

Date of Report: 11/9/2020

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 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: Hidden Fire

B. Fire Number: AZ-TNF-002616

C. State: Arizona

D. County: Gila

E. Region: R03

F. Forest: Tonto NF

G. District: D04/05 5,412 acres, D06 600 acres

H. Fire Incident Job Code: P3NHW7

I. Date Fire Started: 8/25/2020

J. Date Fire Contained: 9/30/2020

K. Suppression Cost: \$5,000,000

L. Fire Suppression Damages Repaired with Suppression Funds (estimates): \$15,000

1. **Fireline repaired (miles):** 2.2 miles
2. **Other (identify):** dozer lines and spike camps/helispots were reseeded (35 acres)

M. Watershed Numbers:

Table 1: Acres Burned by Watershed

HUC #	Watershed Name	Total Acres	Acres Burned	% of Watershed Burned
150601050404	Cottonwood Creek	10,655	2.4	>1
150601050406	Lambing Ck-Tonto Ck	33,398	13	>1
150601050102	Rock Creek	16,318	261	1.6

HUC #	Watershed Name	Total Acres	Acres Burned	% of Watershed Burned
150601050401	Gun Creek	36,695	5,736	16

N. Total Acres Burned:*Table 2: Total Acres Burned by Ownership*

ownership	acres
nfs	6,015
other federal (list agency and acres)	
state	
private	
total	6,015

O. Vegetation Types:

Chaparral – 621 acres
 Juniper – 208 acres
 Pinyon Juniper – 2,702 acres
 Ponderosa Pine – 2,465 acres

P. Dominant Soils: Primarily Lithic Haplustalfs, Typic Haplustalfs, Lithic Argiustolls, and Udic Argiustolls

Q. Geologic Types: Middle Proterozoic Sedimentary rocks-Primarily of the Apache Group. Includes Red-brown shale and sandstone, buff to orange quartzite, limestone, basalt, black shale, and sparse conglomerate

R. Miles of Stream Channels by Order or Class:*Table 3: Miles of Stream Channels by Order or Class*

Stream Type	Miles of Stream
Perennial	0
Intermittent	1.3
Ephemeral	40
OTHER (DEFINE)	

S. Transportation System:

Trails: National Forest (miles): 0 Other (miles):
Roads: National Forest (miles): 15 Other (miles):

PART III - WATERSHED CONDITION**A. Burn Severity (acres):***Table 4: Burn Severity Acres by Ownership*

Soil Burn Severity	NFS	Other Federal (List Agency)	State	Private	Total	% within the Fire Perimeter
Unburned	1,221					
Low	1,732					
Moderate	1,545					
High	1,594					
Total	6,092					

B. Water-Repellent Soil (acres): 3,139**C. Soil Erosion Hazard Rating:** Low – 262 acres, Moderate – 4,140 acres, High – 1020 acres**D. Erosion Potential:** 0.72 tons/acre**E. Sediment Potential:** 0.72 tons/acre**F. Estimated Vegetative Recovery Period (years):** 5-10 years**G. Estimated Hydrologic Response (brief description):**

The vast majority (95%) of the burned area lies within the Gun Creek watershed. Gun Creek is a tributary to Tonto Creek just above the beginning of Tonto Basin. Fifty-two percent of the burned area burned with moderate and high soil burn severity. Changes in peak flows resulting from the fire were estimated near the FR 416B crossing of Gun Creek and the intersection of FR 939A with Gun Creek. Peak flows increased substantially at these locations. The two year return interval one hour storm that would have resulted in a peak flow of 26 cfs prior to the fire but results in a peak flow of 230 cfs after the fire. The 230 cfs postfire peak flow is equivalent to the peak flow resulting from the 25 year return interval storm before the fire. The peak flow from the post fire 10 year one hour storm results in a peak flow greater than prefire 100 year one hour flood. Similar results occur at the intersection of FR 939A with Gun Creek.

Flash flood risks from hyper concentrated flows range from moderate at both locations for the two year storm to high near FR 416B and extreme for the intersection with FR 939A from the 10 year storm.

Debris flow hazard for most watersheds within the burned area from the storm with a 15 minute intensity of 24 mm/hr (1in/hr) is mostly low. Debris flow hazard increases as rainfall intensity increases. When rainfall intensity reaches a 15 minute intensity of 40mm/hr (1.67 in/hr) debris flow hazard is mostly moderate with about equally sized areas of low and high hazard.

PART V - SUMMARY OF ANALYSIS

Introduction/Background

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

Table 5: 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. Users of roads through the burned area are at risk from flash floods and debris flows when crossing drainages and traveling below burned slopes. These routes include portions of FR 1938, FR 416B, and FR 416

2. Property (P):

- a. Roads: Four roads that would remain open through the Travel Management review process pass along the perimeter or through the interior of the burned area.
 - FR 1938 passes along the perimeter of the burned area for 1.7 miles and then through the interior for 2.4 miles. This road is proposed for conversion from a ML2 road to a MTr in Travel Management. The majority of the road is along a ridgeline. A short reach of the road crosses a small burned watershed near the northwest edge of the burned area.
 - FR 609 forms 0.8 miles of the perimeter of the burned area. It travels along the watershed divide between Gun Creek to the north and Oak Creek to the south. It does not cross any channels with burned watershed area above the crossing. FR 609 is maintained by Gila County.
 - FR 416B passes through the interior of the burned area along a ridgeline for a little more than 2 miles from its T intersection with FR 609 and then drops down and crosses three tributaries to the mainstem of Gun Creek for another 1.3 miles. The next two miles form part of the northern perimeter of the burned area but pass below the burned slopes of Chalk Mountain. The following 0.75 miles are outside the fire perimeter but below the eastern slopes of Pine Mountain that have also been burned by the fire.
 - FR 416 forms part of the perimeter of the fire but also lies within the burned area for about 1.4 miles. This road primarily follows the watershed divide between Gun Creek to the north and Turkey Creek to the south.

Several Level 1 routes T off FR 416 for short distances into the interior of the fire. These routes are proposed for decommissioning under Travel Management.

Natural Resources (NR):

- a. Soils: Post-fire erosion and sediment yield rates from the burned area are mostly below tolerance erosion rates. One unit, Map Unit 479 does exceed tolerance erosion rates. This unit is a Juniper unit on slopes greater than 40 percent. These slopes are too steep to treat with mulch. The area occupied by this unit is only 208 acres, the soils are shallow, and some of the unit is rock outcrop. The values at risk do not appear to justify treatment.
- b. Invasive Species: The primary invasive species in and near the burned area include Yellow Bluestem, a regional priority species, and Bull and Canada thistle.
- c. Threatened and Endangered Species: Federally listed species or their habitats were not located within the fire perimeter. Designated critical habitat for southwestern willow flycatcher, northern Mexican gartersnake, narrow-headed gartersnake, and spinedace is located along Tonto Creek which formed the western edge of the planning area. Gun Creek is a tributary to Tonto Creek.

- d. Hydrologic Function: Peak flows will be elevated for 5-10 years following the fire in Gun Creek and to a lesser extent in Del Shay Creek. Del Shay Creek is a tributary to Gun Creek well above the confluence with Tonto Creek. Water quality will be impacted in these drainages. Water quality may also be impacted in Turkey Creek, a tributary to Rock Creek. Water quality impacts should be much shorter lived than the peak flow impacts.

4. Cultural and Heritage Resources:

Cultural resources requiring treatment were not identified

B. Emergency Treatment Objectives:

- Provide hazard warnings for users of roads in and below the burned area.
- Conduct early detection and rapid removal (EDRR) for invasive species in the burned area.

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

Land Click here to enter text.

Channel N/A

Roads/Trails N/A

Protection/Safety 90%

D. Probability of Treatment Success

Table 6: Probability of Treatment Success

	1 year after treatment	3 years after treatment	5 years after treatment
Land	75	75	75
Channel			
Roads/Trails			
Protection/Safety	70	90	95

E. Cost of No-Action (Including Loss):\$200,000

G. Cost of Selected Alternative (Including Loss): \$110,000

H. Skills Represented on Burned-Area Survey Team:

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

Team Leader: Grant Loomis

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Phone(s) 480 406 7352

Forest BAER Coordinator: Kelly Mott LaCroix

Email: Kelly.mottlacroix@usda.gov

Phone(s):480 406 6218

Team Members: Table 7: BAER Team Members by Skill

Skill	Team Member Name
Team Lead(s)	Grant Loomis

Skill	Team Member Name
Soils	David Watson
Hydrology	Alex Makic, Grant Loomis
Engineering	Michelle Tom
GIS	Frank Williams
Archaeology	Martha Mcahon
Weeds	Ryan Nicholas
Recreation	
Wildlife	Christina Akins

I. Treatment Narrative:

Land Treatments: Conduct early detection surveys for invasive species and implement rapid removal treatments if detected.

Channel Treatments:

Roads and Trail Treatments:

Protection/Safety Treatments: Place hazard warning signs where FR 1398 leaves FR 609 at the south end of the burned area, on FR 416B where it leaves FR 609 near the southwest end of the fire and where it leaves FR 416 at the east side of the burned area. One sign on FR 1939 just before the intersection with FR 416B. Two signs on FR 416, one just past the intersection with FR 609 on the west side and one past the intersection with FR 416B on the east side.

I. Monitoring Narrative:

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PART VI – EMERGENCY STABILIZATION TREATMENTS AND SOURCE OF FUNDS

Line Items	Units	Unit Cost	# of Units	BAER \$	Other \$	# of units	Fed \$	# of Units	Non Fed \$	Total \$
A. Land Treatments										
Invasive species (EDRR)	project	7,500	1	\$7,500	\$0		\$0		\$0	\$7,500
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
Subtotal Land Treatments				\$7,500	\$0		\$0		\$0	\$7,500
B. Channel Treatments										
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$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
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
Subtotal Road and Trails				\$0	\$0		\$0		\$0	\$0
D. Protection/Safety										
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
Subtotal Protection/Safety				\$0	\$0		\$0		\$0	\$0
E. BAER Evaluation										
Initial Assessment	Report			---	\$0		\$0		\$0	\$0
		\$4,000		\$0	\$4,000		\$0		\$0	\$4,000
<i>Insert new items above this line!</i>				---	\$0		\$0		\$0	\$0
Subtotal Evaluation				\$0	\$4,000		\$0		\$0	\$4,000
F. Monitoring										
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
Subtotal Monitoring				\$0	\$0		\$0		\$0	\$0
G. Totals				\$7,500	\$4,000		\$0		\$0	\$11,500
Previously approved										
Total for this request				\$7,500						

PART VII - APPROVALS

1. _____
 Forest Supervisor Date