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: Rebel Fire/Horse Complex

B. Fire Number: Rebel Fire - OR-WIF-170156
Horse Creek Complex - OR-WIF-170234

C. State: Oregon

D. County: Lane County

E. Region: Pacific Northwest (R6)

F. Forest: Willamette National Forest

G. District: McKenzie River Ranger District

H. Fire Incident Job Code: Rebel Fire - P6K807
Horse Creek Complex – P6K93B

I. Date Fire Started: Rebel Fire – 8/04/2017

J. Date Fire Contained: Rebel Fire & Horse Creek Complex - anticipated completion 10/15/2017

K. Suppression Cost: $17,545,294 as of 10/5/2017

L. Fire Suppression Damages Repaired with Suppression Funds
1. Roads improved as fire line: 105.3 miles; all to have drainage installed through suppression repair.
2. Dozer lines not on roads: 13.2 miles; all to have drainage installed through suppression repair.
4. Hand lines: 8.5 miles; all to have drainage installed through suppression repair.
5. Miles of road bladed, non-fire line: 26 miles
6. Other – drop points, staging areas, helispots, safety zones, pump chances, spills, etc.

M. Watershed Number:

Total acres, Soil Burn Severity (SBS) by Subwatershed

Watershed	Unburned/ Very Low SBS	Low SBS	Moderate SBS	High SBS	Outside Burned Area	Total
Augusta Creek-South Fork McKenzie River	329	1,567	343	138	16,277	18,654
Boulder Creek-McKenzie River	41	172	47	20	35,560	35,841
French Pete Creek	177	2,180	222	5	17,524	20,108
Lost Creek	86	671	1,638	591	8,680	11,665
Lower Horse Creek	520	2,650	338	12	13,515	17,035
Lower Separation Creek	195	2,080	1,861	475	16,489	21,099
Middle Horse Creek	395	2,799	308	28	8,876	12,406
Rebel Creek-South Fork McKenzie River	71	4,159	697	157	11,842	16,926
Upper Horse Creek	1	19			30,779	30,799
Upper Separation Creek	618	4,462	4,850	1,264	9,304	20,498
White Branch	771	2,965	3,748	264	31,354	39,102
Grand Total	**3,205**	**23,723**	**14,052**	**2,953**	**200,200**	**244,132**

Percent Breakdown

Subwatershed	Unburned/ Very Low SBS	Low SBS	Moderate SBS	High SBS	Outside Burn Area	Total
Augusta Creek-South Fork McKenzie River	2%	8%	2%	1%	87%	100%
Boulder Creek-McKenzie River	0%	0%	0%	0%	99%	100%
French Pete Creek	1%	11%	1%	0%	87%	100%
Lost Creek	1%	6%	14%	5%	74%	100%
Lower Horse Creek	3%	16%	2%	0%	79%	100%
Lower Separation Creek	1%	10%	9%	2%	78%	100%
Middle Horse Creek	3%	23%	2%	0%	72%	100%
Rebel Creek-South Fork McKenzie River	0%	25%	4%	1%	70%	100%
Upper Horse Creek	0%	0%	0%	0%	100%	100%
Upper Separation Creek	3%	22%	24%	6%	45%	100%
White Branch	2%	8%	10%	1%	80%	100%
Grand Total	**1%**	**10%**	**6%**	**1%**	**82%**	**100%**

N. Total Acres Burned:

National Forest System (45,897) Other Federal (0) State (0) Private (36)

O. Vegetation Types:

The vegetated habitat in the Horse Creek Fire Complex area varies along an elevational and aspect gradient. Four major plant series are present: Douglas-fir, grand fir, western hemlock, and Pacific silver fir. Douglas-fir series is typically found on warm, dry sites and lower to mid elevations. West-side grand fir tends to occupy cool, dry and well drained soils. Sites usually have rocky or ashy soils and are found on lower to mid elevations. Western hemlock forests are found on warm, moist sites where snow packs are usually not deep or long lasting. They are found on lower to mid elevations. Pacific silver fir is located on mid to upper elevations. The sites are cool, and wet with persistent snow packs that shorten their growing season. Deciduous shrubs that commonly dominate or co-dominate the understory are oval-leaf huckleberry (*Vaccinium ovalifolium*), big huckleberry (*V. membranaceum*), grouseberry (*V. scoparium*), dwarf huckleberry (*V. cespitosum*), fools huckleberry (*Menziesia ferruginea*), Cascade azalea (*Rhododendron albiflorum*), copperbush (*Elliottia pyroliflorus*), devil's-club (*Oplopanax horridus*), and, in the far south only, baldhip rose (*Rosa gymnocarpa*), currants (*Ribes* spp.), and creeping snowberry (*Symphoricarpos mollis*). Important evergreen shrubs include salal (*Gaultheria shallon*), dwarf Oregongrape (*Mahonia nervosa*), Pacific rhododendron (*Rhododendron macrophyllum*), deer oak (*Quercus sadleriana*), pinemat manzanita (*Arctostaphylos nevadensis*), beargrass (*Xerophyllum tenax*), and Oregon boxwood (*Paxistima myrsinites*).

P. Dominant Soils:

Dominant soils inside the fire perimeters were formed in two distinct regions, West Cascades (Chart 2) and the High Cascades (Chart 1). The change in topography accounts for the grouping of soil types across the Horse Creek Complex. The four most western fires; Rebel, Olallie, Roney and Avenue were predominantly composed of shallow very gravelly loam formed from residuum and colluvium. These areas consisted of steep slide-slopes and ridges with slopes ranging from 60 to greater than 90 percent. The infiltration rate of these soils was very high due to the coarse fragments and loose structure of the subsoil. In general the area experienced moderate to severe erosion potential due to the steep terrain. The Nash and Separation fires have a mix of gravelly sandy loams with glacial, residual and volcanic parent materials. These soils formed on high elevation flats and benches with slopes below thirty percent. The permeability of these soils was very high due to the coarse soil texture and the percentage of gravel. As a result of these factors the soil erosion hazard in the high elevation fires was predominantly moderate.

Chart 1: High Cascades Dominant Soils

Nash Soil Unit	Texture	Erosion Hazard Rating	Percent of Fire	Acres
3	loamy sand to sandy loam	severe	21	1431
16	loamy sand	moderate	3	186
67	sandy loam to loam	moderate	3	173
71	sandy loam to loam	severe	6	371
73	sandy loam to loam	moderate	6	374
92	sand	moderate	57	3842
Separation Soil Unit	**Texture**	**Erosion Hazard Rating**	**Percent of Fire**	**Acres**
3	loamy sand to sandy loam	severe	3	503
6	loamy sand to loam	slight	4	805
61	loamy sand	severe	4	729
67	sandy loam to loam	moderate	7	1186
71	sandy loam to loam	severe	6	1106
73	sandy loam to loam	moderate	46	8338
74	loam to sandy loam	moderate	7	1272
92	sand	moderate	15	2798

Chart 2: West Cascades Dominant Soils

Avenue Soil Unit	Texture	Erosion Hazard Rating	Percent of Fire	Acres
9	loamy sand to sand	severe	13	499
15	loam to sandy loam	moderate	15	583
16	loamy sand	moderate	21	817
61	loamy sand	severe	40	1560
64	sandy loam	severe	6	230
Roney Soil Unit	**Texture**	**Erosion Hazard Rating**	**Percent of Fire**	**Acres**
3	loamy sand to sandy loam	moderate	22	793
15	loam to sandy loam	moderate	11	397
16	loamy sand	severe	7	254
61	loamy sand	severe	30	1084
63	loamy sand	severe	7	266
66	sandy loam to loam	slight	20	699
Rebel Soil Unit	**Texture**	**Erosion Hazard Rating**	**Percent of Fire**	**Acres**
3	loamy sand to sandy loam	severe	20	1709
6	loamy sand to loam	slight	5	395
15	loam to sandy loam	moderate	3	225
16	loamy sand	moderate	13	1127
61	loamy sand	severe	44	3807
64	sandy loam	severe	14	1221
Ollalie Soil Unit	**Texture**	**Erosion Hazard Rating**	**Percent of Fire**	**Acres**

7	loamy sand to loam	slight	16	260
16	loamy sand	moderate	13	201
61	loamy sand	severe	45	709
66	sandy loam to loam	moderate	5	74
71	sandy loam to loam	severe	7	108
73	sandy loam to loam	moderate	11	176

Q. Geologic Types:

The burned area landscape is composed of two distinct volcanic subgroups of the Cascade Range geologic province. The four westernmost fires occupy steep, dissected mountain slopes of the West Cascades, an Eocene to Miocene volcanic range that is composed of andesitic to basaltic volcanic lava flows, mudflows and tephra. The High Cascades are Pliocene to Holocene in age, dominated by large stratovolcanoes and shield volcano remnants as well as recent lava flows, cinder cones and tephra deposits. This formerly glaciated landscape occupies a graben but forms the Cascade crest, and has been highly sculpted by Pleistocene glaciers, with abundant till and glacial landforms. Subsurface hydrothermal circulation is expressed at the ground surface in several hot springs.

R. Miles of Stream Channels by Order or Class:

Perennial: 201 Intermittent: 66

S. Transportation System (miles)

Roads:

Avenue	**9.27**
1 - BASIC CUSTODIAL CARE (CLOSED)	1.95
2 - HIGH CLEARANCE VEHICLES	2.82
3 - SUITABLE FOR PASSENGER CARS	4.50
Rebel	**12.84**
1 - BASIC CUSTODIAL CARE (CLOSED)	2.85
2 - HIGH CLEARANCE VEHICLES	4.70
3 - SUITABLE FOR PASSENGER CARS	0.02
4 - MODERATE DEGREE OF USER COMFORT	0.08
5 - HIGH DEGREE OF USER COMFORT	5.20
Separation	**8.00**
UNCLASSIFIED	1.81
1 - BASIC CUSTODIAL CARE (CLOSED)	1.44
2 - HIGH CLEARANCE VEHICLES	4.52
3 - SUITABLE FOR PASSENGER CARS	0.23
Grand Total	**30.10**

Trails:

	Outside Wilderness	Three Sisters Wilderness	Total
Mileage	**2.80**	**47.31**	**50.11**

Pacific Crest Trail: 3.5 miles – all within the Three Sisters Wilderness

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 23,724 - Low 14,052 - Moderate 2,953 - High 3,205 - Very low to unburned

Nash:

SBS	Acres	% of Fire
Unburned	405	6
Low	2681	40
Moderate	2905	43
High	746	11

Rebel:

SBS	Acres	% of Fire
Unburned	474	12
Low	7295	79
Moderate	1168	13
High	298	3

Separation:

SBS	Acres	% of Fire
Unburned	1210	6
Low	6663	35
Moderate	9217	49
High	1868	10

Olallie:

SBS	Acres	% of Fire
Unburned	173	11
Low	1151	73
Moderate	262	16
High	1	0.1

Roney:

SBS	Acres	% of Fire
Unburned	411	12
Low	2989	84
Moderate	135	4
High	26	1

Avenue:

SBS	Acres	% of Fire
Unburned	532	14
Low	2945	76
Moderate	366	9
High	14	0.4

B. Water-Repellent Soil (acres):

Low water repellency was assigned to very low to unburned area soils – there is a degree of natural hydrophobicity associated with most of the area soils. Moderate water repellency was assigned to low burned area soils. High water repellency was observed and assigned to moderate and high burn severity soils.

Fire	Low	Moderate	High
Avenue	532	2945	380
Nash	405	2681	3652
Olallie	173	1151	263
Roney	411	2989	161
Rebel	474	7295	1465
Separation	1210	6663	11084

C. Soil Erosion Hazard Rating (acres):

Fire:	**Slight (acres)**	**Moderate (acres)**	**Severe (acres)**
Nash	147	4682	1831
Separation	1382	13608	3053
Avenue	84	1400	2375
Roney	266	652	2645
Rebel	536	1436	6737
Olallie	295	464	817

D. Erosion Potential (tons/acre):

Fire	Year	Unburned	low	Moderate	High
High Cascades	2nd	0-0.04	0.35-1.67	0.93-3.38	1.13-3.53
West Cascades	2nd	0-0.08	0.39-1.86	1.04-2.39	1.22-3.7

E. Sediment Potential:

Not modeled.

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period	5-10 years	5-10 years
B. Design Chance of Success (roadwork)	90 %	90 %
C. Equivalent Design Recurrence Interval	5 years	5 years
D. Design Storm Duration	6 hours	24 hours
E. Design Storm Magnitude	1.8 inches	4.75 inches
F. Design Flow	28 cfs / mi^2	111 cfs / mi^2
G. Estimated Reduction in Infiltration	48 %	48 %
H. Adjusted Design Flow	44 cfs / mi^2	135 cfs / mi^2

Summary of Hydrologic Impacts: Rebel Fire

A. Estimated Vegetative Recovery Period	5-10 years	5-10 years
B. Design Chance of Success (roadwork)	90 %	90 %
C. Equivalent Design Recurrence Interval	5 years	5 years
D. Design Storm Duration	6 hours	24 hours
E. Design Storm Magnitude	1.8 inches	4.75 inches
F. Design Flow	69 cfs / mi^2	317 cfs / mi^2
G. Estimated Reduction in Infiltration	55 %	55 %
H. Adjusted Design Flow	184 cfs / mi^2	393 cfs / mi^2

PART V - SUMMARY OF ANALYSIS

A. Describe Critical Values/Resources and Threats (narrative):

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 Horse Creek Complex and Rebel Fire areas, 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".

Rebel Fire Values at Risk:

Value at Risk	Comments	Probability of Damage (VL, L, P, Un)	Magnitude of Consequence (Maj, Mod, Min)	Risk Determination (VH, H, Int, L, VL)	Treatment/ Recommendation
NFS Roads, Bridges, and Culverts (Safety, Property, and Natural Resources)					
Aufderheide Drive (1900)	ML 5 important road, National Scenic Byway; Road failure or diversion at stream crossings could pose a risk to life and safety (P*Maj=H), cause major property damage (P*Maj=H), and have detrimental effects to T&E Fish and Critical Habitat (P*Mod=Int)	P	Maj	H	culvert cleaning; storm patrol; hazard signage (rockfall, general burned area hazards)
1900 French Pete Creek Bridge	Bridge has sufficient capacity; no threat to footings/abutment	Un	Maj	Int	No treatment
1900 Rebel Creek Bridge	Bridge has sufficient capacity; no threat to footings/abutment	Un	Maj	Int	No treatment
1900-425	ML 2; High and moderate burn severity above; has high diversion potential and culverts with deep fill	L	Mod	H	can't close due to timber sale; access may be limited in winter for storm patrol; recommend storm patrol and drivable dips (or water bars)
1900-427	ML 2; High and moderate burn severity above; has high diversion potential and culverts with deep fill	L	Mod	H	can't close due to timber sale; access may be limited in winter for storm patrol; recommend storm

					patrol and drivable dips (or water bars)
1900-428	ML 2; Low burn severity above; low diversion potential	Un	Mod	L	No treatment
1900-429	ML 2; Functioning water bars; low burn severity above	Un	Mod	L	No treatment
1900-446	ML 2; High and moderate burn severity above; has high diversion potential and culverts with deep fill	L	Mod	H	access may be limited in winter for storm patrol; recommend storm patrol, riser end sections, and drivable dips (or water bars)
1900-455	ML (Obj 1, Oper 2); Low burn severity above; low diversion potential	Un	Mod	L	No treatment
1900-458	ML 2; Functioning water bars; low burn severity above	Un	Mod	L	No treatment
1900-567	ML 1; Closed by fire suppression	Un	Mod	L	No treatment
1900-570	ML 1; Closed by fire suppression	Un	Mod	L	No treatment
1900-571	ML 1; Closed by fire suppression	Un	Mod	L	No treatment
1900-745	ML 2; overgrown	Un	Mod	L	No treatment
1900-747	ML 2; overgrown	Un	Mod	L	No treatment
1900-902	ML (Obj 1, Oper 2); Closed by suppression	Un	Mod	L	No treatment
1900-903	ML (Obj 1, Oper 2); Closed by suppression	Un	Mod	L	No treatment
NFS Trails and Trailheads (Safety, Property, and Natural Resources)					
3324 Rebel Rock Trail (Life and Safety)	Hazard trees, slope instability, rolling rocks, and tread failure (root holes) could pose a risk to life and safety; Trail closure until Spring 2018	VL	Maj	VH	Recommend temporary closure (already in place), enforcement of closure, and signage for trail

					closure and general public information
3324 Rebel Rock Trail (Property)	Trail infrastructure damage or loss associated with expected increase in post-fire runoff and erosion	Un	Mod	L	No treatment
3323 Rebel Creek Trail (Life and Safety)	Hazard trees, slope instability, rolling rocks, and tread failure (root holes) could pose a risk to life and safety; Trail closure until Spring 2018	VL	Maj	VH	Recommend temporary closure (already in place), enforcement of closure, and signage for trail closure and general public information
3323 Rebel Creek Trail (Property)	Trail infrastructure damage or loss associated with expected increase in post-fire runoff and erosion	Un	Mod	L	No treatment
3311 French Pete Creek Trail (Life and Safety)	Hazard trees from other side of creek	Un	Maj	Int	Burned area information signs
3311 French Pete Creek Trail (Property)	Trail infrastructure damage or loss associated with expected increase in post-fire runoff and erosion	Un	Min	VL	No treatment
Rebel Trailhead (Life and Safety)	Hazard trees pose a threat to human life and safety	P	Maj	H	Fall hazard trees
Rebel Trailhead (Property)	Hazard trees pose a threat to trailhead sign, road, parking areas, and other infrastructure	P	Maj	H	Fall hazard trees
French Pete Trailhead (Life and Safety)	Not at risk from burned area	N/A	N/A	N/A	No treatment
French Pete Trailhead (Property)	Not at risk from burned area	N/A	N/A	N/A	No treatment
NFS Campgrounds and Dispersed Campsites (Safety and Property)					

French Pete Campground	One site at risk from flooding	Un	Maj	Int	Recommend closure of one site through Spring 2018; temporary closure signs
Homestead Campground	Not at risk from post-fire effects	N/A	N/A	N/A	No treatment
Hard Rock Campground	Not at risk from post-fire effects	N/A	N/A	N/A	No treatment
Red Diamond Campground	Not at risk from post-fire effects	N/A	N/A	N/A	No treatment
Fishing Access Parking Area	Located below steep catchment with debris fan; at risk of debris flow and rock fall	P	Maj	H	Recommend closure through Spring 2018; temporary closure signs
Dispersed Campsites along South Fork, Rebel Creek, and French Pete Creek	Not at risk from post-fire effects	N/A	N/A	N/A	No treatment
Water Used for Hydropower and Waters with Special Federal or State Designations on NFS lands					
South Fork McKenzie River	Wild and Scenic Study River; Some hydropower at Cougar Dam; Low potential for increased flows, sediment, and nutrient loads and impacts to ORVs (Scenery, Recreation, Fish and Prehistoric)	Un	Min	VL	No Treatment; Communicate with USACE
Soil Productivity					
Soil Productivity	Low burn severity in majority of fire; forest floor intact	P	Mod	Int	No Treatment
ESA-Threatened Fish					
Bull Trout	South Fork McKenzie River - very important for rearing, foraging, and overwintering; Mass wasting or road failure/diversion could deliver large amounts of sediment	Un	Min	VL	No treatment; Treatments to reduce risk to roads will benefit

	which could have detrimental effects to fry, juveniles, and adults				bull trout
Spring Chinook Salmon	South Fork McKenzie River - very important for spawning and rearing; French Pete Creek - important for spawning and rearing; Rebel Creek - minimal use for spawning and rearing; Mass wasting or road failure/diversion could deliver large amounts of sediment which could have detrimental effects to eggs, fry, and juveniles	P	Mod	Int	Treatments recommended to reduce risk of road failure and diversion
Bull Trout Critical Habitat	Increased temperature, flows, sediment, debris flows and nutrient loads may impact habitat and water quality in South Fork; Mass wasting or road failure/diversion could deliver large amounts of sediment which could have long-term impacts to Critical Habitat; Because there is no bull trout spawning, magnitude of consequence would be Minor	Un	Min	VL	No treatment; Treatments to reduce risk to roads will benefit bull trout CH
Spring Chinook Salmon Critical Habitat	Increased temperature, flows, sediment, debris flows and nutrient loads may impact habitat and water quality; Mass wasting or road failure/diversion could deliver large amounts of sediment which could have long-term impacts to Critical Habitat; Because South Fork is a very important spawning stream, magnitude of consequences would be Moderate	P	Mod	Int	Treatments recommended to reduce risk of road failure and diversion
ESA-Endangered Wildlife					
Northern Spotted Owl	Additional post-fire tree mortality expected, but unlikely to impact individual owls; BAER treatments are not likely to	P	Min	Low	No treatments; No Design Criteria for other BAER

	adversely affect owls				treatments because they are not likely to adversely affect owls
Northern Spotted Owl Critical Habitat and Occupied Suitable Habitat	21% of fire area is CH; 65% was suitable habitat. Most of the fire area was low intensity burn and a high amount of post-fire tree mortality is not expected; One NSO Activity Center occur within the fire area, one borders the fire area and four other owl territories overlap the fire area slightly; A minor amount of suitable will become unsuitable due to future tree mortality but it will not affect the current functionality of owl nest territories due to the high amount of suitable habitat post-fire	P	Min	Low	No treatments; No Design Criteria for other BAER treatments because they are not likely to adversely affect owls
Heritage Resources					
Heritage Resources	All sites are located within low to moderate burn severity; little threat from erosion or unauthorized removal of artifacts	Un	Maj	Int	No treatment
Botanical Resources					
Native Plant Communities	Noxious weeds at risk of expansion and impact to native communities	VL	Mod	VH	At risk by spread of weeds (slender false brome, Himalayan blackberry); time and materials for early detection rapid response (17 acres)

Avenue Fire Values at Risk

Value at Risk	Comments	Probability of Damage[1] (VL, L, P, Un)	Magnitude of Consequence[2] (Maj, Mod, Min)	Determination (VH, H, Int, L, VL)	Treatment/ Recommendation
Private Land near Foley Springs and Lower Horse Creek					
Life and Safety	Minor increases in peak flows and sediment delivery from burned area are expected	N/A	N/A	N/A	Communicate with NRCS
Property	Minor increases in peak flows and sediment delivery from burned area are expected	N/A	N/A	N/A	Communicate with NRCS
Water Systems	Minor increases in peak flows and sediment delivery from burned area are expected	N/A	N/A	N/A	Communicate with NRCS
Lane County Roads, Bridges, and Culverts					
2638 Horse Creek Road (west of Avenue Creek)	Provides access to private land; Increases in peak flows and sediment delivery from burned area are expected	N/A	N/A	N/A	Communicate with Lane County need to evaluate culverts for increases in sediment and post-fire flows.
2638 Horse Creek Bridge	Minor increases in peak flows and sediment delivery from burned area are expected	N/A	N/A	N/A	Communicate with Lane County
2638 Avenue Creek Bridge	Increases in peak flows and sediment delivery from burned area are expected	N/A	N/A	N/A	Communicate with Lane County need to evaluate culverts for increases in sediment and post-fire flows.
NFS Roads, Bridges, and Culverts (Safety, Property, and Natural Resources)					

2638 Horse Creek Road (NFS; east of Avenue Creek)	ML 2, important road; Road failure or diversion at stream crossings could pose a risk to life and safety (P*Maj=H), cause major property damage (P*Maj=H), and have detrimental effects to T&E Fish and Critical Habitat (P*Mod=Int)	P	Maj	H	Dip and armoring for stabilization at "Blowout Creek"; culvert inlet and channel cleanouts; storm patrol
2638-348	ML (Obj 1, Oper 2); Low severity and unburned above	Un	Mod	L	No treatment
2638-352 (up to Avenue Creek)	ML 2; Mostly low severity above	P	Mod	Int	No treatment
2638-352 (past Avenue Creek)	ML 1; not accessible	P	Min	L	No treatment
2638-353	ML 1; already closed	Un	Min	VL	No treatment
2638-354	ML 1; closed by supression	Un	Min	VL	No treatment
2638-355	ML 1; already closed	Un	Min	VL	No treatment
2638-357	ML 1; already closed	Un	Min	VL	No treatment
2638-460	ML (Obj 1, Oper 2)	Un	Min	VL	No treatment
1993	ML 3, important road	L	Mod	H	storm patrol; culvert, channel cleanouts
1993-290	ML 2; Owl Creek crossing below burned area	P	Min	L	No treatment
1993-300	ML 2; Low severity and unburned above	P	Min	L	No treatment
1993-306	ML 2; Low severity and unburned above	P	Min	L	No treatment
1993-315	ML 1; closed by supression	N/A	N/A	N/A	No treatment
1993-400	ML 2; ridge top road	Un	Min	VL	No treatment
1993-404	ML 2; ridge top road	Un	Min	VL	No treatment
1993-720	ML (Obj 1, Oper 2); Mostly low severity and unburned above	P	Min	L	No treatment
NFS Trails and Trailheads (Safety and Property)					

3529 Olallie Trail (Life and Safety)	Hazard trees, slope instability, rolling rocks, and tread failure (root holes) could pose a risk to life and safety; Trail closure until Spring 2018	P	Maj	H	Recommend temporary closure (already in place), enforcement of closure, and signage for trail closure, and signage for burned area information
3529 Olallie Trail (Property)	Trail infrastructure damage or loss associated with expected increase in post-fire runoff and erosion; Estimate 1 mile of trail requiring rolling grade dips, 1 mile of trail outsloping.	P	Min	L	No treatment
NFS Campgrounds and Dispersed Campsites (Safety and Property)					
Horse Creek Campground	Minor increases in peak flows and sediment delivery from burned area are not expected to result in damaging effects	Un	Min	VL	No treatment
Dispersed Campsites along Horse Creek	Minor increases in peak flows and sediment delivery from burned area are not expected to result in damaging effects	Un	Min	VL	No treatment
Municipal Water Supply					
Horse Creek and McKenzie River	McKenzie River is municipal water for downstream communities (UL*Min=VL); May be other water right/withdrawals from Horse Creek (P*Min=L) and McKenzie River (UL*Min=VL); Potential for minor increases in flows, suspended sediment, and nutrient loads from cumulative effect of all upstream burned acreage.	P	Min	L	Communicate with EWEB and NRCS
Soil Productivity					
Soil Productivity	Low burn severity in majority of fire; forest floor intact	P	Mod	Int	No Treatment
ESA-Threatened Fish					

Bull Trout	Horse Creek - very important for rearing, foraging, and overwintering; Mass wasting or road failure/diversion could deliver large amounts of sediment which could have detrimental effects to fry, juveniles, and adults	Un	Min	VL	No treatment; Treatments to reduce risk to roads will benefit bull trout
Spring Chinook Salmon	Horse Creek - very important for spawning and rearing; Mass wasting or road failure/diversion could deliver large amounts of sediment which could have detrimental effects to eggs, fry, and juveniles	P	Mod	Int	Treatments recommended to reduce risk of road failure and diversion
Bull Trout Critical Habitat	Increased temperature, flows, sediment, debris flows and nutrient loads may impact habitat and water quality in Horse Creek; Mass wasting or road failure/diversion could deliver large amounts of sediment which could have long-term impacts to Critical Habitat; Because there is no bull trout spawning, magnitude of consequence would be Minor	P	Min	L	No treatment; Treatments to reduce risk to roads will benefit bull trout CH
Spring Chinook Salmon Critical Habitat	Increased temperature, flows, sediment, debris flows and nutrient loads may impact habitat and water quality in Horse Creek; Mass wasting or road failure/diversion could deliver large amounts of sediment which could have long-term impacts to Critical Habitat; Because Horse Creek is a very important spawning stream, magnitude of consequences would be Moderate	P	Mod	Int	Treatments recommended to reduce risk of road failure and diversion
ESA-Endangered Widlife					

Northern Spotted Owl	Additional post-fire tree mortality expected, but unlikely to impact individual owls; BAER treatments are not likely to adversely affect owls	P	Min	Low	No treatments; No Design Criteria for other BAER treatments because they are not likely to adversely affect owls
Northern Spotted Owl Critical Habitat and Occupied Suitable Habitat	77% of fire area is CH; 72% was suitable habitat. Most of the fire area was low intensity burn and a high amount of post-fire tree mortality is not expected; Four NSO Activity Center occur within the fire area and seven other owl territories overlap the fire area somewhat; A minor amount of suitable will become unsuitable due to future tree mortality but it will not affect the current functionality of owl nest territories due to the high amount of suitable habitat post-fire	P	Min	Low	No treatments; No Design Criteria for other BAER treatments because they are not likely to adversely affect owls
Heritage Resources					
Heritage Resources	No known resources	N/A	N/A	N/A	No treatment
Botanical Resources					
Native Plant Communities	Noxious weeds at risk of expansion and impact to native communities	VL	Mod	Very High	At risk by spread of weeds (slender false brome and Himalayan blackberry); time and materials for early detection rapid response (1.5 acres)

Ollalie Fire Values at Risk:

Value at Risk	Comments	Probability of Damage[1] (VL, L, P, Un)	Magnitude of Consequence[2] (Maj, Mod, Min)	Determination (VH, H, Int, L, VL)	Treatment/ Recommendation
NFS Trails and Trailheads (Safety and Property)					
3529 Ollalie Trail (Life and Safety)	Hazard trees, slope instability, rolling rocks, and tread failure (root holes) could pose a risk to life and safety; Trail closure until Spring 2018	P	Maj	H	Recommend temporary closure (already in place), enforcement of closure, and signage for trail closure and general public information
3529 Olallie Trail (Property)	Trail infrastructure damage or loss associated with expected increase in post-fire runoff and erosion	P	Min	L	No treatment
4100 Olallie Mountain Trail (Life and Safety)	Hazard trees, slope instability, rolling rocks, and tread failure (root holes) could pose a risk to life and safety; Trail closure until Spring 2018	P	Maj	H	Recommend temporary closure (already in place), enforcement of closure, and signage for trail closure and general public information (signage already covered by Ollalie Trail 3529)
4100 Olallie Mountain Trail (Property)	Trail infrastructure damage or loss associated with expected increase in post-fire runoff and erosion	P	Min	L	No treatment
Soil Productivity and Hydrologic Function					
Soil Productivity	Low burn severity in majority of fire; forest floor intact	P	Mod	Int	No Treatment
ESA-Endangered Widlife					
Northern Spotted Owl	Additional post-fire tree mortality expected, but unlikely to impact individual owls; BAER treatments will have no effect on owls	P	Min	Low	No treatments; No Design Criteria for other BAER treatments because no effects likely

Northern Spotted Owl Critical Habitat and Occupied Suitable Habitat	No CH in fire area, but 54% of the fire area is suitable habitat. Most of the fire area was low intensity burn and a high amount of post-fire tree mortality is not expected; two owl territories overlap the fire area; A minor amount of suitable habitat will become unsuitable due to future tree mortality but it will not affect the current functionality of owl nest territories due to the high amount of suitable habitat post-fire	P	Min	Low	No treatments; No Design Criteria for other BAER treatments because no effects likely
Heritage Resources					
Heritage Resources	All sites are located within low to moderate burn severity; little threat from erosion or unauthorized removal of artifacts	Un	Maj	Int	No treatment
Botanical Resources					
Native Plant Communities	Noxious weeds at risk of expansion and impact to native communities; no known infestation	Un	Mod	Low	No treatment

Roney Fire Values at Risk:

Value at Risk	Comments	Probability of Damage[1] (VL, L, P, Un)	Magnitude of Consequence[2] (Maj, Mod, Min)	Determination (VH, H, Int, L, VL)	Treatment/ Recommendation
Private Land near Lower Horse Creek					
Life and Safety	Minor increases in peak flows and sediment delivery from burned area are expected	N/A	N/A	N/A	Communicate with NRCS
Property	Minor increases in peak flows and sediment delivery from burned area are expected	N/A	N/A	N/A	Communicate with NRCS
Water Systems	Minor increases in peak flows and sediment	N/A	N/A	N/A	Communicate with NRCS

	delivery from burned area are expected				
Lane County Roads, Bridges, and Culverts					
2638 Horse Creek Bridge	Minor increases in peak flows and sediment delivery from burned area are expected	N/A	N/A	N/A	Communicate with Lane County
NFS Trails and Trailheads (Safety and Property)					
3514 Horse Creek Trail (Life and Safety)	Hazard trees, slope instability, rolling rocks, and tread failure (root holes) could pose a risk to life and safety; Trail closure until Spring 2018	P	Maj	H	Recommend temporary closure (already in place), enforcement of closure, and signage for trail closure and general public information
3514 Horse Creek Trail (Property)	Trail infrastructure damage or loss associated with expected increase in post-fire runoff and erosion	Un	Min	VL	No treatment
NFS Campgrounds and Dispersed Campsites (Safety and Property)					
Horse Creek Campground	Minor increases in peak flows and sediment delivery from burned area are not expected to result in damaging effects	Un	Min	VL	No treatment
Dispersed Campsites along Horse Creek	Minor increases in peak flows and sediment delivery from burned area are not expected to result in damaging effects	Un	Min	VL	No treatment
Municipal Water Supply					
Horse Creek and McKenzie River	McKenzie River is municipal water for downstream communities (UL*Min=VL); May be other water right/withdrawals from Horse Creek (P*Min=L) and McKenzie River (UL*Min=VL); Potential for minor increases in flows, suspended sediment, and nutrient loads from cumulative effect of all upstream burned acreage.	P	Min	L	Communicate with EWEB and NRCS
Soil Productivity					
Soil Productivity	Low burn severity in majority of fire; forest floor intact	P	Mod	Int	No Treatment

ESA-Threatened Fish					
Bull Trout	Horse Creek and Separation Creek - very important for rearing, foraging, and overwintering; Potential spawning in Separation Creek; Mass wasting or major trail failure/diversion could deliver large amounts of sediment which could have detrimental effects to juveniles and adults	Un	Min	VL	No treatment; Treatments to reduce risk to trails will benefit bull trout
Spring Chinook Salmon	Horse Creek and Separation Creek - very important for spawning and rearing; Mass wasting or major trail failure/diversion could deliver large amounts of sediment which could have detrimental effects to eggs, fry, and juveniles	P	Mod	Int	Treatments recommended to reduce risk of trail failure and diversion
Bull Trout Critical Habitat	Increased temperature, flows, sediment, debris flows and nutrient loads may impact habitat and water quality in Horse Creek; Mass wasting or major trail failure/diversion could deliver large amounts of sediment to Critical Habitat	P	Min	L	No treatment; Treatments to reduce risk to trails will benefit bull trout CH
Spring Chinook Salmon Critical Habitat	Increased temperature, flows, sediment, debris flows and nutrient loads may impact habitat and water quality in Horse Creek; Mass wasting or major trail failure/diversion could deliver large amounts of sediment to Critical Habitat	P	Mod	Int	Treatments recommended to reduce risk of trail failure and diversion
ESA-Endangered Widlife					
Northern Spotted Owl	Additional post-fire tree mortality expected, but unlikely to impact individual owls; BAER treatments will have no effect on owls	P	Min	Low	No treatments; No Design Criteria for other BAER treatments because no effects likely

Northern Spotted Owl Critical Habitat and Occupied Suitable Habitat	Only 6 acres of CH but 93% of the fier area is suitable habitat. Most of the fire area was low intensity burn and a high amount of post-fire tree mortality is not expected; One NSO Activity Center occurs within the fire area and two other nest sites are near the fire area; A minor amount of suitable will become unsuitable due to future tree mortality but it will not affect the current functionality of owl nest territories due to the high amount of suitable habitat post-fire	P	Min	Low	No treatments; No Design Criteria for other BAER treatments because no effects likely
Heritage Resources					
Heritage Resources	All sites are located within low to moderate burn severity; little threat from erosion or unauthorized removal of artifacts	Un	Maj	Int	No treatment
Botanical Resources					
Native Plant Communities	Noxious weeds at risk of expansion and impact to native communities; no known infestation	Un	Mod	Low	No treatment

Separation Fire Values at Risk:

Value at Risk	Comments	Probability of Damage[1] (VL, L, P, Un)	Magnitude of Consequence[2] (Maj, Mod, Min)	Determination (VH, H, Int, L, VL)	Treatment/ Recommendation
ODOT Roads and Culverts					
Highway 242	Hazard trees; low potential for drainage issues	P	Maj	H	No treatment; Coordinate with ODOT and Deschutes NF
NFS Roads and Culverts (Safety and Property)					
2649 Scott Creek Road	ML 2	P	Min	L	No treatment
2649-686	ML 1	P	Min	L	No treatment
2649-687	ML (Obj 1, Oper 2)	P	Min	L	No treatment
2649-689	ML 1	P	Min	L	No treatment
2649-690	ML (Obj 1, Oper 2)	P	Min	L	No treatment
2649-770	ML 2	P	Min	L	No treatment
NFS Trails (Safety and Property)					
3511 Foley Ridge Trail (Life and Safety)	Hazard trees, slope instability, rolling rocks, and tread failure (root holes) could pose a risk to life and safety; Trail closure until Spring 2018	P	Maj	H	Recommend temporary closure (already in place), enforcement of closure, and signage for trail closure and general public information
3511 Foley Ridge Trail (Property)	High risk of loss of property loss due to increased erosion potential from high and moderate severity burn	L	Mod	H	Temporary drainage control structures (rolling grade dips)
3524 Louise Creek Trail (Life and Safety)	Hazard trees, slope instability, rolling rocks, and tread failure (root holes) could pose a risk to life and safety; Trail closure until Spring 2018	P	Maj	H	Recommend temporary closure (already in place), enforcement of closure, and signage for trail closure and

					general public information
3524 Louise Creek Trail (Property)	High risk of loss of property loss due to increased erosion potential from high and moderate severity burn	L	Mod	H	Temporary drainage control structures (rolling grade dips)
4352 Buck Meadows Trail (Life and Safety)	Hazard trees, slope instability, rolling rocks, and tread failure (root holes) could pose a risk to life and safety; Trail closure until Spring 2018	P	Maj	H	Recommend temporary closure (already in place), enforcement of closure, and signage for trail closure and general public information
4352 Buck Meadows Trail (Property)	High risk of loss of property loss due to increased erosion potential from high and moderate severity burn	L	Mod	H	Temporary drainage control structures (rolling grade dips)
3528 Obsidian Trail	Hazard trees, slope instability, rolling rocks, and tread failure (root holes) could pose a risk to life and safety; Low risk of loss of property (Un*Min=VL); Trail closure until Spring 2018	P	Maj	H	Recommend temporary closure (already in place), enforcement of closure, and signage for trail closure and general public information
3546 James Creek Trail (Life and Safety)	Hazard trees, slope instability, rolling rocks, and tread failure (root holes) could pose a risk to life and safety; Trail closure until Spring 2018	P	Maj	H	Recommend temporary closure (already in place), enforcement of closure, and signage for trail closure and general public information
3546 James Creek Trail (Property)	High risk of loss of property loss due to increased erosion potential from high and moderate severity burn	L	Mod	H	Temporary drainage control structures (rolling grade dips)
3547 Linton Meadows Trail	Hazard trees, slope instability, rolling rocks, and tread failure (root holes) could pose a risk to life and safety; Low risk of loss of property (Un*Min=VL); Trail closure until Spring 2018	P	Maj	H	Recommend temporary closure (already in place), enforcement of closure, and signage for trail closure and general public information
4343 Substitute Point Trail	Hazard trees, slope instability, rolling rocks, and tread failure (root holes) could pose a risk to life and safety; Low risk of loss of property	P	Maj	H	Recommend temporary closure (already in place), enforcement of closure, and

	(Un*Min=VL); Trail closure until Spring 2018				signage for trail closure and general public information
4348 Eileen Lake Trail	Hazard trees, slope instability, rolling rocks, and tread failure (root holes) could pose a risk to life and safety; Low risk of loss of property (Un*Min=VL); Trail closure until Spring 2018	P	Maj	H	Recommend temporary closure (already in place), enforcement of closure, and signage for trail closure and general public information
Trail Junction Signs	Trail junction signs are needed to ensure people don't get lost in the Wilderness (it has happened before); Substitute Point Trail, Foley Ridge Trail, Buck Meadows Trail	P	Maj	H	Reinstall trail signage at 3 key trail junctions
Municipal Water Supply					
Horse Creek, Lost Creek, and McKenzie River	McKenzie River is municipal water for downstream communities (UL*Min=VL); May be other water right/withdrawals from Horse Creek (P*Min=L) and McKenzie River (UL*Min=VL); Potential for minor increases in flows, suspended sediment, and nutrient loads from cumulative effect of all upstream burned acreage.	P	Min	L	Communicate with EWEB and NRCS
Soil Productivity					
Soil Productivity	Moderate burn severity in majority of fire with some high patches making it more vulnerable to erosion; Treatments would not be economical or very effective; Signs of natural recovery are already occuring	L	Mod	H	No Treatment
ESA-Threatened Fish					
Bull Trout	Horse Creek, Separation Creek, and Lost Creek - very important for rearing, foraging, and overwintering, but very limited connectivity to fire	Un	Min	VL	No treatment

Spring Chinook Salmon	Horse Creek, Separation Creek, and Lost Creek - very important for spawning and rearing, but very limited connectivity to fire	Un	Min	VL	No treatment
Bull Trout Critical Habitat	Very low risk of impacts to CH due to limited connectivity to fire	Un	Min	VL	No treatment
Spring Chinook Salmon Critical Habitat	Very low risk of impacts to CH due to limited connectivity to fire	Un	Min	VL	No treatment
ESA-Endangered Widlife					
Northern Spotted Owl	Additional post-fire tree mortality expected, but could impact individual owls by reducing nesting habitat which is already at low levels; BAER treatments are not likely to adversely affect owls	L	Mod	High	No treatments because no effective treatments are known; No Design Criteria for other BAER treatments because they are not likely to adversely affect owls
Northern Spotted Owl Critical Habitat and Occupied Suitable Habitat	No CH in fire area, but 13% of the fire area on the northern and western side is suitable habitat. Over half the fire area burned with moderate to high severity. Three suboptimal owl territories were burned to the point of likely being non-viable for nesting. Two other suboptimal territories were pushed further toward non-viability. Additional post-fire tree mortality could reduce the viability of these territories further.	L	Mod	High	No treatments because no effective treatments are known; No Design Criteria for other BAER treatments because they are not likely to adversely affect owls
Heritage Resources					
Heritage Resources	All sites are located within low to moderate burn severity; little threat from erosion or unauthorized removal of artifacts	Un	Maj	Int	No treatment
Botanical Resources					
Native Plant Communities	Noxious weeds at risk of expansion and impact to native communities	VL	Mod	Very High	At risk by spread of weeds (slender false brome); time

					and materials for early detection rapid response (87 acres)

Nash Fire Values at Risk:

Value at Risk	Comments	Probability of Damage[1] (VL, L, P, Un)	Magnitude of Consequence[2] (Maj, Mod, Min)	Determination (VH, H, Int, L, VL)	Treatment/ Recommendation
NFS Trails (Safety and Property)					
3524 Louise Creek Trail (Life and Safety)	Hazard trees, slope instability, rolling rocks, and tread failure (root holes) could pose a risk to life and safety; Trail closure until Spring 2018	P	Maj	H	Recommend temporary closure (already in place), enforcement of closure, and signage for trail closure and general public information
3524 Louise Creek Trail (Property)	Low risk of loss of property loss in burned area	P	Min	L	No treatment
3546 James Creek Trail (Life and Safety)	Hazard trees, slope instability, rolling rocks, and tread failure (root holes) could pose a risk to life and safety; Trail closure until Spring 2018	P	Maj	H	Recommend temporary closure (already in place), enforcement of closure, and signage for trail closure and general public information
3546 James Creek Trail (Property)	Low risk of loss of property loss in burned area	L	Min	L	No treatment
Pacific Crest Trail/Mesa Creek (Life and Safety)	Hazard trees, slope instability, rolling rocks, and tread failure (root holes) could pose a risk to life and safety; Trail closure until Spring 2018	P	Maj	H	Recommend temporary closure (already in place), enforcement of closure, and signage for trail closure and

					general public information
Pacific Crest Trail/Mesa Creek (Property)	Low risk of loss of property loss in burned area	P	Min	L	No treatment
Pacific Crest Trail/North of Mesa Creek (Life and Safety)	Hazard trees, slope instability, rolling rocks, and tread failure (root holes) could pose a risk to life and safety; Trail closure until Spring 2018	P	Maj	H	Recommend temporary closure (already in place), enforcement of closure, and signage for trail closure and general public information
Pacific Crest Trail/North of Mesa Creek (Property)	High risk of loss of property loss due to increased erosion potential from high and moderate severity burn	L	Mod	H	Temporary drainage control structures (rolling grade dips)
Municipal Water Supply					
Horse Creek and McKenzie River	McKenzie River is municipal water for downstream communities (UL*Min=VL); May be other water right/withdrawals from Horse Creek (P*Min=L) and McKenzie River (UL*Min=VL); Potential for minor increases in flows, suspended sediment, and nutrient loads from cumulative effect of all upstream burned acreage.	P	Min	L	Communicate with EWEB and NRCS
Soil Productivity					
Soil Productivity	Moderate burn severity in majority of fire with some high patches making it more vulnerable to erosion; Treatments would not be economical or very effective; Signs of natural recovery are already occuring	L	Mod	H	No Treatment
ESA-Threatened Fish					
Bull Trout	Horse Creek and Separation Creek - very important for rearing, foraging, and	Un	Min	VL	No treatment

	overwintering, but very limited connectivity to fire				
Spring Chinook Salmon	Horse Creek and Separation Creek - very important for spawning and rearing, but very limited connectivity to fire	Un	Min	VL	No treatment
Bull Trout Critical Habitat	Very low risk of impacts to CH due to limited connectivity to fire	Un	Min	VL	No treatment
Spring Chinook Salmon Critical Habitat	Very low risk of impacts to CH due to limited connectivity to fire	Un	Min	VL	No treatment
ESA-Endangered Widlife					
Northern Spotted Owl	Additional post-fire tree mortality expected, but unlikely to impact individual owls; BAER treatments will have no effect on owls	P	Min	Low	No treatments; No Design Criteria for other BAER treatments because no effects likely
Northern Spotted Owl Critical Habitat and Occupied Suitable Habitat	No CH in fire area, and only 9% of the fire area on the western side is suitable habitat. Most of the fire area in the suitable habitat was low intensity burn and a high amount of post-fire tree mortality is not expected there; two owl territories overlap the fire area and are expected to remain suboptimal (as opposed to non-viable) for nesting because the Nash Fire was outside their Core Areas	P	Min	Low	No treatments; No Design Criteria for other BAER treatments because no effects likely
Heritage Resources					
Heritage Resources	All sites are located within low to moderate burn severity; little threat from erosion or unauthorized removal of artifacts	Un	Maj	Int	No treatment
Botanical Resources					
Native Plant Communities	Noxious weeds at risk of expansion and impact to native communities; no known infestation	Un	Mod	Low	No treatment

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 Milli BAER Team are specifically designed to achieve the following results.

Proposed Land Treatments
The objective of the land treatments are to:

1. Promote and protect native and naturalized vegetative recovery by reducing the spread of noxious weeds (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. (R2, R3, R4, T1)
2. Reduce sedimentation into streams degrading water quality (R2, R3, R4, T1-T7)
3. Improve road drainage by increasing ditch and catchment basin capacity to reduce the potential for road failure due to increased flows (R2, R3)

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 and traveling State Hwy 242 Scenic Byway. (P1, P3, P4)
2. Coordinate with state agencies on posting of hazard warning signs along State Hwy 242 (P1)
3. Protect worker and public safety by removing hazard trees at trailheads and within the vicinity of road and trail work. (R2, R3, P5)

Proposed Channel Treatments:
There are no proposed channel treatments.

C. Probability of Completing Treatment Prior to Damaging Storm or Event:
Land 70% Channel N/A Roads/Trails 75 % Protection/Safety 90 %

D. Probability of Treatment Success

Treatment	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): $950,000

F. Cost of Selected Alternative (Including Loss): $350,000

G. Skills Represented on Burned-Area Survey Team:

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

Team Leader: Fred Levitan

Email: flevitan@fs.fed.us Phone: (541) 225-6366

Team Members:

Team Member	**Specialty**
Fred Levitan	Team Leader
Sarah Brame	Soils
Madeleine Smith	Soils (t)
Kate Meyer	Fisheries
Emily Fudge	Hydrology
Mark Richardson	Hydrology (t)
Dylan McCoy	Recreation/Trails
Wayne Chevalier	Recreation/Trails (t)
Jason Nez	Heritage
Evan Wernecke	Engineering
Joe Doerr	Wildlife
Tom Bates	Botany
Jeremy Hobson	GIS

H. Treatment Narrative:

Land Treatments:

L1 - Invasive Weed Detection and Treatment: Invasive plant detection and treatment along the Forest Service roads, road 19, and highway 242 that were of high to moderate burn severity and where non-native invasive plants are absent or present in small amounts, will be necessary to prevent spread and dispersal of non-native invasive plants into newly burned and disturbed areas. It is also recommended that areas of low SBS. Although moderate and low SBS areas will have some intact vegetation or may experience needle fall, it is not sufficient to prohibit the spread and establishment of key invasive plants. Key species that will targeted for survey and control, such as Slender false brome and Himalayan blackberry, are able to survive, establish and spread even in low and moderately soil burn severity areas. The focus will be on burned locations adjacent to known weed sites, and will have a greater potential for invasive plants to establish. The road systems are primary vectors for weed spread and Early Detection/Rapid Response (EDRR) will allow treatments to occur before these species are able to spread.

EDRR will occur on approximately 105 acres and estimated invasive plant treatments to occur across 20 acres. **Total request is for $26,375.**

Locations: 1) Scattered inventoried sites along Rd. 19, and FSRs off of Rd. 19, 2) Scattered inventoried sites along the North perimeter of the Avenue fire, 3) Scattered inventoried sites along State Hwy 242 within the Separation Fire perimeter.

Treatment	Units	Unit Cost	# of Units	Total Cost
Invasive Plant Surveys/detection and treatment	Acres	$250.00	105	$26,375

Channel Treatments:
None proposed.

Road and Trail Treatments:

Road Treatments:

R2 – **Storm Proofing**: Storm proofing drainage features where identified in areas with high and moderate burn severity. Activity will include cleaning culverts and increasing ditch and catchment basin capacity where they exist to handle short-term post-fire flows, sediment and debris. **Total request is for $5,544.00**

Locations:
Avenue Fire: 1) FSR 2638000 (between Avenue Creek and Blowout Creek)
Rebel Fire: 1) FSR 1900000; 2) FSR 1900425; 3) FSR 1900427; 4) FSR 1900446

Treatment	Units	Unit Cost	# of Units	Total Cost
Avenue Fire - Storm Proofing	Miles	$840	1.7	$1,428
Rebel Fire – Storm Proofing	Miles	$840	4.9	$4,116

R3 – Install Drainage Features: Roads downslope or within the high and moderate burn severity areas were found to have inadequate drainage for post-fire short-term increased storm runoff. These have been identified at risk for gullying, loss of adequate water distribution and possible fill or ditch failure. Installation of additional drainage features (i.e drain dips and drain sags, both armored and native surfaced) will provide increased capacity and reduce risk from fillslope erosion and downcutting to the road infrastructure. The structures also reduce adverse effects to soil, water quality, and aquatic habitat from fillslope erosion. This request also includes felling of hazard trees along the portion of road to be worked on to mitigate safety concerns. **Total request is for $4,750.**

Locations:
Avenue Fire: 1) FSR 2638000 (between Avenue Creek and Blowout Creek)
Rebel Fire: 1) FSR 1900425; 2) FSR 1900427; 3) FSR 1900446

Treatment	Units	Unit Cost	# of Units	Total Cost
Avenue Fire - Drainage Feature Installation	Each	$560	2	$1,120
Rebel Fire - Drainage Feature Installation	Each	$1,210	3	$3,630

R4- Storm Patrol: Storm inspection/response will keep culvert and drainage features functional by cleaning sediment and debris from in and around features between or during storms. This work will be accomplished through Forest Service Road Crew, equipment rental, and general labor. **Total request is for $7,500.**

Locations:
Avenue Fire: 1) FSR 2638000 (between Avenue Creek and Blowout Creek)
Rebel Fire: 1) FSR 1900000; 2) FSR 1900425; 3) FSR 1900427; 4) FSR 1900446

T1 - Trail Stabilization

Work will include installing drainage features in the form of rolling grade dips, trail outsloping and slough-removal. This work is necessary to protect the trail property asset by diverting anticipated increases in surface runoff from the trail tread. Trails are listed in order of highest priority, with the highest at the top of the list. TOTAL REQUEST AMOUNT IS $30,675

Trail Name and #	Units	Unit Cost	# of Units	Total Cost
Pacific Crest Trail #2000	Miles	$6,135	1.25	$7,669
Foley Ridge Trail #3511	Miles	$6,135	1.5	$9,203
Louise Creek Trail #3524	Miles	$6,135	0.75	$4,601
Buck Meadows Trail #4352	Miles	$6,135	0.75	$4,601
James Creek Trail #3546	Miles	$6,135	0.75	$4,601

Protection/Safety Treatments:

P1 – Road Hazard Signs: Signs will inform users of the dangers associated with entering and recreating within the burned area. Wording for the large warning signs along State Hwy 242 (both ends) will be coordinated with Oregon Department of Transportation (ODOT) and Deschutes National Forest. **Total request is for $2,000**

Locations:
Rebel Fire: Small hazard warning signs located at intersection of FSR 1900000 and the fire perimeter. 1 sign for each direction of travel.
Separation Fire: Large hazard warning signs on State Hwy 242 coordinate with Deschute NF so as not to duplicate work from the Milli Fire.

Treatment	Units	Unit Cost	# of Units	Total Cost
P1 - Installation of warning sign 30x48	Sign/Post	$400	2	$800
P1a - Installation of warning sign 42x60	Sign/Post	$600	2	$1,200

P3 – Burned-Area Informational Signage

Work will include purchase of durable burned-area informational sign, post, hardware, and installation of these units at trailhead and other locations. Burned-area informational signs provide a safety and ecological message narrative for visitors to affected areas, helping to ensure visitor safety and maintenance of natural features of the landscape. TOTAL REQUEST AMOUNT IS $6,800

Item	Units	Unit Cost	# of Units	Total Cost
Burned-area Informational Sign	Sign	$400	17	$6,800

P4 – Flood Hazard Signs

Work will include design, purchase, and installation of quality flood hazard signs in areas at risk of becoming affected. These signs will help ensure the safety of areas visitors. TOTAL REQUEST AMOUNT IS $300

Item	Units	Unit Cost	# of Units	Total Cost
Flood Hazard Informational Sign	Sign	$150	2	$300

P5 – Hazard Tree Mitigation

Work will include falling and partial bucking of hazard trees threatening the safety of moving and stationary visitors to Rebel Trailhead and their vehicles and belongings. TOTAL REQUEST AMOUNT IS $500

Item	Units	Unit Cost	# of Units	Total Cost
Hazard Tree	Tree	$50	10	$500

C1 – Coordination and Management

Coordination, Implementation Tracking and Required Reporting of Authorized Emergency Response Actions

	Rate	Days	Cost
Staff Officer (GS-13)	$561	2	$1,122
Forest BAER Coordinator (GS-11)	$336	5	$1,680
		Total Cost	**$2,802**

In addition, associated emergency consultation required under the Endangered Species Act (ESA) for activities obligated under ID-FSM2520-2014-1 need to be considered in the BAER funding request when emergency response actions are authorized. These are accumulated tasks above the normal program of work and cannot recognized in out-year program planning. Because implementation of approved BAER response actions trigger these required tasks and the unit's allocated budget does not account for these obligations, BAER funding is the appropriate authorization to ensure this coordination and consultation is completed.

Emergency Consultation on Implementation of Authorized Emergency Response Actions

	Rate	Days	Cost
Forest Wildlife Biologist (GS-12)	$479	2	$958
Forest Fish Biologist (GS-12)	$434	2	$868
		Total Cost	**$1,826**

NHPA Compliance for Implementation of Authorized Emergency Response Actions

	Rate	Days	Cost
District Archeologist (GS-11)	$439	5	$2,195
		Total Cost	**$2,195**

Total Request is for $6,823

I. Monitoring Narrative: No monitoring needs identified

Part VI – Emergency Stabilization Treatments and Source of Funds

			NFS Lands		
		Unit	# of		Other
Line Items	Units	Cost	Units	BAER $	$
A. Land Treatments					
L1 - Invasives Detection/Treatment	acres	250	105.5	$26,375	$0
				$0	$0
Insert new items above this line!				$0	$0
Subtotal Land Treatments				$26,375	$0
B. Channel Treatments					
No treatments recommended				$0	$0
				$0	$0
Insert new items above this line!				$0	$0
Subtotal Channel Treatments				$0	$0
C. Road and Trails					
R2 - Stormproofing	miles	840	6.6	$5,544	$0
R3 - Install Drainage Features	each	560	2	$1,120	$0
R3a - Install Drainage Features	each	1,210	3	$3,630	$0
R4 - Storm Patrol	days	1,500	5	$7,500	$0
T1 - Trail Stabilization	miles	4,500	5	$22,500	
Insert new items above this line!				$0	$0
Subtotal Road and Trails				$40,294	$0
D. Protection/Safety					
P1 - Road Hazard Signs 30x48	Sign/Post	400	2	$800	$0
P1a - Road Hazard Signs 42x60	Sign/Post	600	2	$1,200	$0
P2 - Burned Area Information Signs	Sign	400	17	$6,800	$0
P3 - Flood Hazard Signs	Sign	150	2	$300	$0
P5 - Hazard Tree Mitigation	Tree	50	10	$500	$0
Insert new items above this line!				$0	$0
Subtotal Protection/Safety				$9,600	$0
E. BAER Evaluation					
Initial Assessment	Report		estimate	$60,000	$0
Insert new items above this line!				---	$0
Subtotal Evaluation				---	$0
F. Monitoring					
Coordination/Consultation	lump sum			$6,823	$0
				$0	$0
Insert new items above this line!				$0	$0
Subtotal Monitoring				$6,823	$0
G. Totals				$83,092	$0
Previously approved					
Total for this request				**$83,092**	

PART VII - APPROVALS

1.	*/s/ Tracy Beck* Forest Supervisor (signature)	10/11/2017 Date
2.	 Regional Forester (signature)	 Date