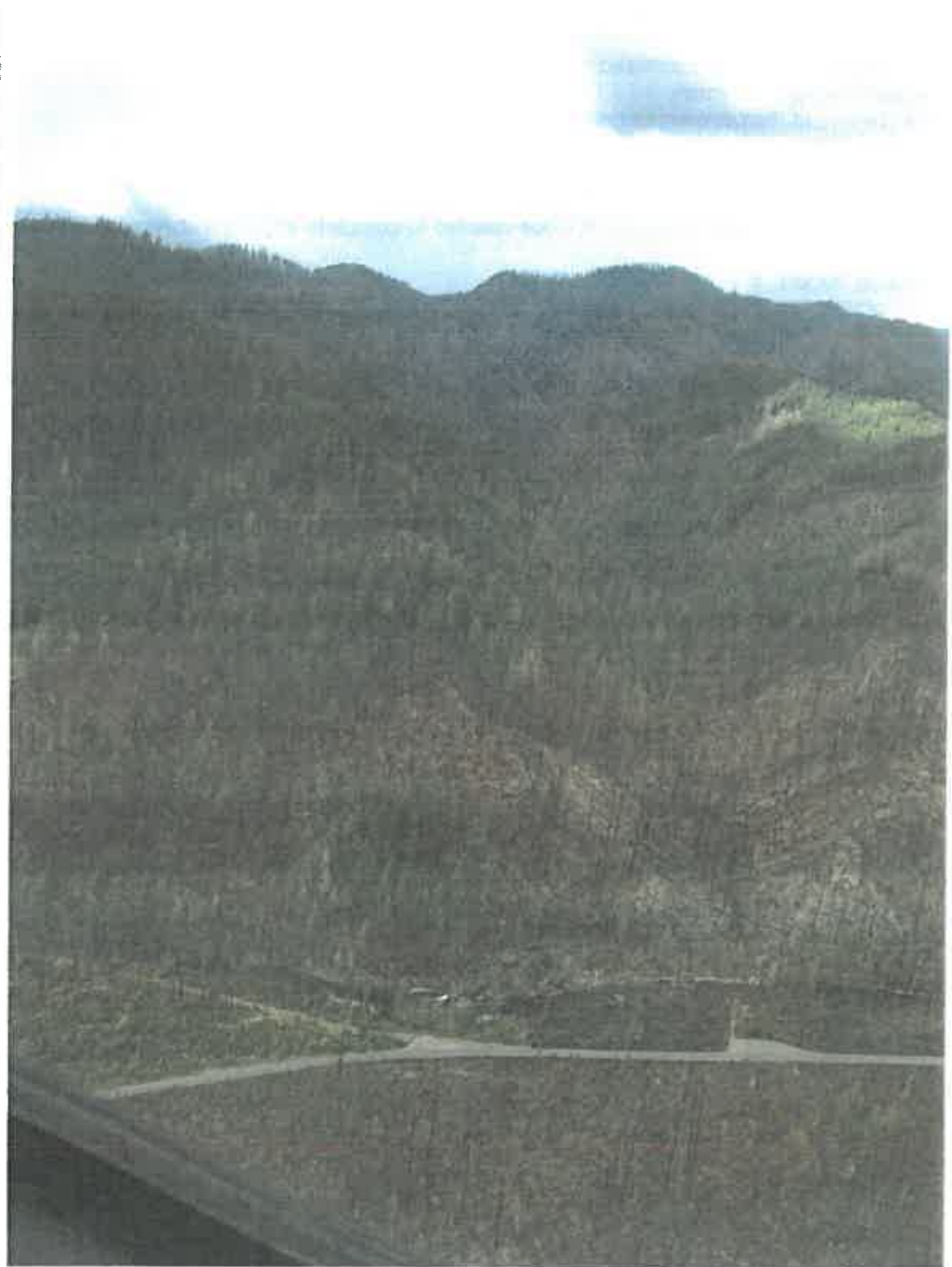


Date of Report: September 26, 2017



**Jones, Staley, and Kelsey Fires**

**BURNED-AREA REPORT**

**PART I - TYPE OF REQUEST**

**A. Type of Report**

- ☒ 1. Funding request for estimated emergency stabilization funds  
☐ 2. Accomplishment Report  
☐ 3. No Treatment Recommendation

**B. Type of Action**

- ☒ 1. Initial Request (Best estimate of funds needed to complete eligible stabilization measures)  
☐ 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:** Jones, Staley, Kelsey Fires

**B. Fire Number:** Jones - 2017-ORWIF-170191

**C. State:** Oregon

**D. County:** Pend Oreille

**E. Region:**

Jones	06 – Pacific Northwest
Staley	06 – Pacific Northwest
Kelsey	06 – Pacific Northwest

**F. Forest:**

Jones	Willamette NF
Staley	Willamette NF
Kelsey	Willamette NF

**G. District:**

Jones	Middle Fork Ranger District
Staley	Middle Fork Ranger District
Kelsey	Middle Fork Ranger District

**H. Fire Incident Job Code:**

Jones	P6K9G5
Staley	P6K9NE
Kelsey	P6LC8M

**I. Date Fire Started:**

Jones	08/10/2017
Staley	08/10/2017
Kelsey	08/09/2017

**J. Date Fire Contained:**

Jones	N/A
Staley	N/A
Kelsey	N/A

**K. Suppression Cost:** Jones - \$30,000,000; Staley- \$15,000,000; Kelsey - \$5,000,000 (est. by 09/26/2017)

**L. Fire Suppression Damages Repaired with Suppression Funds:** Currently being repaired as of 9/26/2017

M. Watershed Number: (6<sup>th</sup> level hydrologic units, percent of watershed acres within the fire perimeter)

Jones Fire:

HUC12 (6 <sup>th</sup> Field) Name	HUC12 #	% of Watershed in Fire Perimeter
Andy Creek-Fall Creek	170900010904	13.5%
Hehe Creek-Fall Creek	170900010903	34.2%
Portland Creek	170900010902	<1%
Upper Little Falls Creek	170900010801	<1%

\*Subwatersheds having less than 5% burned area are listed but were not analyzed in detail.

Staley Fire:

HUC12 (6 <sup>th</sup> Field) Name	HUC12 #	% of Watershed in Fire Perimeter
Staley Creek	170900010105	9%

Kelsey Creek Fire:

HUC12 (6 <sup>th</sup> Field) Name	HUC12 #	% of Watershed in Fire Perimeter
Lower Salmon Creek	170900010403	<1%

N. Total Acres Burned:

Jones Fire:	<b>Ownership</b>	<b>Acres</b>
	Willamette NF	10,497
	Private	21
	<b>Total</b>	<b>10,517</b>

Staley Fire:	<b>Ownership</b>	<b>Acres</b>
	Colville NF	2326
	<b>Total</b>	<b>2326</b>

Kelsey Fire:	<b>Ownership</b>	<b>Acres</b>
	Colville NF	546
	<b>Total</b>	<b>546</b>

O. Vegetation Types: The Dominant ecological site, plant association within the Jones, Staley and Kelsey Fires areas By five years after the fire the erosion potential is expected to drop to 2.4 tons/acre, Western hemlock/dwarf Oregon grape/swordfern/bracken ferns/salal and vine maple, Douglas-Fir also persists within the mountain areas. This Ecological site present alders (hardwoods species) within the floodplain areas of the Fall Creek drainages and the Staley Creek Drainages.

P. Dominant Soils: The dominant soils within all fire perimeters are andisols and inceptisols orders with medial and lithic modifiers. This orders provided fine particle material of loams and Clay loam composition. Soils within the burned area generally have high rock content (surface fragments) ranging from 15 to 40% within Jones. Unconsolidated materials and highly fragmental shallow soils surround the areas within Staley and Kelsey (respectively).

Unsuitable non forested lands occur in all fire perimeters such as wet meadows, depressions and rocky areas. A great percent of sections with high burn severity in all three fires correlated with bedrock driven (rocky), rock outcrops, colluvial and talus environments. Burned rocky areas increase the burn severity reflectance's value which could be assumed as high burn severity.

Ground cover removal in all fires was low to moderate due to the high shrub, canopy density and woody debris component in this ecosystem. A re-burn (Clark fire 2003) setting was dominant within the East side of the Jones Fires (Slick, Bedrock watersheds). This re-burn resulted in an increase of snags surrounded by old dropped burn snags, some woody material input and the removal of slow successive shrub understory under a moderate and high burn severity.

Q. Geologic Types: Four rock type formations are evident inside the Jones fire perimeter, such as volcanic rocks (Basalt and Andesite), intrusive rocks -silicic vents/ dike (rhyolitic and dacite sills, vents, dikes, etc.), Volcanoclastic rocks (tuffs, ash flows, basalt flows) and pyroclastic rocks (red thin flows of basaltic, andesite and volcanic breccia composition). The main rock formation process within Jones fire was volcanic.

Two rock formation are evident inside the Staley fires (with some other minimal components), these are volcanic rocks (basalt) and volcanoclastic rocks (tuff/tuffaceous rocks). Volcanic rock formation predominates within the Kelsey fire such as basalt lava flows and Andesite lava flows.

These formations resulted in steep dissected mountain landforms and ridge, unconsolidated rock material such as talus and colluvial deposits, debris chutes, old and recent landslides and old debris flood within the mountain slopes and ridges which drain into an old alluvial fans and the floodplain of fall creeks and Staley Creeks.

R. Miles of Stream Channels by Order or Class: (miles)

Jones Fire		Staley Fire		Kelsey Fire	
Intermittent	58.4	Intermittent	0.5	Intermittent	0.5
Perennial	42.2	Perennial	0.2	Perennial	0.8
<b>Total</b>	<b>100.6</b>	<b>Total</b>	<b>0.7</b>	<b>Total</b>	<b>1.3</b>

\*Stream miles and stream category are calculated by GIS and are not field verified; they are not intended to be 100% accurate.

S. Transportation System (in the various fire perimeters)

Jones Fire					
Road	Name	Maintenance Level	Beginning Mile Post	Ending Mile Post	Length (mi)
1800	Fall Creek	5	13.81	19.97	6.16
1800-419	-	1 (Closed)*	0.00	0.32	0.32
1817	Cowhorn	2	5.93	14.43	8.50
1817-406	-	2	0.00	2.60	2.60
1817-407	-	1 (Closed)	0.00	1.20	1.20
1817-410	-	2	3.76	4.82	1.06
1828	Alder Creek	2	0.00	5.40	5.40
1828-402	-	2	0.00	4.55	4.55
1828-403	-	1 (Closed)	0.00	1.53	1.53
1828-407	-	1 (Closed)	0.00	1.14	1.14
1828-408	-	1 (Closed)	0.00	0.20	0.20
1830	Gibraltar	2	0.00	5.45	5.45
1830-400	-	2 (Decommission)	0.00	5.54	5.54
				<b>Total Miles:</b>	<b>43.7</b>

Staley Fire					
Road	Name	Maintenance Level	Beginning Mile Post	Ending Mile Post	Length (mi)
2134	Staley Ridge	2	7.92	12.10	4.18
2136	Staley Creek	2	1.74	4.32	2.58
2134-250	-	2	0.00	5.20	5.20
				Total Miles:	12.0

Kelsey Fire					
Road	Name	Maintenance Level	Beginning Mile Post	Ending Mile Post	Length (mi)
No roads			0.0	0.0	0.0
				Total Miles:	0.0

### PART III - WATERSHED CONDITION

#### A. Burn Severity (acres):

##### Jones Fire:

Soil Burn Severity	Colville NF (acres)	Private (acres)	Grand Total (acres and %)
High	677	416	2,102 9%
Moderate	2,248	2,430	8,373 34%
Low	1,723	1,366	10,001 40%
Unburned/Very Low	825	686	4,226 17%
Grand Total	5,473	4,898	24,702

##### Staley Fire:

Soil Burn Severity	Willamette NF (acres)	Grand Total (acres and %)
High	19	1%
Moderate	552	24%
Low	1,149	49%
Unburned/Very Low	606	26%
Grand Total		

##### Kelsey Fire:

Soil Burn Severity	Willamette NF (acres)	Grand Total (acres and %)
High	0	0%
Moderate	225	41%
Low	134	25%
Unburned/Very Low	187	34%
Grand Total	717	

#### B. Water-Repellent Soil (acres):

Water Repellency Jones Fire
-----------------------------

Hydrophobic soil conditions are estimated to occur to varying degrees on approximately 20 -25 percent (2,096 acres to 2,715 acres) of the burned area, within the moderate to high burn severity mostly above 1 inch and not deeper than 2 inches. The average water repellency conditions tested in the field fall under weak (moderate) repellency conditions.

#### Water Repellency Staley Fire

Hydrophobic soil conditions are estimated to occur to varying degrees on approximately 3 -17 percent (around 80 acres to 390 acres) of the burned area, within the moderate to high burn severity mostly above and not deeper than 1 inch. The average water repellency conditions tested in the field fall under weak (moderate) repellency conditions.

#### Water Repellency Kelsey Fire

Hydrophobic soil conditions are estimated to occur mostly at lower degrees on approximately 10 percent (around 54 acres) of the burned area, within the moderate burn severity mostly above the surface due to rocky, shallow terrain. The average water repellency conditions tested in the field fall under none (low) to weak (moderate) repellency conditions.

#### C. Soil Erosion Hazard Rating (acres):

##### Jones Fire

Erosion Hazard Rating	Acres	Percent
low	1084	10
mod	4531	42
mod-high	1483	14
high	3337	31
very high	428	4

##### Staley Fire

Erosion Hazard Rating	Acres	Percent
low	280	12
mod	1223	53
high	772	33
very high	51	2

##### Kelsey Fire

Erosion Hazard Rating	Acres	Percent
Low-mod	1	0.16
mod-high	189	35

high	134	24
very high	223	41

**D. Erosion Potential:**

Average erosion rates (tons/acres)		
Fire name	Pre-Fire	Post-Fire
Jones Fire Erosion Rate (Tons/Acre)	9	24
Staley Fire Erosion Rate (Tons/Acre)	8	45
Kelsey Fire Erosion Rate (Tons/Acre)	4	28

**E. Sediment Potential:**

ERMIT Erosion Model Outputs for the first 2 years during a 5 years runoff event.

Jones Fire Sedimentation Rate (Tons/Acre)				
Year	Unburned	low	Mod	high
1st	0.04-0.09	16	26-44	45
2nd	0.04-0.09	11	17-31	31

Staley Fire Sedimentation Rate (Tons/Acre)				
Year	Unburned	low	mod	high
1st	0.04	33	28-38	small areas
2nd	0.04	25	21-26	small areas

Kelsey Fire Sedimentation Rate (Tons/Acre)				
Year	Unburned	low	mod	high
1st	0.04	22	24	none
2nd	0.04	14	15	none

## **PART IV - HYDROLOGIC DESIGN FACTORS**

**Jones Fire**

<b>A. Estimated Vegetative Recovery Period</b>	<b>5-10 years</b>
<b>B. Design Chance of Success</b>	<b>85 %</b>
<b>C. Equivalent Design Recurrence Interval</b>	<b>5 years</b>
<b>D. Design Storm Duration</b>	<b>6 hours</b>
<b>E. Design Storm Magnitude</b>	<b>1.9 inches</b>
<b>F. Design Flow</b>	<b>92.2 cfs / mi<sup>2</sup></b>
<b>G. Estimated Reduction in Infiltration</b>	<b>30 %</b>
<b>H. Adjusted Design Flow</b>	<b>160 cfs / mi<sup>2</sup></b>

**Staley Fire**

A. Estimated Vegetative Recovery Period	5-10 years
B. Design Chance of Success	70 %
C. Equivalent Design Recurrence Interval	5 years
D. Design Storm Duration	6 hours
E. Design Storm Magnitude	2.0 inches
F. Design Flow	178 cfs / mi <sup>2</sup>
G. Estimated Reduction in Infiltration	20%
H. Adjusted Design Flow	230 cfs / mi <sup>2</sup>

#### Kelsey Fire:

No analysis was performed due to the amount of low severity fire and minimal connectivity of the fire to the stream network.

### PART V - SUMMARY OF ANALYSIS

#### A. Describe Critical Values/Resources and Threats:

The BAER team began assessing the area for post-fire emergencies on September 20, 2017. The team has identified the following values at risk and post-fire threats. Interim reports may be submitted as additional assessments are completed and/or the need to repair or maintain BAER treatments emerges.

*The risk matrix, Exhibit 2 of Interim Directive No.: 2520-2017-1 was used to evaluate the Risk Level for each value identified during Assessment. Only critical values that had a risk of high or above are discussed in this report.*

#### Jones Fire

##### 1. Human Life and Safety (HLS)

- a. **High** risk to travelers along routes (roads and trails) within and downslope from hillslopes burned at a moderate to high severity due to an increased threat of falling trees/snags, rocks, excessive erosion, flooding, and other debris. The highest identified risks are the following road: 1828; trails: Jones Trail and Fall Creek National Recreation Trail. Treatment recommendations are temporary closure, install warning signage, and monitoring to ensure treatments are functioning as intended.
- b. **Very high, to high** risk to the life and safety of the public, cooperators, and FS workers from fire weakened trees and rocks in Bedrock Campground #9 and Bedrock Campground #8 satellite tent pad. Treatment recommendations are temporary closure, install warning signage, and monitoring to ensure treatments are functioning as intended. Treatment recommendations are temporary closure, install warning signage, and storm patrol monitoring to ensure treatments are functioning as intended.
- c. **Very High** risk to the life and safety of the public, cooperators, and FS workers from Debris Flow in Bed Rock Camp Ground. Treatment recommendations are temporary closure, install warning signage and reassess risk at time of seasonal opening in 2018.
- d. **High** risk to public, cooperators, FS workers and contracted personnel implementing BAER work exists in all the dispersed recreation sites due to fire weakened trees. Treatments include: FS area closure and the installation of closure and warning signs at major points of entry until hazards can be mitigated.
- e. **Very High** risk to the life and safety of the public, cooperators, and FS workers and contracted personnel implementing BAER treatments due to the presence of hazard trees throughout the entire burn area. Hazard tree removal would be limited to managing the hazard (dropping the tree) and must be focused on the trees posing the greatest risk. Mitigation of hazard trees that pose a significant risk to FS or contract workers working on implementing BAER treatments will occur as needed.



## 2. Property (P)

- a. **Very High to High risk to road and associated infrastructure with substantial damage expected because flooding, debris flows, and erosion is imminent.** The highest risk are associated with roads in the Jones Fire are 1800, 1817, 1817406, 1817410, 1828, 1828402, and 1830. The highest risks that are associated with the Staley Fire are 2134 and 2136. Post fire conditions and predicted watershed response indicate increased runoff, excessive sedimentation, debris flows, and rockfall will occur into roadway drainage features, such as roadside ditches, culvert inlets, over side drains, roadway dips and run outs. Once these drainage features become impacted and overwhelmed, their function fails, allowing uncontrolled water to divert, resulting in major damage to the road and invested road improvements, loss of road function, and the denial of access along some road segments. Treatment recommendations are improve road drainage features, temporary closure, install warning signage, and storm patrol monitoring to ensure treatments are functioning as intended.

## 3. Natural Resources (NR)

- a. **High risk to threatened Upper Willamette spring-run chinook salmon and their Critical Habitat.** Nearly all of the culverts on these routes appear to be undersized for post-fire flows. Post-fire conditions and predicted watershed response indicate increased runoff, excessive sedimentation, debris flows, and rockfall will likely occur into roadway drainage features. Once these drainage features become impacted and overwhelmed, their function fails, allowing uncontrolled water to divert. A high diversion potential was noted at three of these road-stream crossings. These three culverts constrict the bankfull channel width in the Jones Fire and three in the Staley Fire. In the aftermath of the fire, there is a high probability for increased floatable debris, which is likely to plug these culvert inlets and divert the stream discharge down the road, resulting in gully erosion and increased sediment delivery to designated critical habitat in the receiving waterbody downstream. Specific fisheries treatments to reduce potential impacts to habitat will rely on the trail and road treatment packages.
- b. **High risk to soil productivity in Slick Creek Drainage due to moderate to high burn severity on a reburn of the 2003 Clark Fire.** No treatments were proposed due to steep slopes, bedrock driven headwaters, and no value at risk in Slick Creek floodplain.
- c. **High risk to road and associated infrastructure with substantial damage expected because flooding, debris flows, and erosion is imminent.** The highest risk are associated with roads in the Jones Fire are 1800, 1817402, 1828, 1828402, and 1830. The highest risks that are associated with the Staley Fire are 2134 and 2136. Post fire conditions and predicted watershed response indicate increased runoff, excessive sedimentation, debris flows, and rockfall will occur into roadway drainage features, such as roadside ditches, culvert inlets, over side drains, roadway dips and run outs. Once these drainage features become impacted and overwhelmed, their function fails, allowing uncontrolled water to divert, resulting in major damage to the natural resources below including the threatened spring-run chinook salmon and their Critical Habitat.
- d. **Very High risk to native vegetation due to lack of recovery of native vegetation, establishment/spread of invasive plants, and potential loss of native seed sources is very likely in high soil burn severity areas.** In high soil burn severity areas, seed banks in the soil profile have likely been destroyed due to fire consumption or heat. High percentages of native plant rhizomes and crowns also were likely destroyed due to heat. Therefore, in some areas, native plant recovery could take many years to attain acceptable levels. Unfortunately, most of those same areas were deemed too steep to accommodate seeding/mulching treatments, so seeding or propagule augmentation is not feasible for landscape treatments. However, limited areas which were highly-disturbed are recommended for seeding treatments to try to prevent non-native invasive plant establishment. Furthermore, early detection/rapid response (EDRR) weed treatments (described below), particularly along weed conduits (like roads, firelines, etc.) that are adjacent to or lead into the fire area are imperative in helping to reduce potential for non-native invasive plant establishment.
- e. **Very High risk of non-native invasives due to the establishment or spread of invasive weeds along access roads is likely in the Jones Fire, as is weed movement away from conduits (such as roads, dozer lines, etc.) into the moderate and high soil burn severity areas.** Known infestations of Canada thistle (*Cirsium arvense*), Spotted knapweed (*Centaurea stoebe*), English ivy, False Brome (*Brachypodium sylvaticum*) Perennial pea (*Lathyrus latifolius*), Armenian and cutleaf blackberry (*Rubus armeniacus* and *laciniatus*), Shiny geranium (*Geranium lucidum*), Scotch broom (*Cytisus scoparius*) occur within and adjacent to the burned areas.

- f. Infestations on NFS lands have been treated in the past. However, these infestations may expand following fire due to seed bank stimulation and lack of competition and may also expand from adjacent lands in the Jones Fire area (where weed control efforts have not previously been implemented.) In addition, the fire suppression activities have the potential to introduce or establish new weed infestations. Treatment recommendations include treating infestations to limit fire-induced population growth and geographic expansion, as well as surveying for and treating newly introduced infestations before they become a serious threat to the integrity of native plant communities.

#### **4. Cultural and Heritage Resources (CHR)**

- a. **High risk** to 3 eligible cultural and historic sites from looting (Slick Creek Rock Shelter and 2 Prehistoric Lithic sites along Fall Creek Trail), due to the burned area exposing previously obscured features and artifacts. Implementation includes slash/mulch application with locally available vegetation to cover exposed cultural resources and reduce the loss of the heritage values at risk. Hazard trees will be removed prior to workers slash/mulching the cultural sites. Installation of warning signs concerning existing hazards due to the presence of moderate burn severity above and adjacent to the sites. These signs will also present a warning detailing the consequences of illegally collecting artifacts that may be found at these sites. These signs will help protect the archaeological evidence that makes these heritage values eligible to the National Register of Historic Places. Hazard trees located within the boundaries of archaeological sites along the Fall Creek terrace pose a risk to the health and safety of recreationalists using the Fall Creek Trail as well as Forest Service employees implementing archaeological site protection measures.

#### **Staley Fire:**

1. Human Life and Safety (HLS) - No critical BAER values were identified.

#### **2. Property (P)**

- a. **High risk** to road and associated infrastructure with substantial damage expected because flooding, debris flows, and erosion is imminent. The highest risk is associated with roads 2134 and 2136. Post fire conditions and predicted watershed response indicate increased runoff, excessive sedimentation, debris flows, and rockfall will occur into roadway drainage features, such as roadside ditches, culvert inlets, over side drains, roadway dips and run outs. Once these drainage features become impacted and overwhelmed, their function fails, allowing uncontrolled water to divert, resulting in major damage to the road and invested road improvements, loss of road function, and the denial of access along some road segments. Treatment recommendations are improve road drainage features, temporary closure, install warning signage, and storm patrol monitoring to ensure treatments are functioning as intended.

#### **3. Natural Resources (NR)**

- a. **High risk** exists in loss of chinook designated Critical Habitat due to excess sedimentation from failed road stream crossings on roads 2134 and 2136. Treatment recommendations include installing critical dips culvert on roads 2134 and 2136 stream crossings.

4. Cultural and Heritage Resources (CHR) – No critical BAER values were identified.

#### **Kelsey Fire:**

1. Human Life and Safety (HLS) – No critical BAER values were identified.

2. Property (P) – No critical BAER values were identified.

3. Natural Resources (NR) - No critical BAER values were identified.

4. Cultural and Heritage Resources (CHR) – No critical BAER values were identified.

#### **B. Emergency Treatment Objectives:**

#### **Land Treatments (Jones Fire)**

The objective of *roadside invasive* treatments is to provide for recovery of native vegetation by preventing the establishment and spread of noxious weeds in the high and moderate soil burn severity area.

#### Road Treatments (Jones and Staley Fires)

The objective of road treatments is to lower the risk of damage to property (system roads and trails) by lowering erosion of the road and trail surface in severely burned and steep areas within the burned area and to provide for public safety. The objective of temporary closure of roads and trails is to reduce risk to human life and safety.

The objective of post storm inspection and response is to survey impacts to the transportation infrastructure after a wildfire. This treatment will be used in lieu of more costly upgrades that may not be feasible due to time constraints of installing these treatments before the first damaging event or before winter occurs.

#### Recreation Treatment (Jones Fire)

Recreation treatments are needed to protect health and safety of public users of developed and dispersed sites, as well as the General Forest Areas. Treatments are also necessary to protect Forest Service infrastructure.

#### Protection/Safety Treatments (Jones Fire)

The objective of installing warning signs is to reduce threats to life/safety of Forest users by warning that they are entering a burned area and warning against access into hazardous areas. These signs also serve to accelerate natural recovery by preventing travel off trails.

The objective of temporary Forest closure of the Jones Fire is to reduce risk to human life and safety.

The objective of having FPO enforcement of the Jones Fire is to reduce risk to human life and safety.

Facilitating and coordinating with the National Weather Service or like agency for warning and or watch advisories for flooding will reduce the threat to life and safety. Interagency coordination with the local resources to inform these entities of anticipated post wildfire watershed response and associated threats to public safety on private and state lands. This information could be utilized in the development of early warning systems or emergency response plans.

#### Cultural Resources (Jones Fire)

The objective of cultural resource treatments is to prevent irretrievable loss of archeological information, to prevent looting by informing recreational users of the importance of archaeology and federal laws that prohibit theft of artifacts and damage to historic or prehistoric sites, and to prevent erosion on disturbance of archaeological materials.

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

Land 80 % Channel N/A % Roads/Trails 80 % Protection/Safety 80 %

#### D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land	75	85	95
Channel	--	--	--

Roads/Trails	75	85	95
Protection/Safety	80	70*	60*
*Initially, visitors will heed the warning signs. Complacency is expected after the initial year unless there are continued damaging events.			

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

F. Cost of Selected Alternative (Including Loss):

G. Skills Represented on Burned-Area Survey Team:

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

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H. Treatment Narrative:

Land Treatments:

#### **Cultural Treatment (Jones Fire)**

The objective of these treatments is to limit the about of looting and disturbance that may occur on newly-exposed prehistoric sites along the Fall Creek terrace. The warning signs will present a message encouraging individuals to not illegally collect artifacts that may be found at these sites, helping preserve the archaeological evidence that makes them eligible to the National Register of Historic Places. Implementation of slash/mulch application to reduce the possibility of loss of the resource. Hazard tree removal will occur before workers will enter the area to perform slash/mulch treatment of cultural sites.

Treatment	Units	Unit Cost	# of Units	Total Item Cost
Warning Signs and Materials	Item	\$2,000.00	1	\$2,000.00
Hazard Tree Abatement	Day	\$2,000.00	1	\$2,000.00
Archaeologist GS-11 (Consultation)	Day	\$317.94	2	\$635.88
Archaeology Tech (GS-07)	Day	\$255.03	7	\$1,785.21
Recreation Tech (GS-07)	Day	\$255.03	3	\$765.09
<b>Total Cost</b>				<b>\$7,186.18</b>

#### **Roadside Invasive Treatment (Jones Fire)**

The following non-native invasive plant (noxious weed) treatment is proposed on those segments of road that were used for fire suppression activities or that would serve as a conduit for weed spread and establishment on

the Willamette NF portion of the Jones Fire. Due to the fire disturbance and disturbance from suppression activities treatment of existing and transported weed populations is essential to reduce spread across the affected landscape. Invasive plants are a serious threat to the stability and function of the ecosystem. Often these plants rapidly colonize a burned area reducing other plant abundance and diversity. Introduction of these invasive plants are of particular concern in high to moderate soil burn severity.

Acres priority for EDRR are as follows:

- 1) 431 acres: Fire Points @ 46 acres, Fire Lines @ 181 acres and Roads/Trails @ 204 acres.
- 2) 235 acres: Existing infestation sites

#### Design Specifications

1. Conduct short-term monitoring in FY2018 using early detection and rapid response (EDRR) assessment/monitoring of noxious weed/non-native invasive plant species infestations within the burned area. Monitoring to determine the post-fire presence or spread of invasive species throughout the fire area.
2. Inventory/assessment, photos and map new noxious weed infestations within burned area using GPS technology and upload into the Middle Fork Ranger District GIS Noxious Weeds database.
3. Chemical treatments using pickups, UTVs and backpack spray units will be used on any noxious weeds located within the fire on public lands.

EDRR Treatment Cost	
[Grade @ Cost/Hours X # Hours] Do not include contract personnel costs here (see contractor services below)	COST
GS-11 Botanist @ \$361/day x 2 days = \$722	\$722
GS-6 Noxious Weed Technician @ \$170/day x 10 days x 4 people = \$6800	\$6800
Misc. Supplies and Materials = \$2,000 yr. x 1 year (Herbicides, Surfactants, Dyes, PPE)	\$500
<b>TOTAL PERSONNEL SERVICE COST</b>	<b>\$8,022</b>

#### Channel Treatments:

None recommended.

#### Roads and Trail Treatments:

##### Road Stabilization – (Jones Fire)

Accepted BAER road treatments along these road segments include:

- Restore drainage function to culvert inlet and outlets, and along roadway ditch lines.
- Install critical dips on roadway down grade of culvert crossings.
- Install drainage armor ( rock ) on fill slopes at critical dip locations, and spillways.
- Storm inspection and response.
- Remove culvert until high flows have passed.

The objective of road stabilization treatments is to lower the risk of damage to property (FS system roads) by lowering erosion of the road surface in severely burned and steep areas within the burned area and to provide for public safety.

This treatment is designed to protect road infrastructure by minimizing erosion of the road surface, provide water control, and reducing excessive flooding and sediment delivery into the watersheds. No road stabilization work should be conducted along portions of each road located in low to unburned soil burn severity unless the road segment(s) will be significantly influenced by high to moderate soil burn severity above it. Before work is done on the road system, a forest archeologist shall be consulted.

Armoring rolling dip is to increase the culvert's water carrying capacity, and reduce the chance for culvert

failure. This treatment will be used in select locations. The road will be maintained at select locations, to connect ditch lines, clean culverts, and restore the function of water control features on the road. This will reduce surface and fill slope erosion potential. Critical dips will be placed at select locations. The purpose of a critical dips and armoured critical dips is to protect the road surface should a culvert immediately upslope from the rolling dip become nonfunctioning. Critical dips will be designed to be drivable.

<b>Jones Fire</b>				
<b>FS Road 1800-419</b>				
Line Item	Unit	Unit Cost	Quantity	Total Item Cost
Armored Rolling Dip	EA	\$2,000.00	1	\$2,000.00
<b>FS Road 1817</b>				
Line Item	Unit	Unit Cost	Quantity	Total Item Cost
Storm Proofing	Lump	1,200.00	1	\$1,200.00
<b>FS Road 1817-406</b>				
Line Item	Unit	Unit Cost	Quantity	Total Item Cost
Storm Proofing	Lump	\$1,570.00	1	\$1,570.00
<b>FS Road 1817-410</b>				
Line Item	Unit	Unit Cost	Quantity	Total Item Cost
Road Template Reshaping and Storm Proofing	Lump	\$1,850	1	\$1,850.00
<b>FS Road 1828</b>				
Line Item	Unit	Unit Cost	Quantity	Total Item Cost
Storm Proofing	Lump	\$3,630.00	1	\$3,630.00
Rolling Dip	EA	\$1,390.00	1	\$1,390.00
<b>FS Road 1828-402</b>				
Line Item	Unit	Unit Cost	Quantity	Total Item Cost
Storm Proofing	EA	\$1,560.00	1	\$1,560.00
<b>FS Road 1830</b>				
Line Item	Unit	Unit Cost	Quantity	Total Item Cost
Storm Proofing	EA	\$1,760.00	1	\$1,760.00
Rolling Dip	EA	\$1,390.00	1	\$1,390.00
<b>Stale Fire</b>				
<b>FS Road 2134</b>				
Line Item	Unit	Unit Cost	Quantity	Total Item Cost
Rolling Dip	EA	\$1,390.00	1	\$1,390.00
Armored Rolling Dip	EA	\$2,00.00	1	\$1,900.00
Storm Proofing	MI	\$300.00	1	\$1,250.00
<b>Total</b>				<b>\$23,880.00</b>

Protection/Safety Treatments:

Administrative Closure and Hazard Warnings (Jones Fire)

## Roads and Trails:

This treatment will design and install burned area warning signs to caution forest visitors recreating and administrative users about the potential hazards that exist within the burned area.. It is consistent with the language provided in the BAER Treatments Catalog. The warning signs will identify the types of hazards to watch for roads, trails, and campgrounds. This treatment will place closure signs, hazard warning signs and information signs at developed campgrounds, key entry points or trail junctions, and numerous recreation trailheads. It will inform users of the dangers associated with entering/recreating within a burned area as well as inform them of closures to help ensure that users are able to access available routes in a safe manner.

The purchase and installation of signs at each of the identified locations consistent with Forest Engineering Standards at these locations. A Forest Service employee will inspect the signs for visibility, damage, or loss and replace as needed. A Forest Service employee shall also monitor the closure to make sure it is effective, and see if any deficiencies in the closure need to be corrected. This treatment will keep Forest users out of the burn area during major storm events and inform users of the dangers associated with entering/driving within a burned area.

The area and trail closures need to be monitored by Forest Protection Officers to ensure public compliance. The Jones Fire burned partially within the footprint of the 2003 Clark Fire. Signs were posted at that time (2004) to warn the public of the hazards present. The Fall Creek National Recreation Trail is a popular trail with several day use attractions along its route and Big Fall Creek Road (FS Road 18) is a very popular recreation corridor just 20-30 minutes from the cities of Eugene and Springfield (combined population of 230,000). After the Clark Fire, these trails and recreation sites proved too tempting for the public in spite of ample signage warning them of the hazards present and it is important to remind the public that those hazards may persist for several years.

Item/Quantity	Materials	Labor/day	QTY	UOM	Total
Burned Area Hazard Road Signs for forest roads 18, 1825, 1835 / 6 signs (including 2 sign replacements, posts, mounting hardware)	\$1970	\$300 (GS-9)	1.0	day	\$2550
		\$140 (GS-5)	2.0	days	
Campground Closed signs / 2 signs	\$160	\$300 (GS-9)	1.0	day	\$460
Trail Closed signs / 13 signs (including 4 sign replacements, mounting hardware)	\$900	\$300 (GS-9)	1.0	day	\$1480
		\$140 (GS-5)	2.0	days	
Area Closed signs / 8 signs (including 4 sign replacements, mounting hardware, carsonite posts, stickers)	\$850	\$300 (GS-9)	1.0	day	\$1430
		\$140 (GS-5)	2.0	days	
Campground Site Closure		\$300 (GS-9)	1.0	day	\$300
Forest Order Preparation		\$300 (GS-9)	3.0	days	\$900
Forest Order Signage	\$20		5.0	each	\$100
Closure Enforcement		\$300 (GS-9)	10.0	days	\$3000
		\$140 (GS-5)	15.0	days	\$2100
Vehicle-GS-9	0.55		600	miles	\$330
Vehicle-GS-5	0.55		3600	miles	\$1980
<b>Total</b>					<b>\$14,630</b>

## Storm Inspection and Response for Roads (Jones Fire)

Immediately upon receiving heavy rain and spring snowmelt the FS will send out patrols to identify road hazardous conditions. Observations of rocks and sediment plugged culverts or risers are identified and corrected before they worsen or jeopardize motor vehicle users and/or road tread. The road patrol personnel bring heavy equipment necessary to mechanically remove any obstructions from the roads and culvert inlets and catch basins where necessary. All excess material and debris removed from the drainage system shall adhere to the sidecasting as reviewed by the archeologist and hydrologist.



Roads within the Jone Fire and Stanley Fire contain drainage structures that cross streams located in watersheds having areas of high to moderate soil burn severity. These flood source areas have a greater potential for increased runoff and debris flows. These increases in flows pose a threat to the existing crossings which may result in plugging culverts or exceeding their maximum flow capacity. If these flows plug drainage structures the result could be unacceptable erosion and debris torrents further down the drainage from the failure of the fill slope of the road. There is an immediate and future threat to travelers along these roads within the burned area due to the increased potential for rolling and falling rock from burned slopes and increased potential for falling trees, flash floods and mudflows. With the loss of stabilizing vegetation, normal storm frequencies and magnitudes can more easily initiate rill and gully erosion on the slopes and it is likely this runoff will cover the roads or cause washouts. These events make for hazardous access along steep slopes and put the safety of users at risk.

Engineering, Recreation, and District personnel will survey the roads within the fire perimeter after high-intensity winter storms in 2017 before they are snowed out of the area and spring 2018 runoff. Survey will inspect road, surface condition, ditch erosion, and culverts/inlet basins for capacity to accommodate runoff flows. The purpose of the monitoring is to evaluate the condition of roads, and bridges for motorized and foot traffic access and to identify and implement additional work needed to maintain and/or repair damage to flow conveyance structures (culverts, bridges) across roads in order to provide safe access across FS lands. BAER funding will not be used for permanent repair of fire or storm-caused damage to the road, but minor or short-term repairs needed to provide for equipment access to the treatment area may occur.

#### Jones Fire and Stanley Fire

Colville NF					
Road Number	Line Item	Unit	Unit Cost	Quantity	Total Item Cost
All Roads	Storm Patrol	Day	\$ 3,000.00	2	\$ 6,000.00
All Roads	2 Forest Service Employee (Storm Patrol Surveys)	Day	\$ 350.00	10	\$ 3,500.00
All Roads	Vehicle	Mile	\$ 0.55	500	\$ 275.00
				Total	\$ 9,775.00

#### I. Monitoring Narrative:

(Describe the monitoring needs, what treatments will be monitored, how they will be monitored, and when monitoring will occur. A detailed monitoring plan must be submitted as a separate document to the Regional BAER coordinator.)

Forest personnel will conduct implementation monitoring of the BAER treatments to check that treatments are present and functioning properly.

This report is an initial funding request based on a rapid assessment. If additional treatment needs are identified through more site specific on the ground investigation in cooperation with interested agencies, or through further field analysis location or noxious weed detection surveys, interim requests for additional funding will be filed. These funding requests will identify the purpose for each treatment, and specific treatment specifications, locations, and number of each treatment. A detailed implementation and treatment effectiveness monitoring plan will be submitted as a separate document to the Regional BAER coordinator.

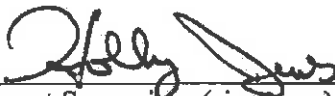


**Part VI – Emergency Stabilization Treatments and Source of Funds  
Willamette National Forest, Region 6**


Initial:

Line Items	Units	Unit Cost	NFS Lands		Other \$	Other Lands				All Total \$
			# of Units	BAER \$		# of units	Fed \$	# of Units	Non Fed \$	
<b>A. Land Treatments</b>										
EDRR	Lump			\$8,022	\$0		\$0		\$0	\$8,022
Cultural	Lump			\$7,186	\$0		\$0		\$0	\$7,186
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Land Treatments</i>				\$15,208	\$0		\$0		\$0	\$15,208
<b>B. Channel Treatments</b>										
None				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Channel Treat.</i>				\$0	\$0		\$0		\$0	\$0
<b>C. Road and Trails</b>										
Road stabilization and Storm Proofing				\$33,655	\$0		\$0		\$0	\$33,655
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Road &amp; Trails</i>				\$33,655	\$0		\$0		\$0	\$33,655
<b>D. Protection/Safety</b>										
Closure and Warning	Lump			\$14,630						14,630
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Structures</i>				\$14,630	\$0		\$0		\$0	\$14,630
<b>E. BAER Evaluation</b>										
Assessment Team				\$86,442			\$0		\$0	\$0
<i>Insert new items above this line!</i>				---	\$0		\$0		\$0	\$0
<i>Subtotal Evaluation</i>				---	\$0		\$0		\$0	\$0
<b>F. Monitoring</b>										
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Monitoring</i>				\$0	\$0		\$0		\$0	\$0
<b>G. Totals</b>				\$63,493	\$0		\$0		\$0	\$63,493
Previously approved										
Total for this request				\$63,493						

PART VII - APPROVALS

1.   
Forest Supervisor (signature)

9/29/17  
Date

2.   
Regional Forester (signature)

10/3/2017  
Date