High	Very High	Low
Likely	Very High	High	Low
Possible	High	Intermediate	Low
Unlikely	Intermediate	Low	Very Low

Summary of Whaleback Fire BAER Values at Risk:
Based on field observations and assessment of burned watershed conditions and expected responses the BAER team evaluated the potential for post wildfire impacts on the following BAER values at risk:

Human Life and Safety:

- Forest Visitors Safety:
  The BAER team identified increased risk for potential impacts to life and/or safety of Forest visitors and personnel entering the burned area. There is the **possibility** that a visitor could be injured inside of the burn area. Potential threats include down transmission lines, rolling rocks, flooding, debris flows and/or landslides, sediment or debris delivery, hazardous trees, and loss of ingress/egress. Generally, increased risk occurs within or directly down-slope from high and moderate burn severity areas. The consequence of an injury is **major**, resulting in a **high** risk of injury. In particular, Forest Road 33N38 traverses through a previously forested area that resulted in moderate and high soil burn severity. The high density of hazard trees results in a **likely** probability of injury on this road, with **major** consequences. As such, this risk of this road is **very high**.

  BAER funds are requested to treat these risks.

Property

- USFS System Roads:
  Approximately, 12.5 miles of maintenance Level 2 roads are **likely** to be impacted by increased runoff and the movement of sediment into road drainage features, such as culvert inlets, over side drains, roadway dips and runouts. These conditions exist on portions of Forest system roads 32N05Y, 32N24Y, 32N77, 32N77A&B, 32N90Y, 32N90YA, 33N21B, 33N21C, 33N38, and 33N94C. The magnitude of this event occurring is considered **moderate**, as post-fire processes would result in a **high** risk of road damage to the invested road improvements.

  Likewise, Forest Road 33N21B is contained within moderate burn severity, and has a high gradient at the top of the road. Road drainage features along the road are insufficient to catch anticipated water flows, resulting in a **likely** probably of road failure and a **moderate** magnitude of consequences related to road repair and public access. As such, this road is **high** risk to post-fire related processes.

  BAER funds are requested to treat these risks.

- Campgrounds:
  There are no developed campgrounds in or around the fire area at risk from post-fire watershed events or snag hazards.

- Private Property:
  There are no post-fire watershed processes that place the community of Spalding Tract at risk. Fire did not occur within the Tract and slopes around the Tract within the burn area are relatively flat. Extensive inventory of structures and other values on private land is the responsibility of the landowners with assistance available from NRCS.

Natural Resources

- Lava Tubes:
  Sedimentation of the lava caves in the burn area is **possible** due to vegetation loss around cave entrances. Likewise, the trail leading to the tubes is more prevalent after the fire, than before the fire. As a result, it is possible that increased public use and sedimentation may slightly (**minor**) degrade these unique resources, resulting in **low** risk. No emergency stabilization treatments are recommended.

- Native or Naturalized Plant Communities:
  There is an emergency related to native vegetation recovery and diversity due to the **likely** introduction and expansion of non-native invasive weeds on at least 80 acres within the burned area and 116 acres that were impacted by suppression related activities outside the fire perimeter. The Whaleback Fire provided conditions conducive to the establishment and rapid spread of weeds known to be within and adjacent to the fire area. In addition, suppression activities have likely vectored weed seeds into the area, or spread them further through the burned area. Mechanized equipment was not cleaned prior to line construction for the first three days of fire suppression efforts. Weeds that become established in these disturbed areas would have a **moderate** effect to native plant community recovery. As a result, there is a **high** risk of considerable or long-term effects to native vegetation and native species diversity, and a reduction in the rate of native vegetation recovery.

  BAER funds are requested to treat this risk.

- Soil Productivity, Hydrologic Function, and Stream and Lake Water Quality:
  A little less than half (46%) of the Whaleback Fire is comprised of mostly moderate (with a small percentage of high) soil burn severity. As a result, modelling indicated at least some increases in post-fire runoff for most of the analyzed 6th (HUC-12) and 7th field watersheds. Of the four HUC-12 subwatersheds modelled, two showed marked increases in runoff potential over 100%; these are Antelope Valley-Pine Creek (171% increase) and Brockman Flat Lava Beds-Frontal Eagle Lake (174%). Due to the amount of moderate burn severity, which includes large areas now devoid of vegetation and groundcover, it is likely that there will be increased surface flow with the first winter and spring runoff events. It is also possible there could be a flood event with high sediment volumes. The highest amounts of sediment yields from the burned watersheds are expected during the first year after the fire. However, it should be noted, that the overall scarcity of defined channels, lack of surface connectivity and intermittent nature of drainages within and immediately downstream of the burn area, and likely timing of runoff-producing events in the winter and spring when hydrophobicity has been reduced decrease the probability of significant flooding events occurring post-fire, and the regression modeling likely overestimates the amount of increased runoff to be expected in this area.

  Degraded water quality within lower Pine Creek at its confluence with Eagle Lake is **likely** as the result of nutrients from the burn area immediately adjacent to Pine Creek, however, this event would be **minor** and localized, and thus there is a **low** risk of significantly degraded water quality. Likewise, altered hydrologic function is **possible** as a result of increased runoff from the Whaleback Fire, it is expected that the magnitude of consequences for this would be **minor** due to the lack of stream channels and connectivity of drainages, and low gradient, stable, bedrock channel of Pine Creek downstream of the fire perimeter, and thus the area is at **low** risk for altered hydrologic function. No emergency stabilization treatments are recommended.

- Federally Listed Species:
  There are no federally listed fish, wildlife, or aquatic species in or immediately downstream of the fire that would be affected by post-fire watershed changes.

- Sensitive Species:
  Habitat degradation to the Eagle Lake trout spawning grounds and the Osprey Management Area is **possible**, however the consequences to sensitive species would be short-term and isolated (**minor**), resulting in **low** risk of habitat degradation from post-fire processes. No emergency stabilization treatments are recommended.

Cultural Resources

Values at risk relating to Cultural Resources include diminishing the National Register of Historic Places (NRHP) values of sites eligible for, or potentially eligible for, listing on the NRHP. The Whaleback Fire occurred on NFS lands where previously recorded sites that have not been evaluated for NRHP eligibility were located. Sites which have not been formally evaluated must be considered as potentially eligible until a formal determination has been made. Areas within sites which have been denuded by vegetation due to the fire have exposed artifact concentrations and features previously obscured from view, which can be subjected to an increase risk of looting and vandalism. One NRHP eligible site that had low to moderate burn severity through the site is located in close proximity to a well-traveled road. The Probability of Damage or Loss is considered **Possible** to **Likely** and the Magnitude of Consequences is **Moderate**, given the loss of these resources would diminish the site's NRHP values. The combination of these elements results from in a risk assessment of **Intermediate** to **High**.

BAER funds are requested to treat this risk.

B. Emergency Treatment Objectives:
To inform the public of the hazards of entering a burned area, To allow safe passage of water to protect road infrastructures, watersheds, and cultural sites, from accelerated sheet and rill erosion. Also, to protect watersheds from the spread of noxious weeds. Risk determination is dependent on the design storm selected and downstream values at risk. By using a set of average storms (2, 5, and 10-year events) emergency planning measures can be designed to mitigate and minumize anticipated risks. Using a 2-year design storm the values at risk can be evaluated to see how sensitive the watershed is and to determine if an emergency exists for a typical winter storm.

C. Probabilty of Completing Treatment Prior to First Major Damage-Producing Storm:
Land: N/A Weed surveys are conducted in the Spring following the Fire.
Channel: N/A
Roads: 90 %
Protection/Safety: 90 %

D. Probability of Treatment Success:

	Years after Treatment		
	1	3	5
Land	90%	85%	80%
Channel	n/a	n/a	n/a
Roads/Trails	95%	90%	85%
Protection/Safety	95%	90%	85%

E. Cost of No-Action (Including Loss): Cost of No Action could exceed $1,302,400.

F.Cost of Selected Alternative (Including Loss): Cost of selected alternative is $64,588.

G. Skills Represented on Burned-Area Survey Team:

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

Team Lead: Kendal Young Email: kendalyoung@fs.fed.us Phone (209) 283-4008

Whaleback BAER Assessment Team				
Name	**Home Forest**	**Function**	**Phone**	**Email**
Kendal Young	Eldorado	Team Lead	209-283-4008	kendalyoung@fs.fed.us
Todd Orange	Lassen	Engineering	530-388-8265	torange@fs.fed.us
Craig Hemping	Lassen	Fisheries	208-640-5425	chemping@fs.fed.us
Elaine Elliott	Lassen	GIS	530-321-2092	eelliott@fs.fed.us
Lindsay Grayson	Lassen	GIS - T	859-760-8825	lgrayson@fs.fed.us
Tyanna Blaschak	Lassen	Hydrology	714-244-7853	tsblaschak@fs.fed.us
Doug Peters	Lassen	Soils	661-246-9723	dwpeters@fs.fed.us
Tim Kellison	Humboldt-Toiyabe	Botany	775-430-0095	tkellison@fs.fed.us
Doreen Hrivank	Six Rivers	Archeology	530-966-4048	dhrivnak@fs.fed.us
Suzi Frye	Modoc	Archeology	530-640-2533	sfrye@fs.fed.us

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.)

Human Life and Safety:

Forest Visitors Safety:

The proposed installation of gates on Forest Road 33N38 with closed road signs, signs placed at burn perimeter, key hazardous areas, and access routes to warn forest visitors of the hazards within the burn area will lower the probability that life and/or safety would be impacted by post wildfire processes. A total of 19 signs are proposed to mitigate this emergency situation.

Treatment Costs:

Road	Treatment	Unit	Quantity	Unit Cost	Estimate
33N38	Road Closed Signs	ea	2	$300	$600
33N38	Gates (near quarry and 32N02)	ea	2	$4,000	$8,000
Key access routes throughout Burn Area	Hazard Warning Signs	ea	15	$300	$4,500
County Road A1	Entering Burn Area Signs	ea	2	$500	$1,000
Total					$14,100

Cost/Benefit Analysis: Human Life and Safety do not have a market value, but an injury would exceed $1,000,000, providing at least a 26% benefit/cost ratio.

Property - Road Treatments:

It is recognized that BAER is not intended to correct past maintenance deficiencies. The changed conditions due to fire activity has created an urgency for correction and storm proofing of some of these drainage features on segments along the road.

Post-Storm Inspection and Response: There are approximately 21.8 miles of Maintenance Level 2 roads intersecting moderate soil burn severity. Of those, approximately 12.5 miles had an expected post-fire increase in runoff (see Hydrology Report), and/or had high burn severity above the road, or steep grades. These roads would receive post-storm inspection and response surveys to lower the probability of property damage to the road system by post wildfire processes.

Maintenance level 2 roads in Moderate SBS that warrant post-storm inspection and response surveys.

Road Number	Soil Burn Severity		Total Road Miles in Burned Area	% of Road in Mod. SBS	Treatment Rationale
	Very Low /Low	Moderate			
32N05Y	0.09	1.29	1.38	93	High burn severity above road, 3 times increase in runoff
32N24Y	0.49	1.73	2.22	78	2.6 times increase in runoff; steep slopes, rock fall
32N77	0.64	1.20	1.84	65	2.6 times increase in runoff, Cinder pits at end of road
32N77A	0.11	0.10	0.21	46	High burn severity patches near road, 2.6 times increase in runoff
32N77B	0.00	0.27	0.27	100	2.6 times increase in runoff, Cinder pits at end of road
32N90Y	0.18	1.18	1.35	87	High burn severity above road, 2.2 times increase in runoff
32N90YA	0.19	0.37	0.55	66	High burn severity above road, 2.2 times increase in runoff
33N21B	0.15	1.36	1.51	90	2.2 times increase in runoff; Rolling Dips, Outlet drainages
33N21C	1.56	0.65	2.21	30	2.1 times increase in runoff
33N38	1.06	4.23	5.29	80	High burn severity above road, 2.2-3 times increase in runoff
33N94C	0.44	0.09	0.53	17	High burn severity above road, 3 times increase in runoff
Total	**4.90**	**12.47**	**17.36**	**72**	

Drainage Feature Reconstruction: Six rolling dips and six outlet drainages would be reconstructed on Forest road 33N21B (approximately 1.5 miles) would be reconstructed. Reconstruction of existing rolling dips will reduce damage to the infrastructure. To minimize costs and continue to have high treatment success, outlet ditch cleaning is proposed instead of rolling dip reconstruction for the lower half of the road. The upper end of the road has a higher gradient than the lower section which makes the rolling dips at the top more critical. The value at risk is the 33N21B and is estimated at $75,500.

Treatment Costs:

Road	Treatment	Unit	Quantity	Unit cost	Estimate
33N21B	Reconstruct rolling dips	ea	6	$1,000	$6,000
33N21B	Clean outlet ditches	ea	6	$250	$1,500
Level 2 roads provided in table above.	post-storm inspection and response (12.5 mi)	2 people per week	3	$3,849	$11,547
Contract prep, administration, implementation, equipment mobilization			1	$14,000	$14,000
Total					$33,047

Approximately 12.5 miles of road treatments are proposed. Average cost per mile for reconstructing rolling dips and outlet ditches, including equipment transport = 657.58 per mile. Average cost for post post-storm inspection and response = 1166 per mile.

Cost/Benefit Analysis: The average road value/mile is estimated at $50,000. The 12.5 miles of Maintenance Level 2 roads at risk have an approximate value of $623,500. The probability of loss without treatments is approximately 50%, with a probability of loss with treatments of 10%. As such benefits of the treatment are $249,400 for a 7.5 benefit/cost ratio.

Road Number	Miles Treated	Estimate Cost per Road
32N05Y	1.29	$ 1,195
32N24Y	1.73	$1,602
32N77	1.20	$1,111
32N77A	0.10	$93
32N77B	0.27	$250
32N90Y	1.18	$1,093
32N90YA	0.37	$343
33N21B*	1.36	$17,359
33N21C	0.65	$ 602
33N38	4.23	$3,917
33N94C	0.09	$83
Total	12.47	
*Estimate includes drainage feature reconstruction		

Channel Treatments: None

Land Treatments:

Noxious Weed Early Detection and Rapid Response (EDRR)

This BAER emergency can be mitigated by detecting and treating new occurrences of noxious weeds and controlling known infestations to limit the spread of weed species that may be exacerbated by fire and/or fire suppression activities. During the first year after the fire, the high risk areas will likely lag in the recovery of their native plant communities with reductions in both native plant cover and diversity. However, the early detection and rapid response (EDRR) of noxious weeds can mitigate these fire effects if this weed detection and removal method is implemented aggressively within the first year post-fire.

EDRR treatments for noxious weeds would be completed in locations determined to be High risk areas, which represent dozer lines, mechanical equipment concentration areas, and moderate to high severity fire near areas disturbed by suppression activities or near known noxious weed locations. EDRR is a strategy developed to increase efficiency of weed work by combining surveying, mapping and immediate treatment of new weed infestations as they are discovered.

High Priority Areas - EDRR treatments for noxious weeds would primarily occur within locations within the fire perimeter, where equipment operated (i.e. dozer lines), near known infestations, and around areas where equipment intercepted weed infestations. EDRR treatments would focus on approximately 80 acres within the fire boundary (approx. 9.7 miles). These areas have the highest potential for detrimental effects to native plant communities from noxious weed invasion.

Priority Areas Outside Fire Perimeter – EDRR treatments for noxious weeds would occur in these areas after surveys within the High Priority Areas have been completed. These EDRR treatments would only occur in locations where suppression activities directly created an opening/disturbance that facilitates the introduction or expansion of invasive plants into areas where they were not present prior to the disturbance. These areas include dozer lines, drop points, helispots and staging areas on approximately 116 acres (approx. 14.3 miles).

Within both of the above priority areas, weed detection surveys would be conducted in the spring (or as soon as the weed species are identifiable) of the first year post-fire to detect and control early-season noxious weeds and/or in the summer to detect and control late-season noxious weeds. Large weed infestations that cannot be immediately removed during their detection will be mapped with a Global Positioning Systems (GPS) unit, photographed and flagged. New or isolated infestations would be manually removed during detection surveys. For most noxious weeds that are likely to occur within the fire area, hand pulling would consist of digging up individual plants, pulling them up by the roots and, if flowers or seed heads/fruits are present, bagging entire plants for proper disposal.

Treatment Costs: The total treatment cost to mitigate the emergency is $9,000.

High Priority Treatments within Fire Perimeter – ERDD - BAER

Item	Unit	Unit Cost	# of Units	Cost
GS-4 Technician	day	$125	6	$750
GS-4 Technician	day	$125	6	$750
GS-9 Crew Leader –planning & implementation	day	$300	3	$900
GS-11 Botanist - coordination & reporting	day	$400	4	$1,600
Vehicle Mileage	mile	$0.50	500	$100
Total Cost for FY2019				**$4,100**

Priority Treatments outside Fire Perimeter – ERDD – Fire Suppression

Item	Unit	Unit Cost	# of Units	Cost
GS-4 Technician	day	$125	9	$1,125
GS-4 Technician	day	$125	9	$1,125
GS-9 Crew Leader –planning & implementation	day	$300	3	$900
GS-11 Botanist - coordination & reporting	day	$400	4	$1,600
Vehicle Mileage	mile	$0.50	300	$150
Total Cost for FY2019				**$4,900**

Cost/Benefit Analysis: Delaying or deferring treatment would result in the expansion of weeds at a high rate. Based on the Office of Technology Assessment (1993) assessment, the delaying or deferring treatment in the burned area could result in future costs exceeding $150,000 to achieve the same goals as spending $9,000 for treatments today. This estimate excludes the cost associated with National Environmental Policy Act (NEPA) analysis, which could exceed $300,000. Budget realities would likely limit future treatments making it imperative to prevent the likely expansion of weeds throughout the burned areas.

Cultural Resources

The proposed treatment to minimize the risk of cultural resource effects related to the Whaleback fire are to monitor the site monthly to check for looting, vandalism, and monitor the vegetation regrowth, which will help conceal the site feature and artifacts exposed by the fire.

Treatment Costs:

Item	Cost
Archaeologist (GS-9) @ $26.00/hour x 8 hours x 12 days =	$2,496
Mileage: 90 miles x $0.56/mile x 12 days =	$605
Total	$3,101

Cost/Benefit Analysis: Heritage resources do not have a market value. However, the cultural resource at risk is eligible, or potentially eligible, for listing on the National Register of Historic Places (NRHP). Delaying emergency treatment could permanently remove the cultural significance of this site.

Implementation Team Leadership and Coordination

Forest BAER Coordinator to ensure continued coordination with cooperating agencies, prompt implementation, tracking of BAER treatments, and installation of burn area warning signs. The facilitation may include: phone calls, meetings, and field trips to the affected areas.

While BAER treatments are exempted from National Environmental Protection Act (NEPA) analysis, they are not exempt from the procedural mandates of the National Historic Preservation Act of 1966, as amended (16 USC 470 [NHPA]). The Legal Obligations with in section 106 of NHPA include, but not exclusively, Tribal Consultation, SHPO Consultation and Section 106 surveys and documentation for other BAER treatments. Region 5 has a Programmatic Agreement with SHPO that helps to streamline and comply with the Section 106 process for all Federal Undertakings, to include BAER treatments

Coordination Costs:

Item	Unit	Cost/Unit	Number	Total
Coordination with Public & Private, GS-11	Day	356	5	$1,780
Section 108 Clearance for Emergency Treatments	Day	356	10	$3,560
Total				$5,340

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.)

Monitoring is not proposed.

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

r Service:

	NFS Lands					Other Lands				Money Left
ems	Units	Unit Cost	# of Units	BAER $	Spent $	# of Units	Fed $	# of Units	Non Fed $	Total $
eter- BAER	project	$4,100	1	$4,100	$0		$0		$0	$4,100
neter- Fire Suppression	project	$4,900	1	$4,900	$0		$0		$0	$4,900
				$9,000	$0		$0		$0	$9,000
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
	project	$3,849	3	$11,547	$0		$0		$0	$11,547
	project	$1,000	6	$6,000	$0		$0		$0	$6,000
	project	$250	6	$1,500	$0		$0		$0	$1,500
	project	$7,000	1	$7,000	$0		$0		$0	$7,000
	project	$7,000	1	$7,000	$0		$0		$0	$7,000
				$33,047	$0		$0		$0	$33,047
	ea	$300	15	$4,500	$0		$0		$0	$0
	ea	$500	2	$1,000	$0		$0		$0	$0
	ea	$4,000	2	$8,000	$0		$0		$0	$0
	project	$3,101	1	$3,101	$0		$0		$0	$0
	ea	$356	15	$5,340	$0		$0		$0	$0
	ea	$300	2	$600	$0		$0		$0	$0
				$22,541	$0		$0		$0	$22,541
	0520	H5BAER	---	---	$33,890	---	$0	---	$0	$0
	---	---	---	---	$0	---	$0	---	$0	$0
				---	$33,833	---	$0	---	$0	$0
	ea	$0	-	$0	$0		$0		$0	$0
	ea	$0	-	$0	$0		$0		$0	$0
	ea	$0	-	$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
				$64,588	**$0**		**$0**		**$0**	**$64,588**
						Comments				
				$64,588						

PART VII - APPROVALS

1. _____ 08/16/2018
Forest Supervisor (signature) Date

2. _____ 8/21/18
Regional Forester (signature) Date

Appendix A. Values at Risk Analysis Table

of Risk	Probability			Magnitude of Consequences			Risk			Treatment to Manage Potential Post Wildfire Impacts			
	Life	Property	Other	Life	Property	Other	Life	Property	Other	Life	Property	Other	Responsibility
azardous trees near	Likely			Major			Very High			Gate/Close Road, Signs			FS
azardous trees, rock n lava beds and	Possible			Major			High			Warning Signs			FS
on lines in Brockman	Possible			Major			High			Warning signs, Coordination with LMUD			
azardous trees	Unlikely	Unlikely		Moderate	Moderate		Low	Low		No Wildfire Impacts			None
		Likely			Moderate			High			Storm Patrols, Ditch Cleaning		FS
ion		Likely			Moderate			High			Reconstruct Rolling Dips (6) and Outlet drainages (6)		FS
Public Access			Possible			Minor			Low			Cover soil at entrance, and trail slash	FS
			Possible			Minor			Low			Natural Recovery	
Flow (localized)			Likely			Minor			Low			Natural Recovery	FS
			Likely			Minor			Low			Natural Recovery	
			Likely			Minor			Low			Natural Recovery	FS
n of Native Populations			Unlikely			Minor			Very Low			None	FS
n of Native Populations			Possible			Minor			Low			Natural Recovery	FS
n of Native Populations			Possible			Minor			Low			Natural Recovery	FS
Expansion of Noxious			Likely			Moderate			High			EDRR	FS
ed exposure			Pos-Like			Moderate			Inter-High			Monthly monitoring of revegetation and	FS