

Date of Report: 11/05/2015

BURNED-AREA REPORT

(Reference FSH 2509.13)

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:** Elk City Complex**B. Fire Number:** See table below

FIRES	P-Code	Incident Number
Elk City Complex	P1J151 (0117)	ID-NCF-000906
Baldy		ID-NCF-000616
Deadwood Mtn.		ID-NCF-000843

C. State: ID**D. County:** Idaho**E. Region:** 01**F. Forest:** Nez Perce-Clearwater**G. District:** Red River Ranger District**H. Fire Incident Job Code:** P1J151 (0117)**I. Date Fire Started:** 08/10/2015**J. Date Fire Contained:** Not yet contained, estimated 10/30/2015**K. Suppression Cost:** \$8,500,000 as of 09/21/2015 (Selway/Red River/Elk City Complex)**L. Fire Suppression Damages Repaired with Suppression Funds** (estimates)

1. Dozer Fireline repaired (miles): 3 as of 09/22/2015
2. Excavator Fireline repaired (miles): 1 as of 09/22/2015
3. Feller Buncher Fireline repaired (miles): 1 as of 09/22/2015
2. Hand Fireline repaired (miles): 0 as of 09/22/2015

M. **Watershed Numbers** (as of 9/25/2015, No BARC available):

HUC	Watershed Name	Acres Burned
170603040615	SOUTH FORK CLEAR CREEK	2,107
170603040614	KAY CREEK	521
170603050621	HAYSFORK CREEK	205
170603050620	BALDY CREEK	390
170603050619	PILOT CREEK	1,632
170603050615	UPPER SILVER CREEK	1,255
170603050618	SAWMILL CREEK	219
170603050616	WEST FORK NEWSOME CREEK	354

N. **Total Acres Burned** (as of 09/21/2015): 6,683 acres (GIS acres, fire perimeter)

NFS: 6,683 **State:** N/A **Private:** N/A

O. **Vegetation Types:** Habitat types include mixed conifer and lodgepole pine, with understories of huckleberry and beargrass, with cool moist types (Subalpine fir and Grand fir) on shady aspects and in riparian areas. Spruce and Grand fir are common in wetter areas, and Douglas-fir is common through much of the fire area. Many stands are decadent lodgepole with substantial mortality and advanced regeneration or subalpine fir establishment. Some Western Red Cedar is present but is not common within the burned area.

P. **Dominant Soils:** Surface soil textures in the Elk City Complex Fires were dominantly ashy silt loams. The dominant soil profile in the Elk City Complex Fires contains coarse fragments ranging from three to eight percent in most locations. Pre-fire organic horizons (duff) typically range in thickness from one quarter to three inches. These soils are considered to have low to moderate erodibility due to high post-fire structural integrity and abundance of live roots.

Q. **Geologic Types:** Soils in the Elk City Complex Fires developed in a mantle of Mount Mazama volcanic ash loess over granite and metamorphic schist, gneiss, and quartzite bedrock.

R. **Miles of Stream Channels by Order or Class:**

National Forest

1st order 21.3 miles, 2nd order 2.6 miles, 3rd order 0 miles

S. **Transportation System**

Trails: National Forest 6.7 miles Other 0 miles

Roads: National Forest 14.2 miles Other 0 miles

PART III - WATERSHED CONDITION

A. **Burn Severity** (acres, est. w/o BARC): 2,820 (low) 2,339 (moderate) 619 (high)

B. **Water-Repellent Soil** (acres): (sum of moderate + high = 2,958)

C. **Soil Erosion Hazard Rating** (acres): 22 (low) 4,646 (moderate) 2,013 (high)

D. **Erosion Potential:** 1.1 tons/acre (average of first two years)

E. **Sediment Potential:** 429 yds³/mi²

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period , (years):	<u>2-5 grass/shrubs 20-50 conifers</u>
B. Design Chance of Success , (percent):	<u>70</u>
C. Equivalent Design Recurrence Interval , (years):	<u>10</u>
D. Design Storm Duration , (hours):	<u>2.3-5.7 hrs</u>
E. Design Storm Magnitude , (inches):	<u>1.9- 2.4 in.</u>
F. Design Flow , (cubic feet / second/ square mile):	<u>20-59</u>
G. Estimated Reduction in Infiltration , (percent):	<u>20-30</u>
H. Adjusted Design Flow , (cfs per square mile):	<u>66-187</u>

PART V - SUMMARY OF ANALYSIS

A. Describe Critical Values/Resources and Threats:

The primary values at risk resulting from the Elk City Complex Fires are transportation infrastructure (roads, trails and culverts), water quality and native vegetation communities. Assessment results strongly suggests there are no post-fire hydrologic threats to life, safety or property. The usual threat of hazard trees dispersed throughout the burned area is present.

Infrastructure: Due to fire effects, both moderate and intense snowmelt and rain events are likely to cause moderate erosion on steep hillslopes throughout the burned area. Additionally, reduced canopy interception, combined with lack of groundcover and hydrophobicity will cause increased runoff response compared to pre-fire conditions. Thus, streams in and downstream of the burned area are likely to generate higher stormflows in the first few years following the fire. Larger flow events in part are a function of increased surface runoff from bare hillslopes. Furthermore, burned and exposed soils are more susceptible to entrainment and transport to stream channels. This combination of increased runoff and greater susceptibility to erosion threatens transportation infrastructure.

Roads: BAER team assessments indicate transportation infrastructure necessary for forest management and recreational access is a value at risk from post-fire erosion and elevated surface and peak flows below burned slopes in the Elk City Complex Fires. A 0.2 mile long segment of FR284 is likely to be threatened by relatively high-probability post-fire runoff events and will be vulnerable to rutting and loss of road tread from post-fire hydrology. This road provides important access to a fire lookout and is part of the Historic Elk City Wagon Road. A 24" stream-crossing culvert on FR464 within the fire perimeter is also at risk of increased peak flows, and field reviews suggest the road surface around the pipe is susceptible to washout should a thunderstorm affect the pipe's contributing area.

Aside from roads and culverts, no Forest Service or private structures were judged to be at risk from post-fire floods or debris flows. There is a low potential for increased turbidity during thunderstorm events in Newsome Creek in the vicinity of the Nez Perce Satellite Fish Hatchery. Only 354 acres of West Fork Newsome Creek in the headwaters area were affected by the fire, and substantial dilution would occur by the time storm flows reached the hatchery structures.

Risk Assessment: *Threats to Forest Service roads and associated structures*

Probability of Damage or Loss: *Very Likely – High potential of road damage due to post-fire flows.*

Magnitude of Consequence: *Moderate – moderate damage to FS infrastructure and temporary loss of access.*

Risk Level: *High*

Trails: Approximately 6.7 miles of system trails were affected by the Elk City Complex Fires. Burn severity around these trails varies, but no BARC is currently available to help determine trail miles within high and moderate burn severity. Considering the dispersed trail network and range of severity, trail damage and some off-trail erosion/sediment delivery to channels is likely to occur. Trail incision and complete loss of trail tread could occur, therefore resulting in loss of infrastructure possibly leading to significant repairs and costs to restore sections of trail. Loss of water control may lead to off-trail slope erosion and gully formation. Once active gullies develop, they can continue to erode during each storm event and contribute to downstream sedimentation and trail instability. Once started, trail incision is difficult to remedy. Trail location and associated burn severity will be assessed in detail when the BARC is available and an interim 2500-8 will likely be filed to request trail stabilization funding.

Of the 6.7 miles of trail within the burn perimeter, approximately 2 miles are in moderate and high severity burn as shown in the table below. These trails are located in a highly significant cultural and tribal location within the Pilot Knob area.

Trail	Trail No.	Burn Severity		Total Burned
		Moderate	High	
BALDY MOUNTAIN	152	0.7	0.1	1.3
BOUNDARY RIDGE	SNO-464			1.1
CLEAR CREEK	150			0.1
ELK CITY WAGON ROAD	SNO-284	0.7	0.0	2.6
MACKEY MINE	426			0.5
SING LEE	825	0.3	0.0	1.0
Grand Total		1.7	0.2	6.7

Risk Assessment: Threats to Forest Service trails and associated structures

Probability of Damage or Loss: Very Likely – High potential for erosion of surface tread and sediment delivery to streams. Soil deposition on trail surfaces from adjacent hillslopes may also occur.

Magnitude of Consequence: Major – loss of trail drainage structures may lead to substantial erosion damage within high and moderate burn severity.

Risk Level: Very High

Water quality: The streams in the burned area generally maintain good water quality. Erosion from steep burned hillslopes would compromise water quality through transport and deposition of fine sediment in important fishery streams. The elevated erosion and potential failures from roads and trails also compromise water quality. Treatments to improve road and trail drainage to withstand post-fire events will provide protection for water quality as well.

Risk Assessment: Threats to water quality.

Probability of Damage or Loss: Likely – High potential sediment impacting water quality due to post-fire erosion and increased flows.

Magnitude of Consequence: Moderate – damage to critical natural or cultural resources resulting in considerable or long term effects

Risk Level: High

Native vegetation: Native vegetation communities are at risk from rapid expansion of noxious weeds from existing populations in the burned area. Recent weed inventories conducted within the Red River Ranger District have identified 285 acres of Idaho noxious and invasive weeds occurring within the Red River and Elk City Complex Fires.

Soils specialists have determined much of the fire area experienced low to moderate burn severity. However, highly susceptible habitat, existing infestations and exposed mineral soils along roads, trails, fire lines and camps greatly increase the risk of invasive weed spread as a result of fire disturbance. The risk

of weed spread has increased within the roaded portion of the Elk City Complex Fires due to the roads acting as weed vectors into the susceptible burned areas.

The fire has increased risk of expansion of invasive weeds that can readily out-compete native plants and dominate disturbed sites. Primary risk comes from the existing infestations within and adjacent to burned area along with introduction of noxious weed seed from firefighting resources. Invasive species detection surveys and treatment within and adjacent to the burned area is warranted. Please see the Invasive Plant Specialist Report for this incident for more details.

Risk Assessment: Threats to native plant communities due to the establishment or spread of noxious weeds.

Probability of Damage or Loss: Very Likely - Based on moderate and high burn severity and proximity to known weed infestations.

Magnitude of Consequence: Major – Loss of native plant communities and spread of noxious weeds.

Risk Level: Very High

Heritage: A thorough review of recorded heritage sites was conducted during the BAER assessment. At the time of the initial request, no sites needing protective or stabilizing treatments had been found. Site locations will be compared with the BARC when it becomes available, and some additional review may be needed to determine if any sites are threatened, and would benefit, from BAER treatments.

B. Emergency Treatment Objectives:

- Protect road infrastructure and crossings from flood flows, debris torrents, and other potential erosion events and maintain access;
- Reduce the threat of significant expansion of existing noxious weeds or invasion of new noxious weeds

Probability of Damage or Loss	Magnitude of Consequences		
	Major	Moderate	Minor
	RISK		
Very Likely	Very High - Weeds, Trails	Very High - Roads	Low
Likely	Very High	High	Low
Possible	High	Intermediate	Low
Unlikely	Intermediate	Low	Very Low

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

Land (weed treatments) N/A Channel N/A Roads/Trails 80% Protection/Safety N/A

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land	70%	*	*
Channel	NA	NA	NA
Roads/Trails	90%	90%	90%
Protection/Safety	90%	90%	90%

E. Cost of No-Action (Including Loss): >\$75,000

The potential cost of no action includes erosion damage on several public roads needed for FS and public access, and erosion damage and failure of trails. The cost of repairing roads and trails would most likely

exceed the cost of the selected alternative if protective treatments were not implemented prior to damaging storms. The value of protecting the ecological integrity of the burned area from noxious weed infestation likely exceeds the cost of weed treatment and monitoring, although this too was not quantified. **Please see page 10 for the attached Cost/Benefit assessment.**

F. Cost of Selected Alternative (Including Loss): \$22,429

In accordance with the revised Forest Service manual, the risk matrix below, Exhibit 2 of Interim Directive No.: 2520-2014-1, was used to evaluate the Risk Level for each value identified during the Elk City Complex Fires BAER assessment. Only treatments that had a risk of Intermediate or above are recommended for BAER authorized treatments.

Treatments	Costs = \$29,980.00
Land Treatments (Native Vegetation)	Treatment costs = \$70.72/acre x 95 acres = \$6,745.00
= \$6,745.00	
Transportation Infrastructure	Road drainage improvements = \$11,100.00
Roads and Trails	Storm patrol (roads) = \$4,584.00
= \$23,235.00	Trail drainage improvements = \$7,551.00

G. Skills Represented on Burned-Area Survey Team:

<input checked="" type="checkbox"/> Hydrology	<input checked="" type="checkbox"/> Soils	<input checked="" type="checkbox"/> Range	<input checked="" type="checkbox"/> Weeds
<input type="checkbox"/> Forestry	<input type="checkbox"/> Wildlife	<input checked="" type="checkbox"/> Fire Mgmt.	<input checked="" type="checkbox"/> Engineering
<input type="checkbox"/> Contracting	<input type="checkbox"/> Ecology	<input checked="" type="checkbox"/> Botany	<input checked="" type="checkbox"/> Archaeology
<input checked="" type="checkbox"/> GIS	<input type="checkbox"/> Air Quality	<input type="checkbox"/> Research	<input checked="" type="checkbox"/> Fisheries
<input checked="" type="checkbox"/> Recreation			

Team Leader: Ed Snook

Email: esnook@fs.fed.us Phone: [406-363-7103](tel:406-363-7103) FAX: [406-363-7106](tel:406-363-7106)

Forest BAER Coordinator: Cara Farr

Email: clfarr@fs.fed.us Phone 208-983-4045

Core Team Members:

Ed Snook - Team Lead	Jeremy Harris - Recreation
Mark Muir- Hydrology	Steve Armstrong - Heritage
Derek Milner - Soils	Steve Hiebert- Noxious Weeds
Chandra Neils - Soils (t)	Bill Falvey - GIS
Chris Wolffing - Engineering (t)	Jeff Hosman - Fisheries

H. Treatment Narrative:

Road and Trail Treatments:

Road treatments will be targeted at effectively draining anticipated increased runoff in the first several years following the fire. **All work must be contained within the existing cut & fill slope boundaries due to cultural concerns. Some material will need to be excavated and wasted off-site to make room for armor rock while maintaining the current road footprint.**

1. The outlet side fill of a small stream crossing on FR464 (MP 2.9 from Lytle Camp Junction) will be armored with 12' to 24" (B-axis) approximate dimension angular rock to protect the road prism in

the event of a flood event that overtops the culvert. This will prevent headcutting of erosion across the road prism.

2. Two drain dips will be built in FR284 (MP 3.2 from Lytle Camp junction), and outlets will be armored with cobble-size angular rock to dissipate flow velocity. The two dips will use sites with existing natural road grade variations to minimize disturbed area. This treatment will prevent ruts from capturing surface flow from burned slopes above the road and eroding the road prism over long distances.

~~Locations and extent of trail work have yet to be determined due to lack of a BARC image to determine high and moderate burn severity areas where trail stabilization is needed most. An Interim 2500-8 is planned pending confirmation of need by BARC acquisition and processing.~~ **6.7 miles of trail are within the Elk City Complex Fires perimeter.** Trail work, if needed, will stabilize segments of the trail system within the burned area that are at high risk of damage from elevated post-fire runoff and erosion. Treatments will consist of replacement of burned drainage structures, installation of new drainage structures in anticipation of greater runoff and erosion, cleaning of existing intact drainage structures, and spot outsloping to improve trail drainage especially on steep slopes and near streams.

There are 1.9 miles on 6 trails in the Elk City Complex fires area expected to see increased runoff over the next couple of years. Existing conditions of drainage structures may not accommodate the expected increase in debris and flows. It is likely that damage will occur if measures aren't taken to stabilize the trails and maintain functionality of drainage structures. Treatments include outsloping trail in areas of high and moderate burn severity, cleaning existing drainage structures of sediment and debris, installing additional drainage structures where they will be most efficient and necessary, and replacing drainage features when found to be damaged or non-functional.

Selective hazard tree removal is recommended for health and safety of workers during BAER treatment implementation within the burn area. The hazard tree removal will occur at the treatment locations along road and trail prisms. This will only address immediate safety needs of BAER personnel. Additional hazard tree removal will be needed for long-term safety.

TREATMENT	Unit	Unit Cost	Units Needed	Cost
Outsloping (Mod Severity)	mile	600	1.7	\$1,004
Outsloping (High Severity)	mile	1,300	0.2	\$229
Clean Trail Drain Structures	each	30	46	\$1,388
Replace Drain Structures	each	30	35	\$1,050
Install Drainage Structures	each	60	40	\$2,400
Spot hazard tree removal	mile	800	1.9	\$1,480
Total				\$7,551

Protection/Safety Treatments:

To provide for worker safety during implementation of trail drainage improvements, hazard trees along the trails mentioned above will be removed. Roads have generally been snagged as part of suppression efforts to provide for immediate safety mitigation.

Land Treatments:

Noxious weed control with herbicides is recommended for new populations of current and new invasive weed species within the Elk City Complex Fires. Herbicide applications will follow the requirements and mitigation outlined under the latest NEPA and Biological Assessment for listed fish species. A weed management strategy within the Clearwater River Basin Weed Management Area, an interagency cooperative, is currently in place. Areas within the burn perimeter infested with noxious weeds will be treated within one year of containment to reduce the spread into uninfested burned areas. If subsequent monitoring identifies weeds populations not effectively removed with initial treatment, additional treatment will be planned using alternative funds. Many of the weeds are difficult to find the first year after a fires, so

the acres of known populations within the burn perimeter will be covered twice in 2016 to ensure that all weeds are located and treated effectively. Other funding sources will be sought in out-years to treat any expansions of noxious weeds identified in subsequent monitoring. All of this work will be accomplished using ground-based equipment. Treatment will include the following:

- Mix of backpack/truck spraying and hand-pulling, as appropriate, in spring/early summer 2016 before weeds begin to seed.
- Using approved herbicides and application techniques based on weed species, topography and environmental factors, in compliance with Nez Perce-Clearwater NF Weeds EIS.
- Treatment of road segments within high and moderate burn severity on approximately 67 miles of system roads.
- Treatment of trail segments within high and moderate burn severity on approximately 44 miles of system trails.

I. Monitoring Narrative:

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

Monitoring of road and trail treatments will occur during and after implementation in 2015-16 to ensure that treatment objectives are met. Hillslope and road treatments will be monitored again after snowmelt and during the summer to evaluate effectiveness.

Noxious Weed Monitoring

Goals: During 2016, monitor effectiveness of the spraying and establishment of new weed populations. Accurately map new populations using GPS and GIS. Establish photo plots for potential treatment. Monitor weed treatments results to ensure objectives are being met. Accurately map any new populations using GPS. Establish photo plots for documentation as needed. In 2016 all of the known areas of infestation within moderate and high severity burn will be re-surveyed by NP-CNF Weeds staff. Any noxious weed populations not effectively treated during initial treatment efforts will be targeted for additional herbicide application, or future treatments using alternative funds. Monitoring is included within the assessment portion of the Invasive Weed Assessment and Treatment activities.

VI – Emergency Stabilization Treatments and Source of Funds

			NFS Lands		
		Unit	# of		Other
Line Items	Units	Cost	Units	BAER \$	\$
A. Land Treatments					
<i>Weed treatment & assessment</i>	<i>acre</i>	<i>71</i>	<i>95</i>	<i>\$6,745</i>	
<i>Subtotal Land Treatments</i>				<i>\$6,745</i>	<i>\$0</i>
B. Channel Treatments					
<i>Subtotal Channel Treat.</i>				<i>\$0</i>	<i>\$0</i>
C. Road and Trails					
<i>RT-1 Stabilize Culverts</i>	<i>each</i>	<i>5,508</i>	<i>1</i>	<i>\$5,508</i>	
<i>RT-2 Install Drain Dips</i>	<i>each</i>	<i>2,796</i>	<i>2</i>	<i>\$5,592</i>	
<i>RT-3 Road Storm Inspection</i>	<i>mile</i>	<i>1,528</i>	<i>3</i>	<i>\$4,584</i>	
<i>RT-4 Trail Stormproofing</i>	<i>each</i>	<i>7,551</i>	<i>1</i>	<i>\$7,551</i>	
<i>Subtotal Road & Trails</i>				<i>\$23,235</i>	<i>\$0</i>
D. Protection/Safety					
<i>Trail warning signs</i>		<i>0</i>	<i>0</i>	<i>\$0</i>	
<i>Subtotal Structures</i>				<i>\$0</i>	<i>\$0</i>
E. BAER Evaluation					
Assessment					\$8,937
<i>Subtotal Evaluation</i>					<i>\$8,937</i>
F. Monitoring					
				<i>\$0</i>	
<i>Subtotal Monitoring</i>				<i>\$0</i>	<i>\$0</i>
G. Totals				\$29,980	\$8,937
Previously approved					
Total for this request				\$29,980	

PART VII - APPROVALS

1. /s/Cheryl F. Probert November 6 /2015
Cheryl F. Probert, Nez Perce-Clearwater NF Forest Supervisor Date

2. _____ /2015
Leanne Marten, Region 1 Regional Forester Date

**Elk City Complex 2015
Cost/Risk Assessment**

Part 1. Treatment Cost

Treatment	cost
1. Armor/Stabilize Culvert Outlet	\$5,508
2. Install Diversion Dips	\$5,592
3. Road Storm Patrol	\$4,584
TOTAL COST	\$ 15,684

Part 2. Probability of Rehabilitation Treatments Successfully Meeting EFR Objectives

Treatment	%
1. Armor/Stabilize Culvert Outlet	85
2. Install Diversion Dips	85
3. Road Storm Patrol	70

Risk of Resource Value Loss or Damage

Identify the risk (high, medium, low, none or not applicable (NA)) of unacceptable impacts or loss of resources.

No Action- Treatments Not Implemented (check one)

Resource Value	None	Low	Mid	High
Human health and safety		X		
Plant communities at-risk from weed infestation				X
Native Plant community structure, function and composition				X
Aquatic community structure, function and composition		X		
Watershed integrity	X			
Heritage resources		X		
Threatened and Endangered Species (terrestrial)	X			
Threatened and Endangered Species (fish)		X		

Proposed Action - Treatments Successfully Implemented (check one)

Resource Value	None	Low	Mid	High
Human health and safety		X		
Plant communities at-risk from weed infestation			X	
Plant community structure, function and composition			X	
Aquatic community structure, function and composition		X		
Watershed integrity	X			
Heritage resources		X		
Threatened and Endangered Species (terrestrial)	X			
Threatened and Endangered Species (fish)		X		

Part 3. SUMMARY

1. Are the risks to natural resources and private property acceptable as a result of the fire if the following actions are taken?

Proposed Action Yes ☒ No ☐ Rationale for answer:

The engineering/road drainage treatments (armored dips, crossing stabilization, storm patrol, etc.) proposed are effective in stabilizing roads to pass flood events while maintaining access and reducing risks to water quality. The engineering treatments will be effective for stabilizing crossings in order to pass increased water and debris flows.

Major weed invasions can be avoided through early detection, treatment, and monitoring. Several species that exist in the Salmon River Valley (Rush Skeletonweed, Dalmation Toadflax) are not present within the Elk City Complex burned area and have the potential to disrupt and replace currently intact native plant communities. Spread of existing weeds into previously intact native plant communities can be enabled by fire effects. Road and trail systems within the burn area are potential corridors of invasion, and can be effectively monitored and treated.

No Action Yes ☐ No ☒ Rationale for answer:

There is a high probability of culvert and road prism damage in these areas if no action is taken, creating a need for expensive repairs including hauling of fill from off-site to replace that lost at creek crossings and heavily eroded road segments within burned areas.

Native plant communities would be subject to non-native invasive plant expansion into the burned area while native plants are recovering from the fire.

The areas selected for treatment have a high risk of negative impacts to road infrastructure, water quality and vegetation resources.

Alternative(s) Yes ☐ No ☐ Rationale for answer:

N/A

2. Is the probability of success of the proposed action, alternatives or no action acceptable given their costs?

Proposed Action Yes ☒ No ☐ Rationale for answer:

The engineering treatments will be effective for stabilizing crossings in order to pass increased water and debris flows, and to protect road segments threatened by post-fire hydrology.

Early assessment and treatment will detect and minimize weed invasion, and road crossing problems associated with the fire.

The beneficial results of treatment implementation are worth the monetary costs of installation.

No Action Yes ☐ No ☒ Rationale for answer:

Although the monetary cost of no action is low, weed invasion will produce ecological costs. Risk of new noxious/invasive weed species establishing themselves in the burned area, and invasion of currently weed-free areas is high. Critical areas and infrastructure were identified for treatment through the assessment of burn severity and Ranger District input.

Alternative(s) Yes ☐ No ☐ Rationale for answer:

N/A

3. Which approach will most cost-effectively and successfully attain the EFR objectives and therefore is recommended for implementation from a Cost/Risk Analysis standpoint?

Proposed Action ☒, Alternative(s) ☐, or No Action ☐

Comments: