Date of Report: 10/09/2017

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 stabilization 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: Miller Complex

B. Fire Number: OR-RSF-000647

C. State: OR

D. County: Jackson, Josephine, Siskiyou

E. Region: Pacific Northwest (R6)

F. Forest: Rogue River-Siskiyou NF

G. District: Siskiyou Mountains; Wild Rivers

H. Fire Incident Job Code: P6K9PL (0610)

I. Date Fire Started: August 14, 2017

J. Date Fire Contained: 85% contained on 10/5/2017

K. Suppression Cost: $32.7 million as of 10/05/2017

L. Fire Suppression Damages Repaired with Suppression Funds
1. Completed dozer line: 20
2. Completed hand line: 20
3. Road as completed line: 6

M. Watershed Name and Number:
Headwaters Applegate River (1710030901)
Sucker Creek (1710031102)
Upper Applegate River (1710030902)

6th Field Watersheds within Burned Area and Soil Burn Severity

Fire	Subwatershed Name	Total Subwatershed Acres	Percent Burned	Soil Burn Severity			
				Unburned Acres	Low Acres	Moderate	High Acres
Abney	Butte Fork Applegate River	11,671	6%	10,981 (94%)	479 (4%)	185 (2%)	26 (<1%)
	Carberry Creek	15,551	4%	14,918 (96%)	369 (2%)	265 (2%)	0 (0%)
	Dutch Creek-Elliott Creek	19,460	17%	16,159 (83%)	2497 (13%)	627 (3%)	176 (1%)
	Horse Creek	38,974	<1%	38,972 (>99%)	1 (<1%)	1 (<1%)	0 (0%)
	Middle Fork Applegate River-Applegate River	21,134	30%	14,810 (70%)	3,512 (17%)	2,172 (10%)	639 (3%)
	Seiad Creek	18,774	<1%	18,771 (>99%)	1 (<1%)	2 (<1%)	1 (<1%)
	Steve Fork Carberry Creek	19,069	<1%	19,068 (>99%)	1 (<1%)	0 (0%)	0 (0%)
Burnt Peak	Carberry Creek	15,551	<1%	15,532 (>99%)	9 (<1%)	7 (<1%)	3 (<1%)
	Palmer Creek-Applegate River	18,681	19%	15,175 (82%)	2,126 (11%)	1,202 (6%)	178 (1%)
Creedence	Grayback Creek	15,566	<1%	15,524 (>99%)	37 (<1%)	5 (<1%)	1 (<1%)
	Sturgis Fork Carberry Creek	12,984	5%	12,353 (94%)	337 (3%)	195 (2%)	99 (1%)
Grand Total		**207,415**	7%	**192,262**	**9,368**	**4,662**	**1,124**

N. Total Acres Burned: 25,785 ac as of 10/05/2017

These totals are for the Rogue River-Siskiyou side of the Miller Complex. The Abney Fire burned across the Siskiyou Crest onto the Klamath National Forest, R5, as well. It was agreed that, as the watershed boundary is the boundary between the two forests and regions, each forest/region would complete independent 2500-8 assessments, but share information and coordinate treatments as needed.

NFS Acres (24,965) Other Federal (0) State (0) Private (820)

Fire	Acres Burned			
	NFS	Other Federal	Private	Unclassified
Abney	18,631	-	796	-
Burnt Peak	4,252	-	14	-
Creedence	2,082	-	0	-

O. Vegetation Types: Mixed Conifer Vegetation zone/white fir series (above 3,600 feet) includes Douglas-fir and white fir intermixed with other species. The vegetation is very dense with spots of live oak forming heavy thickets along with madrone and manzanita on ridgetops and shoulder slopes.

The southern exposures in the Interior Valley Vegetation Zone/Douglas-fir series (below 3,600 feet) support scattered ponder pine black and white oak, poison oak, live oak, madrone, ceanothus, and manzanita. Douglas-fir is present in the drainagees and on the more favorable sites. The northern and easterly aspects are primarily occupied with Douglas-fir and scattered ponderosa pine, sugar pine, madrone, and black oak.

The White Fir zone extends fro about 4,500 feet to 6,000 feet. On north slopes, white fir is found at the lower elevation range. Associated conifers may include Douglas-fir, sugar pine and ponderosa pine and at the higher elevation it includes Shasta fir.

The Shasta Fir zone begins above aout 6,000 feet. This zone is not distinct by elevation an dappears correlated more with the cooler east and north high elevation areas, which usually maintain heavy snowpacks through winter and early spring.

In addition to the forested plant communities described above there are a matrix of rock openings, forb dominated glades, and dry oak savannas that can be found scattered across this landscape. These vegetation

assemblages are biodiverse and make up a large portion of the species richness found in these watersheds. There are more than a dozen endemic plant species that occur in the area where these fires burned. These plant communities are often dominated by hundreds of species of forbs with large patches of shrubs and hardwood tree species intermixed.

P. Dominant Soils:

Burnt Peak Fire soils generally formed from colluvial deposits of decomposed diorites, quartz diorites, and gabbro (RRS SRI, 1979).

The dominant soil textures in the Burnt Peak fire area are predominantly sandy-loam to loam with high rock content (skeletal) both in the soil profile and on the soil surface. The Creedence fire area has soils that are predominantly sandy-loam to loam, highly skeletal and are generally formed from felsic intrusive or granitic rocks consisting of quartz diorite, diorites, and gabbro (RRS SRI, 1979). The soil textures in the Abney fire area are notably different from the other fire areas.

The Condrey Mountain Black and Green Schist formation is within the Abney fire perimeter and is known for locally highly productive soils, and unstable slopes with weak bedrock and highly erodible soils (Squaw/Elliott/Lake Watershed Analysis, 1995). There are also inclusions of serpentine found in this area as well. Soil textures range from clay-loam to loam with areas of more silty-loam textures. Soil map units that are found in the Condrey Schist formation are in Appendix A and a map location is in Appendix B.

The majority of the soils had sandy-loam to silty-loam surface textures with varying degrees of gravel. Rock outcrops occur as a minor component throughout the three fire perimeters. Many of these soils are formed from weathering of the metamorphosed marine sediments and volcanics that include schists, phyllites, and serpentine, which have naturally high erosion hazard ratings.

Although all four hydrologic soil groups are represented within the Miller Complex, the vast majority of the soils would be rated as low (A) or low-moderate (B) run-off potential on the Rouge River-Siskiyou NF.

*Dominant soil map units and Taxonomic Classifications of Soil Map Units within the **Miller Complex Fire** from Rogue National Forest SRI (1979). Estimates of soil taxonomy were made due to outdated soil taxonomic nomenclature.*

Soil Map Unit	Est. Acres	Estimated Soil Taxonomic Class
91	1543	Loamy-skeletal, mixed, mesic, Typic Xerochrepts
931	1021	Loamy-skeletal, mixed, mesic, Ultic Haploxerolls
705	875	Loamy-skeletal, mixed, mesic Typic Xerochrepts;
793	860	Loamy-skeletal, mixed, mesic Ultic Haploxeralfs
91	693	Residual soils from volcanic flow material, Loamy Families, Deven
775	509	Clayey-skeletal, serpentinitic, mesic, Mollic Haploseralfs
55	445	Loamy-skeletal, mixed, mesic Ultic Haploxeralfs
93	306	Loamy-skeletal, mixed, mesic Ultic Haploxeralfs
619	298	Loamy-skeletal, mixed, mesic Ultic Haploxeralfs
515	243	Loamy-skeletal, mixed, mesic Ultic Haploxeralfs
72	165	Loamy-skeletal, mixed, mesic Ultic Haploxeralfs
763	143	Clayey-skeletal, serpentinitic, mesic, Mollic Haploseralfs
71	120	Residual soils from volcanic flow material, Loamy Families, Deven
800	103	Loamy-skeletal, mixed, mesic, Ultic Haploxeralfs
69	82	Residual soils from volcanic flow material, Loamy Families, Etchen

Hydrologic Soil Group: Soil Hydrologic Group acres and percent over the total Miller Complex (25,368 acres analyzed).

	Soil Hydro Group A	Soil Hydro Group B	Soil Hydro Group C	Soil Hydro Group D	N/A or Variable
Total acres	1504	16736	1084	166	5879
% acres	6	66	4	1	23

Q. Geologic Types: The major geologic types found within the Miller Complex are: Dominantly mafic and ultramafic intrusive rocks of the Josephine Ophiolite and Rattlesnake Creek terranes including peridotite, serpentinite, amphibolite, gabbro, and diabase; metasedimentary and metavolcanic rocks of the Rattlesnake Creek Terrane and Galice Formation including slate, phyllite, argillite and other metasediments, metabasalt, greenstone, and other metavolcanics; associated plutonic rocks including peridotite, gabbro, diorite and tonalite.

R. Miles of Stream Channels by Class: Perennial: 38 Intermittent: 68

Fire	Streams	Miles
Abney	Intermittent	55
	Perennial	27
Burnt Peak	Intermittent	13
	Perennial	6
Creedence	Intermittent	0
	Perennial	5
Grand Total		**106**

S. Transportation System Trails: 17 miles Roads: 69 miles

Maintenance Level	Miles
1 - BASIC CUSTODIAL CARE (CLOSED)	8
2 - HIGH CLEARANCE VEHICLES	38
3 - SUITABLE FOR PASSENGER CARS	23
4 - MODERATE DEGREE OF USER COMFORT	0
Grand Total	**69**

PART III - WATERSHED CONDITION

A. **Burn Severity** (acres): 10,633 (very low/unburned), 9,368 (low) 4,662 (moderate) 1,123 (high)

Soil Burn Severity (SBS) - Acres					
Fire	**High**	**Moderate**	**Low**	**Very Low/Unburned**	**Total**
Abney	843	3253	6859	8483	19,437
Burnt Peak	181	1209	2135	740	4,265
Creedence	99	200	374	1,410	2,083
Total	**1,123**	**4,662**	**9,368**	**10,633**	**25,785**

Soil Burn Severity (SBS) - Percent				
Fire	**High**	**Moderate**	**Low**	**Very Low/Unburned**
Abney	4.3	16.7	35.3	43.6
Burnt Peak	4.2	28.3	50.0	17.4
Creedence	4.7	9.6	18.0	67.7

B. **Water-Repellent Soil** (acres): 3,451 ac ; Water repellent soils developed on approximately 14% of the fire area. Of that amount approximately 90% occur in areas of steeper slopes. The ash derived soils present within the fire perimeter have a natural level of water repellency when dry.

All three fires analyzed in the Miller Complex have exhibited some level of strong surface hydrophobicity in high soil burn severity areas and to a lesser degree in the moderate soil burn severity areas. The strong hydrophobicity was frequently found down to one inch, although a few areas had hydrophobicity down to 3 inches. The majority of low soil burn severity did not exhibit any soil hydrophobic tendencies. However, naturally occurring hydrophobicity was observed on unburned soils with intact organic horizons. Upon discussion with the Forest Soil Scientist it is not uncommon to find water repellant soils in this area with no fire affects.

Soil Burn Severity (SBS) percentages by fire with total reduced infiltration acres (soil hydrophobicity).

Abney		**Burnt Peak**		**Creedence**	
high SBS%	4	high SBS%	4	high SBS%	5
mod SBS%	17	mod SBS%	28	mod SBS%	11
low SBS%	35	low SBS%	50	low SBS%	19
Unburned%	44	Unburned%	17	Unburned%	65
	Abney	**Burnt Peak**	**Creedence**		
reduced infiltration acres	2467	787	197		
% reduced	13	18	11		

C. Soil Erosion Hazard Rating (pct of total acreage): Erosion Hazards listed in the Rouge River-Siskiyou NF SRI for the soil types within the fire perimeter are high for approximately 72% of the area, moderate for approximately 25% of the area and low for approximately 3% of the area.

3 (low) 25 (moderate) 72 (high)

D. Erosion Potential: 34 tons/acre (soils on steep sloping terrain slopes greater than 35%) and 16 tons/acre (soils on gentler slopes less than 35%).

E. Debris Flow Potential: The USGS Post-Fire Debris Flow Hazard Model was used to assess the Combined Hazard of each drainage in the burned area. The Combined Hazard Rating takes into consideration both the likelihood of occurrence and volume of available sediment. The majority of the area burned is estimated to have a relatively low level of debris-flow hazard potential for post-fire effects. However, some of the steeper, more severely burned headwater areas are predicted to have a moderate likelihood of potential debris flows, but overall volumes are estimated to be low. Field inspections found that the most likely slopes in the fire perimeter where potential debris flows may occur are within the steep, upper midslopes in dissected concave headwall areas within and downslope of moderate and high soil burn severity acreage.

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period	2 to 5 years
B. Design Chance of Success	80 %
C. Equivalent Design Recurrence Interval	2 year
D. Design Storm Duration	24 hour
E. Design Storm Magnitude	1.84 - 3.20 inches
F. Design Flow	16 - 65 cfs/mi2
G. Estimated Reduction in Infiltration	14 %
H. Adjusted Design Flow	33 - 119 cfs/mi2

PART V - SUMMARY OF ANALYSIS

Background: The Miller Complex, comprised of the Burnt Peak, Abney and Creedence fires ignited by lightning on August 14, 2017, has burned roughly 38,000 acres within primarily the Headwaters and the Upper Applegate watersheds, which are located in the Siskiyou Mountains Ranger District on the Rogue River Siskiyou National Forest.

Hydrologic Response: The primary watershed responses of the Miller Complex fires are expected to include: 1) an initial flush of ash, 2) rill and gully erosion in drainages and on steep slopes within the burned area, 3) potential flash floods during winter storms with increased peak flows and sediment deposition. Due to the steepness of the topography in the drainages with large areas now devoid of vegetation and groundcover after the fire, storms will likely create increased surface flow that could trigger a flood event with high sediment volumes. These responses are expected to be most during the first year after the fire. Thereafter, responses are expected to become less evident as vegetation is reestablished, providing ground cover, increasing surface roughness, and stabilizing and improving the infiltration capacity of the soils.

Predicted post-fire peak flows are 1 - 2.6 times greater than pre-fire conditions for the 2-year design storm (Table 3). Post-fire flows could lead to plugged culverts, flow over road surfaces, rill and gully erosion of cut and fill slopes, erosion and deposition along road surfaces and relief ditches, loss of long-term soil productivity and threats to human life and safety. Sedimentation and erosion of channels is likely to occur at an accelerated rate until vegetation establishes itself and provides ground cover.

Erosion Response: The soil burn severity shows the majority of the burned area falls within low and moderate soil burn severity levels (52 % of Abney, 29% of Creedence, and 78% of Burnt Peak). High soil burn severity accounted for only 4 % of Abney, 5% of Creedence, and 4% of the Burnt Peak fire. Unburned areas within each fire perimeter accounted for 44% of Abney, 65% of Creedence, and 17% of Burnt Peak. The areas of moderate and high soil burn severity will pose a higher risk of flooding and possible sedimentation affecting water quality, roads and trails.

Debris Flow Potential: The USGS Post-Fire Debris Flow Hazard Model was used to assess the Combined Hazard of each drainage in the burned area. The Combined Hazard Rating takes into consideration both the likelihood of occurrence and volume of available sediment. Most of the area burned is estimated to have a relatively low level of debris-flow hazard. However, some of the steeper, more severely burned headwater areas are predicted to have moderate likelihood of debris flows, but overall volumes are small. Field inspections found the most likely slopes in the fire perimeter to form debris flows were on those short, steep headwater slopes with high percentages of moderate and high soil burn severity.

A. Describe Critical Values/Resources and Threats:

Values at Risk:

The table below is Exhibit 02 from FSM 2523.1. This matrix was used to evaluate the risk level for each value identified during this BAER assessment. See FSM 2523.1 for additional information.

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**

The table below is a summary of the values (some of which were not identified as 'critical' per Exhibit 01 from FSM 2523.1) within and along the Milli fire area, as well as, the threats to those values, the probability of damage or loss, magnitude of consequences and the resulting level of risk. Red shaded cells are those values that rated out as "very high" or "high" risk. Yellow shaded cells rated out "intermediate" risk and green cells rated out "low" or "very low".

Miller Complex Fire BAER - Forest Service Values At Risk Tracking Table

High / Very High Risk	
Intermediate Risk	
Low / Very Low Risk	

ABNEY FIRE								
Category	**Life/ Property/ Resources**	**Value at Risk**	**Threat to Value at Risk**	**Probability of Damage or Loss**	**Magnitude of Consequence**	**Risk**	**Treatment**	**Notes**
Roads	Life and Safety	Human Life and Safety of Road Use	Road Side Danger Trees along FS road system within burn areas pose threat to Human Life and Safety.	Likely	Major	Very High	Gate Installation **(PS3)** with Hazard Warning Signs **(PS1)**	These gates are to be located at FS Road 1055/1050 Jct, 1035/1040 Jct, 1035/1035-400 Jct. This will close the FSR 1055, 1055 at PCT, 1035,and add signs to the existing gate on FSR 1060 until roadside danger trees can be mitigated. These are both interior fire and fire boundary roads. These are extensive roadside danger trees as defined by R6 policy. Warning signs shall be placed with the gates as public may walk in and may prevent vandalism to gate.
Roads	Life and Safety	Human Life and Safety of Road Use	Road Side Danger Trees along FS road system within burn areas pose threat to Human Life and Safety.	Possible	Major	High	Hazard Warning Signs **(PS1)**	These warning signs are to be placed on each end of the FS Road 1040 as it travels thru a low intensity burn area of the fire.
Roads	Property / Resources	FS Road Systems 1035, 1055, 1060	Increased flood magnitude and hydrologic response resulting in loss or damage to roads and subsequent degradation of water quality	Likely	Major	Very High	Storm Proofing **(R1)**	Storm Proofing measures such as adding rolling dips and armoring road fills will improve road drainage and increase the ability of the road system to adequately handle anticipated post-fire flows in areas adjacent to and/or downslope of high/moderate soil burn severity areas. Report details will define specific sections of FS roads 1035, 1055 and 1060 for treatments.

Roads	Property / Resources	Roads within the fire perimeter below high and moderate soil burn severity	Increased flood magnitude and hydrologic response resulting in loss or damage to roads and subsequent degradation of hydrologic function.	Very Likely	Moderate	Very High	Storm Patrol **(R2)**	Concentrate on Forest Service Roads that are at high risk of damage. These include FS roads, 1035,1040,1055,1060
Cultural	Resources	6102000403	Damage or loss of qualifying characteristics site characteristics from erosion / Looting	Very Likely	Moderate	Very High	Resource Protection Monitoring **(C1)**	Eligible Cultural Resource Site. Site has been assessed in the field.
Cultural	Resources	6102001200	Damage or irreversible loss of qualifying site characteristics from erosion or unauthorized removal / Looting	Very Likely	Major	Very High	Resource Protection Monitoring **(C1)**	Eligible Cultural Resource Site. Site has been assessed in the field.
Recreation	Life and Safety	Human Life associated with, Middle Fork Trail #950	Hazards such as falling trees, rocks and debris pose a threat to Human Life and Safety	Possible	Major	High	Trail Hazard Signs **(PS2)**	The section of the Middle Fork that was burned in moderate severity is accessed at Middle Fork Trailhead and the Knox Gulch Trailhead. Trail hazard warning signs (2) are proposed to be installed at these locations.

Recreation	Life and Safety Property	Human Life associated collapsed trail tread Forest Service Infrastructure Middle Fork Trail #950	Collapsed trail tread on National Forest System trails due to tree stumps and roots burned at moderate and high severity in and adjacent to the trail tread prism.	Likely	Major	Very High	Trail Storm Proofing **(T1)**	Approximately 1/2 mile of the Middle Fork Trail burned in moderate fire severity areas. Locations where the trail tread has collapsed will be filled with locally available rock and soil to level the tread. In some locations the downhill side of the trail would need to be shored up using existing down timbers or rock if necessary and where present. Soil adjacent to the trail would be used to fill the area that has collapsed to level the tread. This activity includes clearing downed trees blocking access and mitigation of only those imminent hazard trees at trail treatment locations.
Recreation	Life and Safety	Human Life associated with Cook and Green Trail #959	Hazards such as falling trees, rocks and debris pose a threat to Human Life and Safety	Possible	Major	High	Trail Hazard Signs **(PS2)**	The section of the Cook and Green Trail that was burned in moderate to high severity is accessed by the Upper and Lower Cook and Green Trailheads. Trail hazard warning signs (2) are proposed to be installed at these locations.
Recreation	Life and Safety Property	Human Life associated collapsed trail tread Forest Service Infrastructure Cook and Green Trail #959	Collapsed trail tread on National Forest System trails due to tree stumps and roots burned at moderate and high severity in and adjacent to the trail tread prism.	Likely	Major	Very High	Trail Storm Proofing **(T1)**	Approximately 1 mile of the Cook and Green Trail burned in moderate and high fire severity areas. Locations where the trail tread has collapsed will be filled with locally available rock and soil to level the tread. In some locations the downhill side of the trail would need to be shored up using existing down timbers or rock if necessary and where present. Soil adjacent to the trail would be used to fill the area that has collapsed to level the tread. This activity includes clearing downed trees blocking access and mitigation of only those imminent hazard trees at trail treatment locations. Includes monitoring of treatments in the spring to determine treatment effectiveness.
Recreation	Life and Safety	Human Life associated with Horse Camp Trail #958, Butte Fork Trail #957	Hazards such as falling trees, rocks and debris pose a threat to Human Life and Safety	Possible	Major	High	Trail Hazard Signs **(PS2)**	The section of the Horse Camp and Butte Fork Trail that was burned in moderate to high severity is accessed by the Butte Fork/ Horse Camp Trailhead. Trail hazard warning signs (1) are proposed to be installed at the Horse Camp/ Butte Fork Trailhead.
Recreation	Life and Safety Property	Human Life associated collapsed trail tread	Collapsed trail tread on National Forest System trails due to tree stumps and roots	Likely	Major	Very High	Trail Storm Proofing **(T1)**	Approximately 1/4 mile of the Horse Camp Trail burned in moderate fire severity areas. Locations where the trail tread has collapsed will be filled with locally available rock and soil to level the tread. In some

		Forest Service Infrastructure Horse Camp Trail #958, Butte Fork Trail #957	burned at moderate and high severity in and adjacent to the trail tread prism.					locations the downhill side of the trail would need to be shored up using existing down timbers or rock if necessary and where present. Soil adjacent to the trail would be used to fill the area that has collapsed to level the tread. This activity includes clearing downed trees blocking access and mitigation of only those imminent hazard trees at trail treatment locations.
Recreation	Life and Safety	Human Life associated with Tin Cup Trail #961	Hazards such as falling trees, rocks and debris pose a threat to Human Life and Safety	Possible	Major	High	Trail Hazard Signs **(PS2)**	The section of the Tin Cup that was burned in moderate to high severity is accessed by the Tin Cup Trailhead. Trail hazard warning signs (1) are proposed to be installed at these locations.
Recreation	Life and Safety Property	Human Life associated collapsed trail tread Forest Service Infrastructure Tin Cup Trail #961	Collapsed trail tread on National Forest System trails due to tree stumps and roots burned at moderate and high severity in and adjacent to the trail tread prism.	Likely	Major	Very High	Trail Storm Proofing **(T1)**	Approximately 3/4 mile of the Tin Cup Trail burned in moderate and high fire severity areas. Locations where the trail tread has collapsed will be filled with locally available rock and soil to level the tread. In some locations the downhill side of the trail would need to be shored up using existing down timbers or rock if necessary and where present. Soil adjacent to the trail would be used to fill the area that has collapsed to level the tread. This activity includes clearing downed trees blocking access and mitigation of only those imminent hazard trees at trail treatment locations. Includes monitoring of treatments in the spring to determine treatment effectiveness.
Recreation	Property/ Whiskey Ridge Viewpoint	Developed Recreation Site Split Rail Fence	Approximately 30 feet of split rail fence was burned	Very Likely	Minor	Low	No Treatment	Split rail fence was completely burned and needs to be replaced, but it does not serve as a safety barrier to either vehicles or people.
Hydrology	Resources	Hydrologic function as it pertains to water quality in creeks and streams	Erosion and transport of soils, ash and/or debris from increased post-fire flows	Likely	Moderate	High	Road treatments and Trail treatments	**No individual channel treatments identified. See Road treatments for descriptions.**

Watershed	Resources	Soil Productivity and Hydrologic Function	Loss of soil productivity and degraded water quality due to increased post-fire surface runoff and erosion from high and moderate burn severity areas.	Possible	Moderate	Intermediate	No Treatment	Cost benefit ratio does not justify treatment. Soil erosion expected to occur in isolated areas with no effective treatment justified.
Botany	Resources	Botany	Probability of damage or loss of the native plant community	Likely - Based on burn severity, miles of dozer line, and other suppression activities	Moderate	High	Invasive species Early Detection Rapid Response (EDRR) treatments. Hand pulling and herbicide. **(L1 EDRR)**	See botany BAER report. Several species and sites throughout the complex.
Hydrology	Life and Safety	Human Life and Safety	Post-Fire flooding or debris flows impacts to downstream communities or residences.	Unlikely	Major	Intermediate	No treatments proposed	Residences along Elliott Creek (Joe Bar) are situated on elevated terraces, and did not receive flooding during previous period of record flood events, such as the 1997 floods across the Pacific Northwest. For those areas downstream of Applegate reservoir, the flood control capacity of the reservoir will help mitigate any potential downstream impacts.

Hydrology	Property and Resources	Blue Ledge Mine and Aquatics/Water Quality	Post fire runoff and potential erosion of repositories with contaminated material	Unlikely	Major	Intermediate	No treatments proposed. Coordination with EPA recommended	The Blue Ledge mine CERCLA reclamation project has two repositories of contaminated materials within the Abney fire, both located near the end of FSR 1060-400. One location is near a minor shoulder ridge with minimal upslope drainage area, with armored ditches diverting flow around the site. Understory burn has occurred on the hillslopes above and monitoring should take place to ensure the cap is not compromised by post-fire runoff. The other repository is at the end of FSR 1060-400 and upslope drainage does not appear to be an issue at this location.
Hydrology	Property	Applegate Reservoir	Post fire flooding, sedimentation, and floatable woody debris inputs to reservoir until burned areas recover.	Possible	Moderate	Intermediate	No treatments proposed on NFS land. Coordination with US Army Corps of Engineers recommended	Applegate Reservoir is managed by the US Army Corps of Engineers. Elevated runoff, sedimentation, and inputs of floatable woody debris are possible into the Applegate reservoir until the burned areas recover. Coordinate with the U.S. Army Corps of Engineers related to any potential issues with the management of the dam, spillway works, or reservoir downstream of the Abney and Creedence fires.
BURNT PEAK								
Category	Life/ Property/ Resources	Value at Risk	Threat to Value at Risk	Probability of Damage or Loss	Magnitude of Consequence	Risk	Treatment	Notes

Roads	Life and Safety	Human Life and Safety of Road Use	Road Side Danger Trees along FS road system within burn areas pose threat to Human Life and Safety.	Possible	Major	High	Road Hazard signs **(PS1)**	Signs shall be placed at Jct of 1090 and 1095 to cover all access to Burnt Peak Fire.
Roads	Property/ Resources	FS Road System 1090	Increased flood magnitude and hydrologic response resulting in loss or damage to roads and subsequent degradation of water quality	Likely	Moderate	High	Storm Proofing **(R1)**	Storm Proofing measures such as adding rolling dips and armoring road fills will improve road drainage and increase the ability of the road system to adequately handle anticipated post-fire flows in areas adjacent to and/or downslope of high/moderate soil burn severity areas.
Roads	Property / Resources	Roads within the fire perimeter below high and moderate soil burn severity	Increased flood magnitude and hydrologic response resulting in loss or damage to roads and subsequent degradation of hydrologic function.	Very Likely	Moderate	High	Storm Patrol **(R2)**	Concentrate on Forest Service Roads that are at high risk of damage. These include FS roads 1090
Cultural	Resources	6102000429	Damage or loss of qualifying characteristics site characteristics from erosion	Possible	Minor	Low	No Treatment Recommended	Eligible Cultural Resource Site. Site has been assessed in the field.

Cultural	Resources	6102000430	Damage or loss of qualifying characteristics site characteristics from erosion	Possible	Minor	Low	No Treatment Recommended	Eligible Cultural Resource Site. Site has been assessed in the field.
Cultural	Resources	6102000431	Damage or loss of qualifying characteristics site characteristics from erosion	Likely	Moderate	High	Resource Protection Monitoring **(C1)**	Eligible Cultural Resource Site. Site has been assessed in the field.
Cultural	Resources	6102000434	Damage or loss of qualifying characteristics site characteristics from erosion	Possible	Minor	Low	No Treatment Recommended	Eligible Cultural Resource Site. Site has been assessed in the field.
Cultural	Resources	06102000436	Damage or irreversible loss of qualifying site characteristics from erosion or unauthorized removal	Likely	Moderate	High	Resource Protection Monitoring **(C1)**	Eligible Cultural Resource Site. Site has been assessed in the field.
Cultural	Resources	06102000445	Damage or loss of qualifying characteristics site characteristics from erosion/Looting	Possible	Minor	Low	No Treatment Recommended	Eligible Cultural Resource Site. Site has been assessed in the field.

Cultural	Resources	06102000448	Damage or loss of qualifying characteristics site characteristics from erosion	Possible	Minor	Low	No Treatment Recommended	Eligible Cultural Resource Site. Site has been assessed in the field.
Hydrology	Resources	Hydrologic function as it pertains to water quality in creeks and streams	Erosion and transport of soils, ash and/or debris from increased post-fire flows	Likely	Moderate	High	Road treatments and Trail treatments. See Notes	**No individual channel treatments identified. See Road treatments for descriptions.**
Watershed	Resources	Soil Productivity and Hydrologic Function	Loss of soil productivity and degraded water quality due to increased post-fire surface runoff and erosion from high and moderate burn severity areas.	Possible	Moderate	Intermediate	No Treatment	Cost benefit ratio does not justify treatment. Soil erosion expected to occur in isolated areas with no effective treatment justified.
Botany	Resources	Botany	Probability of damage or loss of the native plant community	Likely - Based on burn severity, miles of dozer line, and other suppression activities	Moderate	High	Invasive species Early Detection Rapid Response (EDRR) treatments. Hand pulling and herbicide. **(L1)**	See botany BAER report. Several species and sites throughout the complex.

Hydrology	Life and Safety	Human Life and Safety	Post-Fire flooding or debris flows impacts to downstream communities or residences.	Unlikely	Major	Intermediate	No treatments proposed	Residences downslope of the Burnt peak fire appear to be situated on terraces and away from the direct drainage paths coming from the burned area.
Critical Fish Habitat	Resources	SONCC	Degradation of occupied SONCC Coho Salmon habitat from post-fire sedimentation and ash in Palmer Creek	Unlikely	Minor	Very Low	No Treatment Recommended	Only 1% of high severity and 6% of moderate soil burn severity in the watershed, with almost all low severity in the vicinity of Palmer Creek.
CREEDENCE FIRE								
Category	**Life/ Property/ Resources**	**Value at Risk**	**Threat to Value at Risk**	**Probability of Damage or Loss**	**Magnitude of Consequence**	**Risk**	**Treatment**	**Notes**
Roads	Property	FS Road System 1020	Increased flood magnitude and hydrologic response resulting in loss or damage to roads and subsequent degradation of water quality	Likely	Moderate	High	Storm Proofing **(R1)**	Storm Proofing measures such as adding rolling dips and armoring road fills will improve road drainage and increase the ability of the road system to adequately handle anticipated post-fire flows in areas adjacent to and/or downslope of high/moderate soil burn severity areas. FSR 1020 on the SE corner of Creedence fire

Roads	Property / Resources	Roads within the fire perimeter below high and moderate soil burn severity	Increased flood magnitude and hydrologic response resulting in loss or damage to roads and subsequent degradation of hydrologic function.	Very Likely	Moderate	High	Storm Patrol **(R2)**	Concentrate on Forest Service Roads that are at high risk of damage. These include FS roads 1020, 1020-500
Roads	Life and Safety	Human Life and Safety of Road Use	Road Side Danger Trees along FS road system within burn areas pose threat to Human Life and Safety.	Likely	Major	Very High	Gate Installation **(PS3)** with Hazard Warning Signs **(PS1)**	This gate is for FS Road 1020-500. This is an interior fire road and has extensive roadside danger trees as defined by R6 policy. Warning signs shall be placed with the gates as public may walk in and may prevent vandalism to gate.
Roads	Life and Safety	Human Life and Safety of Road Use	Road Side Danger Trees along FS road system within burn areas pose threat to Human Life and Safety.	Possible	Major	High	Hazard Warning Signs **(PS1)**	This warning sign is for the FS Road 1005-300 as it travels along a low intensity burn corner of the fire.
Cultural	Resources	Historic 1857 Sturgis Mining Ditch (aka Thompson Irrigation Ditch)	Damage or irreversible loss of qualifying site characteristics from erosion, and increased flows.	Possible	Minor	Low	No Treatment Recommended	Eligible cultural resource site. Site has been assessed in the field.

Recreation	Life and Safety	Human Life associated with Boundary Trail #1207 and O'Brien Creek Trail #900	Hazards such as falling trees, rocks and debris pose a threat to Human Life and Safety	Possible	Major	High	Trail Hazard Signs **(PS2)**	The section of the Boundary Trail and O' Brien Creek Trail that was burned in moderate to high severity is accessed by the Sturgis Fork Trailhead, Elk Creek Trailhead, Grayback Mountain Trailhead and O' Brien Creek Trailhead. Trail hazard warning signs (4) are proposed to be installed at these locations.
Recreation	Life and Safety Property	Human Life associated collapsed trail tread Forest Service Infrastructure Boundary Trail #1207	Collapsed trail tread on National Forest System trails due to tree stumps and roots burned at moderate and high severity in and adjacent to the trail tread prism.	Likely	Major	Very High	Trail Storm Proofing **(T1)**	Approximately 3/4 mile of the Boundary Trail burned in moderate to high fire severity areas. Locations where the trail tread has collapsed will be filled with locally available rock and soil to level the tread. In some locations the downhill side of the trail would need to be shored up using existing down timbers or rock if necessary and where present. Soil adjacent to the trail would be used to fill the area that has collapsed to level the tread. This activity includes clearing downed trees blocking access and mitigation of only those imminent hazard trees at trail treatment locations. Includes monitoring of treatments in the spring to determine treatment effectiveness.
Cultural	Resources	Cultural Resource Sites - Classified information	Damage or loss of resource data from erosion or unauthorized removal	Unlikely	Major	Low	No Treatment	Twenty nine (29) Eligible Cultural Resource Sites that have been reviewed in the field and the concern for these sites is low. All are within moderate to high burn severity including State Hwy 242. Ongoing monitoring of this route and repairs to be coordinated with ODOT

Hydrology	Resources	Hydrologic function as it pertains to water quality in creeks and streams	Erosion and transport of soils, ash and/or debris from increased post-fire flows	Likely	Moderate	High	Road treatments and Trail treatments	**No individual channel treatments identified. See Road treatments for descriptions.**
Watershed	Resources	Soil Productivity and Hydrologic Function	Loss of soil productivity and degraded water quality due to increased post-fire surface runoff and erosion from high and moderate burn severity areas.	Possible	Moderate	Intermediate	No Treatment	Cost benefit ratio does not justify treatment. Soil erosion expected to occur in isolated areas with no effective treatment justified.
Botany	Resources	Botany	Probability of damage or loss of the native plant community	Likely	Moderate	High	Invasive species Early Detection Rapid Response (EDRR) treatments. Hand pulling and herbicide. **(L1)**	Likely - Based on burn severity, miles of dozer line, and other suppression activities. See botany BAER report. Several species and sites throughout the complex.
Hydrology	Property	Applegate Reservoir	Post fire flooding, sedimentation, and floatable woody debris inputs to reservoir until burned areas recover.	Unlikely from Creedence Fire	Moderate	Low	No treatments proposed on NFS land. Coordination with US Army Corps of Engineers recommended	Applegate Reservoir is managed by the US Army Corps of Engineers. Elevated runoff, sedimentation, and inputs of floatable woody debris are possible into the Applegate reservoir until the burned areas recover. Coordinate with the U.S. Army Corps of Engineers related to any potential issues with the management of the dam, spillway works, or reservoir downstream of the Abney and Creedence fires.

Critical Fish Habitat	Resources	SONCC	Degradation of occupied SONCC Coho Salmon habitat from post-fire sedimentation and ash in Grayback Creek	Unlikely	Minor	Very Low	No Treatment Recommended	Less than 1% of the Grayback watershed experienced any burn, with only 6 acres in moderate or high severity in the extreme headwaters.
Miller Complex - All Fires								
Category	**Life/ Property/ Resources**	**Value at Risk**	**Threat to Value at Risk**	**Probability of Damage or Loss**	**Magnitude of Consequence**	**Risk**	**Treatment**	**Notes**
Wildlife	Resource	Critical habitat and nest patches for TE Northern Spotted Owl	Loss of critical habitat	Possible/Unlikely	Minor, but with long term effects	Low	No Treatment	The Miller Complex includes Critical Habitat for Northern spotted owls and 13 historic Northern Spotted Owl Activity Centers. The fires only burned 2,273 acres of dispersal and 2,579 acres of Nesting, Roosting, Foraging (NRF) across the entire complex, less than 1 percent of the dispersal and NRF habitat in these CHUs, and much of that was at a moderate intensity which likely resulted in a majority of the habitats to continue to function after the fires. The magnitude of consequences would be minor for both, with considerable long term effects. This results in a low risk rating; however no emergency BAER treatments would be effective at reducing this risk in 1-3 years.

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 unacceptable degradation to natural and cultural resources. The application of these BAER treatments are expected to minimize on-site and downstream damages to the identified values at risk previously mentioned. The emergency treatments being recommended by the Miller Complex BAER Team are specifically designed to achieve the following results.

Proposed Land Treatments

The objective of the land treatments are to:

1. Reduce the potential for establishment of non-native invasive plant infestations in native or naturalized communities, particularly establishment of infestations in highly susceptible burned areas or dozer lines, prevent spread of existing infestations, and decrease rate of spread of non-native invasive plant density from existing infestations**. (L1**).

Proposed Road and Trail Treatments

The objective of the road and trail treatments are to:

1. Protect road and trail investments from becoming impassible and damaged due to increased post-fire runoff. **(R1, R2, T1, T2)**
2. Reduce sedimentation into streams degrading water quality **(R2, R3, T1, T2)**
3. Improve road drainage by increasing ditch and catchment basin capacity to reduce the potential for road failure due to increased flows **(R1, R2)**

Proposed Protection/Safety Treatments:

The objective of the protection/safety treatments are to:

1. Protect human life and safety by raising awareness through posting hazard warning signs at recreation sites, trailheads, and when entering the burn area on roads. **(PS1, PS2).**
2. Protect human life and safety by installation of gates on roads through high and moderate soil burn severity where extensive hazards exist such as snags, rocks and other debris (**PS3).**
3. Protect public safety by repairing collapsed and eroded trail segments that received damage in burn areas. Segments of these trails have burned over tread and burned vegetation/roots compromising the integrity of the tread edge and pose a high risk to recreationists. These trails are important to the local and regional community and there is a significant importance to upholding the character of these trails. Work also includes tree felling of snags that pose risk to workers. **(T1)**

Proposed Cultural Site Treatments:

The objectives of the cultural site treatments are to:

1. Protect cultural features of the site from being impacted from falling fire killed trees, or covered with soil and debris. To prevent cultural features from being covered with soil and debris,or impacted from dead falling trees, archaeological monitoring will occur following the first fall precipitation event and in the spring to assess conditions, to remove materials from atop cultural features, and/or to prescribe erosion control protection measures, if necessary. If signs of erosion are noted during monitoring, the site should be mapped to preserve and record structural information before it is lost to potential impacts from post fire processes. **(C1).**
2. Protection of sites associated with emergency stabilization and rehabilitation activities and consultation obligations to area tribes, and to State Historic Preservation officers (CA and OR SHPOs). Survey, inspect and/or monitor, and complete emergency compliance documentation for proposed emergency stabilization action that are subject to Section 106 of the NHPA. Portions of the Abney Fire are located in the State of California, and are subject to following 36CFR 800 regulation. Actions proposed in Oregon would be completed in accordance to the programmatic agreement between Region 6 and Oregon SHPO and advisory council. **(C2)**

Proposed Channel Treatments:
There are no proposed channel treatments.

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

Land **NA** (only weeds) __ % Channel **N/A** % Roads/Trails **75** % Protection/Safety **85** %

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land	70	75	80
Channel	NA	NA	NA
Roads/Trails	90	90	90
Protection/Safety	85	90	95

E. Cost of No-Action (Including Loss): Critical values identified in Section A would be damaged or lost. Cost of the no action is estimated to be $15,268,000. (This assumes a value on human life and safety of $10,000,000, when really priceless).

F. Cost of Selected Alternative (Including Loss): Total cost of the action alternative (including loss) is $3,238,119.

G.

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

Team Leader: Scott Hagerty – Forest Soil Scientist, Six Rivers NF (retired)
Team Leader Assistant: Joni Brazier – Forest Soil Scientist and BAER Coordinator, Rogue River-Siskiyou NF

Team Members**:**

Mark Muir – Hydrologist
Kacey Largent – Hydrologist (T)
Jan Curtis-Tollestrup – Hydrologist
Luke Cerise – Soil Scientist
Brian Long – Recreation
Jacob Jordan – Arch. Technician
Scott Blower - Engineering
Lisa Rice – Archaeology (BLM)
Melissa Julien – Cultural
Mike Mitchell – GIS
Jessica Celis- Invasive Plants/Botany
Clint Emerson – Invasive Plants/Botany

H. Treatment Narrative:

Land Treatments:

L1- Non-native Invasive Plant Monitoring. Detection and Treatment (EDRR)

Prevention, combined with early detection and rapid response, is the most effective means of controlling noxious weeds and protecting native plant communities. Post-fire non-native invasive plant detection monitoring is recommended the first year "to determine the post-fire presence of invasive species" on fire lines, etc. This is consistent with Forest Service Manual direction of BAER treatment of invasive plants. (FSM2523.3) (USDA Forest Service, 2004). Objective is to prevent invasive plants from spreading into fire-exposed moderate to high severity burned soils. Targeted species are Oregon Department of Agriculture designated invasive plants that the RRSNF has prioritized for management. Particular attention will be given to high potential habitat for the federally endangered plant *Fritillaria gentneri* within the lower furthest east portion of the Burnt Peak fire.

Follow-up chemical and manual weed control would occur in order to reduce the potential for spread of weeds within the fire perimeter. This is possible under the "Early Detection Rapid Response" guidelines.

Based on this analysis of known invasive plant populations, potential seed rain from nearby populations and the mixed severity nature of these fires it is recommended that a EDRR invasive plant treatment effort be implemented in order to abate negative effects to native plant communities within the fire. The Siskiyou Mountains, particularly the areas where these fires burned, are renowned in the nation as having some of the highest levels of plant biodiversity and endemic plant species. This is attested to by the fact that three designated botanical areas were burned during these fires. The Rogue River-Siskiyou National Forest has gone to great lengths to manage invasive plant species in this area because of the high value native plant natural resource that is found here. It is imperative that this effort is doubled down on now that large scale fires have left many acres vulnerable to colonization to the invasive plant species discussed in this report. In addition, there is potential habitat in the Burnt Peak fire for the federally endangered plant *Fritillaria gentneri* that is at high risk for invasion by aggressive species such as Armenian blackberry. Considering all this it is strongly recommended that EDRR efforts are fully funded and implemented for at least the next season. Based on the efficacy of treatments in 2018 there may be a need to ask for additional funds in 2019 and 2020.

Refer to BAER treatment map for specific locations.

EDRR will occur on approximately 1,600 acres and estimated invasive plant treatments to occur across 100 acres.

Treatment	Units	Unit Cost	# of Units	Total Cost
Invasive Plant Surveys/detection and treatment	Acres	$23	1600 ac EDRR, 100 ac treatment	$36,352

Road and Trail Treatments:

R1 Storm Proofing Roads: Storm proofing drainage features were identified in areas with high and moderate burn severity. Activity will include cleaning culverts and increasing ditch and catchment basin capacity where they exist and installing drain dips and additional water bars as necessary to handle short-term post-fire flows, sediment and debris.

Roads that are a priority for treatment include: Forest Roads 1005, 1020, 1035, 1040, 1050, 1055, 1060, 1090, 1095 and associated road spurs. Refer to BAER treatment map for specific locations.

Treatment	Units	Unit Cost	# of Units	Total Cost
Stormproofing, Rolling Dips	Each	$2,250	18	$40,500
Stormproofing, Culvert cleanout and improved road drainage	Miles	$750	22	$16,500
Culvert Replacement	Each	$6,000	1	$6,000
Roadside Danger Tree Mitigation at work sites	Lump estimate	$2,500	1	$2,500
Contractor Mobilization	Lump estimate	$5,000	1	$5,000
Contract Administration	Each	$6,000	1	$6,000
TOTAL				**$76,500**

R2 Storm Patrol Roads: The roads at risk from increased stormflow runoff and erosion within the burned area are primarily located below areas of high to moderate burn severity. There is an immediate and future threat to travelers along the roads within the burned area due to the increased potential for culverts to plug with sediment and debris which could washout sections of the roads. With the loss of vegetation, normal storm frequencies and magnitudes can more easily initiate erosion on the slopes, and it is likely that this runoff will inundate the roads or cause washouts at drainage facilities (culverts) or stream crossings. These events create hazardous conditions on forest roads and put the safety of users at risk.

Monitor road drainage structures and debris flow treatment structures after significant storm events to ensure the maximum drainage capacity is maintained until the natural re-vegetation of the burned area has occurred. Maintain and/or repair any damage to road surfaces. Remove sediment and debris from drainage and treatment structures and repair head-cutting in streams and drainages to prevent further degradation of channels. Monitor the movement of large woody debris and determine whether the material should be removed before it contacts bridge piers, abutments, or culverts. Mitigate hazard trees at treatment locations to provide for worker safety.

Targeted roads include Forest Roads 1005, 1020, 1035, 1040, 1050, 1055, 1060, 1090, 1095, and associated road spurs.

Treatment	Units	Unit Cost	# of Units	Total Cost
Storm Patrol and	Day	$432	20	$8,640
Storm Response, Contractor Equipment	Hours	$110	100	$11,000
Contractor Mobilization	Lump estimate	$5,000	1	$5,000
TOTAL				**$24,640**

T1 Trail Storm Proofing: The overall purpose of this treatment is to reduce risks to human life and safety by reconstructing portions of National Forest System trail tread that have collapsed due to tree root systems being burned. In addition, the treatment will prevent erosion and further failure of the trail tread which would be considered a loss of Forest Service property.

Collapsed trail tread will be filled with locally available rock and soil to level the tread. In some locations the downhill side of the trail would need to be shored up using existing down timbers or rock if necessary and where present. Soil adjacent to the trail would be used to fill the area that has

collapsed to level the tread. Other segments may require completely reconstructing the tread to prevent continued slope erosion and additional tread loss.

Areas of trail storm proofing will be monitored during the winter and spring for effectiveness of treatments to assure trail tread protections are adequate, and determine if more treatments are needed to prevent loss.

Sections of trail with moderate side slopes within moderate to high severity burn areas (estimate: 3 cumulative miles along sections of the O'Brien Creek Trail, Boundary Trail, Middle Fork Trail, Cook and Green Trail, Horse Camp Trail, Butte Fork Trail and Tin Cup Trail). Refer to BAER treatment map for specific locations.

Treatment	Units	Unit Cost	# of Units	Total Cost
Trail Storm Proofing & Treatment Monitoring	Miles	$4,971	3	$14,913

Protection/Safety Treatments:

PS1 Hazard Warning Signs - Roads: Signs will inform users of the dangers associated with entering and recreating within the burned area. Purchase and installation of 'Entering Burned Area" hazard warning signs at 12 locations, primarily at roads or road intersections that access the burned area. Signs are to be installed in visible locations on uphill side of roads. Signs will be installed consistent with FHWA Standard Specifications for Roads and Bridges on Federal Highway Projects (FP-03) with Forest Service supplemental specifications and follow sign and poster guidelines for the Forest Service EM7100-15. Refer to BAER Treatment map for specific locations.

Treatment	Units	Unit Cost	# of Units	Total Cost
PS1 Hazard Warning Signs-Roads	Each	$200	12	$2,400

PS2 Hazard Warning Signs – Trails : Signs will inform users of the dangers associated with entering and recreating within the burned area. Purchase and installation of 'Entering Burned Area" hazard warning signs at 10 locations, primarily at trailheads and trail intersections that access the burned area. Signs are to be installed in visible locations on uphill side of trail.

Place signs at: Upper O'Brien Creek Trailhead (1), Upper and Lower Cook and Green Trailheads (2), Middle Fork Trailhead (2), Horse Camp/ Butte Fork Trailhead (1), Sturgis Fork Trailhead- access to Boundary Trail (1), Tin Cup Trailhead (1), Elk Creek Traillhead (1) and Grayback Trailhead (1). Refer to BAER Treatment map for specific locations.

Treatment	Units	Unit Cost	# of Units	Total Cost
PS2 Hazard Warning Signs - Trails	Each	$277	10	$2,770

PS3 Road Closures: The following locations were identified as gate closure sites with BAER warning signs: Install new gates on FSR 1020-500, 1035, 1050, and add signage to the gate on FSR 1060. Each gate will receive new BAER warning signs. See treatment map for more detail locations.

Treatment	Units	Unit Cost	# of Units	Total Cost
PS3 Road Closures	Each	$5,500	4	$22,000

Cultural Treatments

C1 Cultural Site Monitoring

Four sites that were impacted by the fires of the Miller Complex will be monitored after storm events for signs of erosion, exposure and looting. If monitoring results determine that erosion is having a significant effect and that stabilization treatments could be effective, an interim BAER request would be proposed to stabilize hillslopes and reduce the risk of damage to these sites.

Treatment	Units	Unit Cost	# of Units	Total Cost
C1 Cultural Site Monitoring – Miller Complex	Site	$1240	4	$4,960

C2 Section 106 Clearance

Cultural resource Section 106 clearances required for ground disturbing activities associated with Miller BAER emergency treatments. Protection of sites associated with emergency stabilization and rehabilitation activities and consultation obligations to area tribes, and to State Historic Preservation officers (CA and OR SHPOs). Survey, inspect and/or monitor, and complete emergency compliance documentation for proposed emergency stabilization action that are subject to Section 106 of the NHPA. Portions of the Abney Fire are located in the State of California, and are subject to following 36CFR 800 regulation. Actions proposed in Oregon would be completed in accordance to the programmatic agreement between Region 6 and Oregon SHPO and advisory council.

Treatment	Units	Unit Cost	# of Units	Total Cost
C2 Section 106 Clearance on other BAER Treatments	Hours	$50.22	40	$2,009

I. **Monitoring Narrative:**

Implementation: Implementation monitoring and documentation will be conducted for each treatment to ensure that it is implemented correctly following specifications. Results of this monitoring will be submitted in an Interim or Final 2500-8, Accomplishment Report.

	Units	Unit Cost	# of Units	Total Cost
Implementation Tracking & Reporting	Days	$331	5	$1,655

Interagency Coordination: On going interagency coordination for the Miller Complex is considered essential for keeping city, county, state, and other agencies informed and relaying the BAER assessment findings, particularly with the EPA in regards to the Blue Ledge Mine CIRCLA site and Army Corps of Engineers in regards to Applegate Reservoir (Includes 5 days each for engineering, hydrology and soils).

Treatment	Units	Unit Cost	# of Units	Total Cost
Interagency Coordination	Days	$400	15	$6,000

Part VI – Emergency Stabilization Treatments and Source of Funds

			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 EDRR	Acres	$23	1600	$36,352	$0		$0		$0	$36,352
C1 Cultural Site monitoring	Site	$1,240	4	$4,960						
C2 Cultural Sect.106 Clearance	Hrs	$50	40	$2,009	$0		$0		$0	$2,009
Subtotal Land Treatments				$43,321	$0		$0		$0	$2,009
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Channel Treat.				$0	$0		$0		$0	$0
C. Road and Trails										
R1 Road Stormproofing	lump sum	$76,500	1	$76,500	$0		$0		$0	$76,500
R2 Road Storm Patrol	lump sum	$24,640	1	$24,640	$0		$0		$0	$24,640
T1 Trail Stormproofing	miles	$4,971	3	$14,913	$0		$0		$0	$14,913
Subtotal Road & Trails				$116,053	$0		$0		$0	$116,053
D. Protection/Safety										
PS-1 Road Hazard Warning signs	each	$200	12	$2,400	$0		$0		$0	$2,400
PS-2 Trail Hazard Warning Signs	each	$277	10	$2,770	$0		$0		$0	$2,770
PS-3 Road Closures	gates	5500	4	$22,000	$0		$0		$0	$22,000
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Structures				$27,170	$0		$0		$0	$27,170
E. BAER Evaluation										
Assessment Team	Report			---	$75,000		$0		$0	$75,000
Interim Assessment	Report									
Insert new items above this line!				---	$0		$0		$0	$0
Subtotal Evaluation				---	$75,000		$0		$0	$75,000
F. Monitoring										
Monitoring Report	Report	$1,655	1	$1,655	$0		$0		$0	$1,655
Interagency Coordination	Day	$400	15	$6,000	$0		$0		$0	$6,000
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Monitoring				$7,655	$0		$0		$0	$7,655
G. Totals				$194,199	$75,000		**$0**		**$0**	**$227,887**
Previously approved										
Total for this request				**$194,199**						

PART VII - APPROVALS

1. */s/ Robert G. MacWhorter* — 10/9/2017
   Forest Supervisor (signature) — Date

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