Date of Report: 08/09/2023

BURNED-AREA REPORT

PART I - TYPE OF REQUEST

A. Type of Report

☐ 1. Funding request for estimated emergency stabilization funds

☒ 2. No Treatment Recommendation

B. Type of Action

☒ 1. Initial Request (Best estimate of funds needed to complete eligible safety and stabilization measures)

☐ 2. Interim Request #___

☐ Updating the initial funding request based on more accurate site data or design analysis

PART II - BURNED-AREA DESCRIPTION

A. Fire Name: Grapevine

B. Fire Number: AZ-PNF-001115

C. State: AZ

D. County: Yavapai

E. Region: Southwestern R3

F. Forest: Prescott

G. District: Verde

H. Fire Incident Job Code: P3QER023 (0309)

I. Date Fire Started: 7/21/2023

J. Date Fire Contained: - 8/8/2023

K. Suppression Cost: $5,965,157.00

L. Fire Suppression Damages Repaired with Suppression Funds (estimates):

1. **Fireline repaired (miles): Dozerline – 3.4; handline – 7.3**
2. **Other (identify): Mastication (fuelbreak) – 10.1 miles**

M. Watershed Numbers:

Table 1: Acres Burned by Watershed

HUC #	Watershed Name	Total Acres	Acres Burned	% of Watershed Burned
150701020203	Grapevine Gulch	10,322	82	Trace
150701020102	Upper Ash Creek	27,301	920	3.4
150701020206	Chaparral Gulch-Agua Fria River	37,915	42	Trace
150701020207	Yarber Wash	19,073	5	Trace

N. Total Acres Burned:

Table 2: Total Acres Burned by Ownership

OWNERSHIP	ACRES
NFS	1,049
OTHER FEDERAL (LIST AGENCY AND ACRES)	
STATE	
PRIVATE	
TOTAL	

O. Vegetation Types:
Chaparral and Ponderosa Pine (stringers).

P. Dominant Soils:

Table 3:Dominant Soil and Modeled Soil Loss

TES Map Unit	Total Acres	Parent Material	Veg Type	Slope Range	Erosion Hazard	Soil Taxa
438	574	metamorphic	chaparral	40+%	Severe	Lithic Haplustalfs
448	41	granite	chaparral	16-39%	Severe	Typic Ustorthents
453	207	metamorphic	chaparral	40+%	Severe	Lithic Haplustalfs
475	116	granite	chaparral	40+%	Severe	Lithic Haplustalfs
554	111	metamorphic	ponderosa	16-39%	Severe	Lithic Haplustalfs

Q. Geologic Types:

a. Granite, Metamorphic

R. Miles of Stream Channels by Order or Class:

Table 4: Miles of Stream Channels by Order or Class

STREAM TYPE	MILES OF STREAM
PERENNIAL	0.00
INTERMITTENT	1.54
EPHEMERAL	6.44
OTHER (DEFINE)	--

S. **Transportation System:**
Trails: *National Forest (miles):*
Roads: *National Forest (miles):* 1.66

PART III - WATERSHED CONDITION

A. Burn Severity (acres):

Table 5: Burn Severity Acres by Ownership

Soil Burn Severity	NFS	Other Federal (List Agency)	State	Total	% within the Fire Perimeter
Unburned	218				21
Low	210				20
Moderate	516				49

Soil Burn Severity	NFS	Other Federal (List Agency)	State	Total	% within the Fire Perimeter
High	105				10
Total	1049			1049	100

B. Water-Repellent Soil (acres):

No hydrophobicity was associated with unburned/low SBS. Approximately, 40% of the soils affiliated with moderate SBS was experiencing water repellency and 60% water repellency was associated with High SBS. However, fire induced repellency went to deeper depths where there were longer residence times. Two large rain events had fallen on the burned and water repellency seemed mottled and mosaic across the landscape where some place rainfall absorbed to a deeper horizon and other areas it did not.

C. Soil Erosion Hazard Rating: Severe

D. Erosion Potential: N/A

E. Sediment Potential: N/A

F. Estimated Vegetative Recovery Period (years):

7+ years for chaparral in the high burn severity; and 2-3 years within the moderate soil burn severity (SBS) areas.

G. Estimated Hydrologic Response (brief description):

Watershed conditions following a fire, such as loss of stabilizing vegetation, decreased soil porosity, and increased hydrophobicity in soils, are all factors that can increase the magnitude, timing, and volume of stormwater runoff. Additionally, the volume of sediment and ash that these flows can transport can cause aggradation, down cutting, and/or widening of stream channels that can significantly reduce the functioning condition of these channels. The increased peak flows pose a moderate threat to life, property, and resources within and below the burned area. The drainage of Tex Canyon can expect sediment-laden flows and elevated flood volumes. This will lead to increased flooding risks at road stream crossings on FSR 531/Ash Creek and upon FSR 9002W during precipitation events over the burned area.

No Post-fire hydrologic response were modelled.

Two large monsoon events have already fallen on the fire scar, an approximate one-hour 7.5-yr (1.4 inches) and 25-yr (2.01), showing no discernible impacts at the two downstream crossings of Ash Creek FSR 531.

PART V - SUMMARY OF ANALYSIS

Introduction/Background

The Grapevine Fire was discovered on July 21st, 2023 on the Prescott National Forest in a remote area approximatley 10 miles east of Prescott Valley and 2 miles south of Mingus Spring Ranch. The fire originated in a Pondorosa and grass vegetation type and strong winds combined with mixed topography allowed the fire to move south toward the community of White Horse, AZ into chaparral. Most of the burn scar was within the interior chaparral vegetation type with the Ponderosa Pine forest type located in the northern half, primarily associated with stringers or canyon bottoms. Within the Ponderosa, the fire experienced mixed soil burn severity with light/unburned comprising the largest amount In this veg type (about 77%). The majority of the soil burn severity is moderate (49%) and affiliated with interior chaparral with limited mosaics of high burn severity. Areas with moderate SBS has a mixture of impacts to soil properties. These properties include low to unburned characteristics with minimal impacts to vegetative cover; areas with vegetation ground cover consumption with no alteration to soil properties; and high SBS properties with full vegetation ground cover consumption and soil alteration with strong water repellency. High burn severity areas experienced complete consumption of shrub cover and vegetative ground cover with strong water repellency. Moderate SBS sites are expected to recovery within 2-3 years and water infiltratation is in a motteled / mosiac pattern across the landscape. High burn severity sites are expected to recover in 5-7 years, however they are surrounded by

moderate burn severity sites. Natural recovery is recommended due to rapid response of chaparral systems post-fire as well as the relatively small amount of acres of high severity in forested systems. Forest Service lands within the burn scar have already incured a 2-yr and 25-yr rain events and have not seen any damaging post fire impacts However, post-fire flooding events can still occur on roads within and downstream of the firescar.

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

Table 8: Critical Value Matrix

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**

1. **Human Life and Safety (HLS):**
   a. Public Use: The probability of usuage within drainages or stream crossings (see 1.b.) during a storm event is *Possible* and the magnitude of consequence is *Major*. **RISK: High.**
   b. Trail & Road: The two FSR 531 / Ash Creek crossings downstream from the burned area have a *Likely* probability of post fire flooding, unstable soils and falling rocks. Magnitude of Consequence to human life and safety could potentially be *Moderate*. **Risk is High**
   Use of 9002W within the burned area have a *Likely* probability of post fire unstable soils and falling rocks. Magnitude of Consequence to human life and safety could potentially be *Moderate*. **Risk is High**
2. **Property (P):**
   a. Roads. FSR 531, east of White Horse, at the most southern Road-Stream crossing of Ash Creek, historically incurred road damage with increased flow. The majority of the burned area flows into this stream-road interface. The majority of the contributing drainage basin was subjected to moderate burn severity. Roads were assessed on 8/7/2023 and no road concerns were seen after two possible damaging events. The probability of damage/loss to the road crossing road segment is *Unlikely* and magnitude of damage is *Moderate*. **Risk: Low.**
   FSR9002W, is located north of the White Horse community and goes through much of the high and moderate burn severity. However, current route does not meet level 2 BMP protocol for drainage and slope breaks and is highly vulnerable due to continuous steep and long runs on steep grades with no drainage. Fire will exacerbate damage to the system route. The probability of damage/loss to the road segment is *Likely* and magnitude of damage is *Moderate-Minor*. **Risk: High - Low.**
   b. Trails. There is an **Unlikely** risk to approximately 0.05 miles of trail downstream of the burned area. This trail section occurs below moderate and high soil burn severity on soils with slight erosion hazard in flat terrain. Probability of trail loss is *Unlikely* and consequence is *Minor.* **Risk: Very Low.**

4. **Natural Resources (NR):**
   a. Hydrology: There is increased threat to hydrologic function (magnitude, timing, and volume of storm water runoff) and changes in the condition of stream channels from post fire runoff and sediment. The probability of altered hydrologic function during a design storm event is *Possible* and the magnitude of consequence is *Minor*. **RISK: Low**.
   b. Soil: *Moderate* negative impacts to soil productivity in the form of accelerated erosion and a decline to soil function is *Likely* resulting in a **High Risk** to the soil resources, in the short term. Recovery and characteristics are identified in the Introduction.

c. Aquatics: There are no aquatic bearing streams within or directly downstream of the burned area; the probability of damage to aquatic resources within and downstream of the Grapevine Fire is *Unlikely* and the magnitude of consequence is *Minor*. **Risk: Very Low.**

d. Minerals/Mines: Within the Grapevine Fire, there are historical hard rock prospect mines, the Montana Property, located with minor tailings sited on NFS lands. Hard rock mining can be associated with concerns of heavy metals and related contaminants being present. However, the site is located on the edge of the fire with remaining intact downslope vegetation. The probability of damage or loss related to post fire impacts to water quality from mine spoils is *possible* with a magnitude of consequence of *minor*. **Risk: Low.**

e. Wildlife: Based on the burn severity, the probability of damage or loss to Mexican spotted owl Recovery Foraging Habitat is Unlikely due to the minor impacts from the fire and fire operations. The fire did not burn within any Northern goshawk PFAs but various fire operations did occur. The probability of damage or loss to Northern goshawk PFAs is *Unlikely* due to the minor impacts from the fire operations. The magnitude of consequences for the MSO and Northern goshawk and their habitats would be *Minor* given the localized fire effects and limited amount of fire operations to these species habitats. **Risk: Low**.

f. Invasive vegetation: There are no documented invasive or noxious weed populations within the Grapevine Incident; however, it is likely that invasive and/or noxious weeds are present and that fire suppression efforts have spread them within the burned area. The BAER risk assessment is low, though it is possible that weed species occur in the area, the consequence would be minor because it would most likely result in localized effects. Probability of Damage or Loss = *Possible*. Magnitude of Consequence = *Minor*. **Risk = Low**.

5. Cultural and Heritage Resources: There is one archaeological site located within the Grapevine and Racetrack Fire boundaries. Site 03090500457 is a National Register eligible. There is one multicomponent, non-fire sensitive site located in an unburned area within the Grapevine Fire perimeter. There is very little chance that post fire natural processes, such as erosion, will have an adverse effect on this site. Post fire impacts to heritage resources is *unlikely* with a magnitude of consequence of *low*, therefore the post fire **risk** to heritage resources is **Low**.

The other site is in an unburned area and very low potential for soil loss with a probability of damage or loss as *unlikely* and magnitude of consequence as low with risk to heritage resources is *Minor*. **Risk is Very Low.**

B. Emergency Treatment Objectives:

Human Life and Safety – Post warning for FSR 531 on Prescott National Forest public facing website, post news release, have flyers available at the district, and deliver to White Horse community mail boxes.

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

Land: N/A
Channel: N/A
Roads/Trails: N/A
Protection/Safety: 100

D. Probability of Treatment Success

Table 9: Probability of Treatment Success

	1 year after treatment	*3 years after treatment*	*5 years after treatment*
Land			
Channel			
Roads/Trails			
Protection/Safety	60	90	95

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

F. Cost of Selected Alternative (Including Loss): N/A

G. Skills Represented on Burned-Area Survey Team:

☒ Soils ☒ Hydrology ☒Engineering ☒ GIS ☒ Archaeology
☒ Weeds ☒ Recreation ☒ Fisheries ☒ Wildlife
☐ Other:

Team Leader: Chad Yocum
Email: chad.yocum@usda.gov **Phone(s)**: 928-458-4879

Forest BAER Coordinator: David Moore (PNF),
Email:david.moore@usda.gov
Phone(s): 928-778-3753

Team Members: *Table 10: BAER Team Members by Skill*

Skill	Team Member Name
Team Lead	Chad Yocum
Soils	David Moore
Hydrology	Chad Yocum
Engineering	Sergio Montanez
GIS	Mark Christiano
Minerals	Frances Alvarado
Archaeology	John Rose
Weeds	Francisco Anaya
Weeds	Seth Ratering (trainee)
Recreation	Jason Williams
Aquatics	Albert Sillas
Wildlife	Albert Sillas

H. Treatment Narrative:

Land Treatments: N/A

Channel Treatments: N/A

Trail Treatments: N/A

Road Treatments: N/A

Protection/Safety Treatments: – Post warning for FSR 531 on Prescott National Forest public facing website, post news release, have flyers available at the district, and deliver to White Horse community mail boxes.

I. Monitoring Narrative:As part of General Force Account, With the importance of FSR 531, quarterly inspection will be conducted to protect road infrastructure for ingress and egress.

PART VI – EMERGENCY STABILIZATION TREATMENTS AND SOURCE OF FUNDS

			NFS Lands				Other Lands				All
		Unit	# of		Other		# of	Fed	# of	Non Fed	Total
Line Items	Units	Cost	Units	BAER $	$		units	$	Units	$	$
A. Land Treatments											
				$0	$0			$0		$0	$0
				$0	$0			$0		$0	$0
Insert new items above this line!				$0	$0			$0		$0	$0
Subtotal Land Treatments				$0	$0			$0		$0	$0
B. Channel Treatments											
				$0	$0			$0		$0	$0
				$0	$0			$0		$0	$0
Insert new items above this line!				$0	$0			$0		$0	$0
Subtotal Channel Treatments				$0	$0			$0		$0	$0
C. Road and Trails											
				$0	$0			$0		$0	$0
				$0	$0			$0		$0	$0
Insert new items above this line!				$0	$0			$0		$0	$0
Subtotal Road and Trails				$0	$0			$0		$0	$0
D. Protection/Safety											
Road/Trail Hazard Signs				$0	$0			$0		$0	$0
Road Closure Gate				$0	$0			$0		$0	$0
Insert new items above this line!				$0	$0			$0		$0	$0
Subtotal Protection/Safety				$0	$0			$0		$0	$0
E. BAER Evaluation											
Initial Assessment	Report			$0	$3,500			$0		$0	$3,500
				$0	$0			$0		$0	$0
Insert new items above this line!				---	$0			$0		$0	$0
Subtotal Evaluation				$0	$3,500			$0		$0	$3,500
F. Monitoring											
Force-Senator Hwy Storm Patrol				$0	$0			$0		$0	$0
				$0	$0			$0		$0	$0
Insert new items above this line!				$0	$0			$0		$0	$0
Subtotal Monitoring				$0	$0			$0		$0	$0
G. Totals				$0	$3,500			**$0**		**$0**	**$3,500**
Previously approved											
Total for this request				**$0**							

PART VII - APPROVALS

Dale A. Deiter

Digitally signed by Dale Deiter
Date: 2023.08.09 18:36:39 -07'00'

1. _____
Forest Supervisor Date