

**Date of Report:** 10/21/2020

## 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:** Meddler Fire

**B. Fire Number:** AZ-TNF-002600

**C. State:** Arizona

**D. County:** Gila

**E. Region:** 03

**F. Forest:** Tonto

**G. District:** Tonto Basin (D6)

**H. Fire Incident Job Code:** P3NG67

**I. Date Fire Started:** 8/24/2020

**J. Date Fire Contained:** 8/30/2020

**K. Suppression Cost:** \$75,000

**L. Fire Suppression Damages Repaired with Suppression Funds (estimates):** N/A

1. **Fireline repaired (miles):** N/A  
2. **Other (identify):** Click here to enter text.

**M. Watershed Numbers:**

*Table 1: Acres Burned by Watershed*

HUC #	Watershed Name	Total Acres	Acres Burned	% of Watershed Burned
150601030904	Shute Springs Ck-Salt River	15,653	1,664	10.6%
150601030903	Sycamore Canyon – Salt River	24,507	3	0.1%
150601030905	Meddler Wash- Salt River	24,411	799	3.3%
150601030902	Chalk Creek	13,950	1,965	14 %
150601030901	Coon Creek	9,358	16	0.2%

**N. Total Acres Burned:** 4,448

Table 2: Total Acres Burned by Ownership

OWNERSHIP	ACRES
NFS	4,448
OTHER FEDERAL (LIST AGENCY AND ACRES)	
STATE	
PRIVATE	
TOTAL	

**O. Vegetation Types:** Semi Desert Grassland (2696 acres) Sonoran Desert (1701 acres) Riparian (50 acres)

**P. Dominant Soils:** Soils consist primarily of Aridic Haplustalfs, Aridic Ustorthents, and Lithic Haplustalfs

**Q. Geologic Types:** Black Mesa is mostly dark, mesa-forming basalt deposited as lava flows. The surrounding area within the burn perimeter consists of sequences of diverse volcanic rocks with abundant interbedded sedimentary rocks.

**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	2
EPHEMERAL	18.8
OTHER (DEFINE)	

**S. Transportation System:**

**Trails:** National Forest (miles):

Other (miles):

**Roads:** National Forest (miles): 5.8

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	474					10
Low	3,248					73
Moderate	750					17
High						
Total	4,472					100

**B. Water-Repellent Soil (acres):** 750

**C. Soil Erosion Hazard Rating:** Low-1,065 Moderate-3,333 N/A - 50

**D. Erosion Potential:** 3.43 ton/ac

**E. Sediment Potential:** 3.43 ton/ac

**F. Estimated Vegetative Recovery Period (years):** 5 years

**G. Estimated Hydrologic Response (brief description):** The Meddler Fire burned approximately 4,450 acres within parts of five sixth code watersheds, but primarily within the Chalk Creek (HUC 150601030902)

and Shute Springs Creek-Salt River (150601030904) watersheds. Four subwatersheds were delineated to assess impacts to values at risk. These include the watersheds listed in Table 1.

Table 1. Meddler Fire subwatersheds

Watershed Name	Area (acres)	Burned Area (acres)	Percent Burned
Chalk Creek at Dry Creek	4,118	1,406	34%
Braddock Creek at FR 3274	1,629	490	30%
Watershed B at Salt River	902	888	98%
Meddler Wash at FR 203	340	253	74%

Chalk Creek and Meddler Watershed B are direct tributaries to the Salt River in the Salt River Canyon Wilderness. Braddock Creek and Meddler Wash are tributaries to the Salt River near Meddler Point. Braddock Creek flows through private land near the Rock House community before emptying into the Salt. Changes in peak flows resulting from the fire were modelled with the Wildcat5 Peak Flow Model. Peak flow increases ranged from 13% to 44% for the two year recurrence interval flood with the greatest increase from Watershed B and the smallest from Braddock Creek at FR3274. Percentage increases in peak flows declined for the five and ten year recurrence interval floods to range from 11% to 35% for the ten year event.

Peak flows for the first damaging storm events (sometimes referred to as hyper concentrated flows) were estimated using equations developed by the National Weather Service. The results are displayed in Table 2.

Table 2. Flash Flood Risk from Meddler Fire Watersheds

Watershed	Drainage Area (sq mi)	Flash Flood Risk			
		Peak Flow/Square Mile (cfs/sq mi)			
		Storm Recurrence Interval (yrs)			
		1	2	5	10
Chalk Creek	6.4	129	225	452	754
Braddock Creek at FR 3274	2.55	392	679	1390	2392
Watershed B at Salt River	1.41	471	814	1687	2953
Meddler Wash at FR 203	0.53	1003			

#### Risk Rating

Low Risk	< 100 cfs/sq. mi
Moderate Risk	100-1000 cfs/sq. mi
High Risk	1000-2000 cfs/sq. mi
Extreme Risk	>2000 cfs/sq. mi

The US Geological Survey has estimated the probability and magnitude of debris flows within and from the burned area and developed a debris flow hazard rating from the combination of these factors for various rainfall intensities for watersheds within the burned area. Most of the burn area is estimated to have a low level of debris-flow hazard from the storm with a peak 15 minute intensity of 24 mm/hr (approximately one inch per hour). Storms with higher intensities have greater debris flow hazards.

## **PART V - SUMMARY OF ANALYSIS**

### **Introduction/Background**

The Meddler Fire was ignited on September 24 and contained on September 30. It burned with primarily low burn severity through approximately 4450 acres of semi-desert grassland and sonoran desert. It burned Black

Mesa and some surrounding area just north of the Salt River Canyon Wilderness and mostly south of the Cherry Creek Road (FSR 203). It is bounded on the west by FR 203 and Braddock Creek (a tributary to the Salt River near the Rock House community) and on the east it burned between just beyond Dry Creek but not as far as Coon Creek (a perennial stream tributary to the Salt River in the Wilderness area). The Salt River below Black Mesa is a popular destination for river runners. Dispersed campsites for river runners exist below Chalk Creek and an unnamed tributary to the Salt River just west of Chalk Creek. Both watersheds were burned in the fire and threaten dispersed campsites with flash floods. The Cherry Creek Road is a well used Maintenance Level 3 road that provides access to Coon Creek and Cherry Creek (both perennial streams in the sonoran desert) and to private residences along these creeks. The Cherry Creek road is maintained by Gila County under a maintenance agreement with the County. The road is threatened by flash flood potential where it crosses Meddler Wash. The headwaters of Meddler Wash were burned in the fire. FR 3271 is the primary access road into the burned area, FR 1792 provides access to dispersed recreation sites along Dry Creek within the burned area. Portions of FSR 9 and FSR 3274 travel up the wash bottom of Braddock Creek, the headwaters of which were also burned in the fire.

Debris flow hazard from the storm with a 15 minute intensity of one inch per hour is mostly low, Vegetative recovery is anticipated within five years.

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

Table 5: Critical Value Matrix

Probability of Damage or Loss	Magnitude of Consequences		
	Major	Moderate	Minor
	<b>RISK</b>		
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. Threats to life and Safety include users on National Forest System roads: primarily FR 203, FR 3274 and FR 3271 from flash flooding, hyper-concentrated flows, debris flows, and rolling rocks. FR 3274 travels up the wash bottom of an unnamed tributary to Braddock Creek. A portion of the watershed area of this tributary above the road has been burned. FR 203 (the Cherry Creek Road) crosses Meddler Wash below a portion of the burned watershed area of this wash. FR 3271 travels into the interior of the burned area and crosses a number of small, burned washes as it passes to the top of Black Mesa. Other less affected NFS roads include: FR 1075 which crosses a small burned tributary to Chalk Creek and parallels Chalk Creek through the burned area and below this tributary for a short distance, FR 1792 which parallels a short reach of Dry Creek within the burned area and below burned slopes that flow toward Dry Creek, and provides access to a few dispersed camp sites along Dry Creek, FR 1784 which makes a short loop along a bench in the burned area, FR 1784A which drops off the bench and ends at a small unnamed tributary to Meddler Wash which has been burned, and FR 9 which travels up from State Highway 288 to FR3274. Portions of the route are in the wash bottom of Braddock Creek and are threatened by increased peak flows and debris. Recreational users floating the Salt River through the Salt River Canyon who choose to camp near the confluence of Chalk Creek with the Salt River and the confluence of an unnamed tributary (Watershed B) west of Chalk Creek with the Salt River would be at risk from flash floods and debris flows.
- b. A popular waterfall and swimming hole on Chalk Creek could put life and safety of visitors at risk as well.

The probability of damage or loss to human life and safety is possible, the magnitude of consequences would be major, and the risk would be High.

2. **Property (P):** Threats to National Forest System property include damage to the NFS roads listed above from flooding, erosion and debris flows. FR 203 is a ML 3 native surfaced road that receives substantial use and provides access to dispersed recreation sites along Coon and Cherry Creeks, to

trailheads into the Sierra Ancha Wilderness, to a power line, to range improvements, and to inhabited parcels of private land. The probability of damage or loss to this road is possible, the magnitude of consequences is moderate, and the Risk is Intermediate.

The remaining roads are primarily ML2 roads or user created routes. Probability of damage or loss to these routes is possible, magnitude of consequences is minor, and risk is very low.

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

Threatened and Endangered species and their habitat do not occur within the burned area, but do exist below the burned area along the Salt River. Threatened and Endangered species occupying habitat along the Salt River include Southwestern Willow Flycatcher, Yellow Billed Cuckoo, and Narrow Headed Garter Snake. These species may be harmed by scouring flows and reduced water quality that can damage habitat. Probability of damage is possible, magnitude of consequences moderate, and Risk intermediate.

The primary invasive species that may encroach into the burned area include Buffelgrass and Salt Cedar. Buffelgrass can out-compete native vegetation for soil nutrients and moisture. In addition, infestations of buffelgrass alter fire regimes in native plant communities by changing fire frequency and intensity through an increase in fuel loading and connectivity. Buffelgrass has the potential to displace native plant communities and change ecologically rich areas into near-monocultures of buffelgrass with decreased diversity, cover, and densities of native plants.

Salt Cedar alters the ecology and hydrology of native riparian systems and generally diminishes habitat quality. Once Salt Cedar invades a riparian area, it creates dense thickets, or monocultures, that alter the native landscape. It can increase wildfire because it produces dense thickets of woody invasive trees.

The probability of damage or loss from invasive species is likely, the magnitude of consequences is major and the risk is very high.

Soil erosion modeling indicates low sedimentation can be expected for most of the burned area. One TEUI unit would result in sedimentation that exceeds tolerance rates. It is very likely that soil productivity will be lost in this unit. Loss of soil productivity is a long-term effect, not an irreversible one. Renewal rates will depend on rainfall, vegetation type, weathering rates, burn severity distribution and other ecosystem characteristics. Magnitude of consequences within this unit is moderate and resulting risk is very high.

### **4. Cultural and Heritage Resources:**

Review of Tonto National Forest database identifies 13 previously recorded sites within the area of potential effect (which includes the burned area and areas downgradient of the burn). Seven sites have been determined to be Potentially Eligible for inclusion to the National Register of Historic Places. The remaining 6 sites are Unevaluated/Indeterminate and must be considered for treatment.

Damage to significant cultural resources can occur due to post-fire effects such as increased runoff, erosion, and debris flows. The fire has also had the indirect effect of increasing the visibility of site locations exposing them to the possibility of vandalism and looting.

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

Warn Forest road users of the fire generated hazards with signage and recreational users of the Salt River with a clause in their permit letter explaining the hazard.

Conduct early detection and rapid removal surveys for invasive species

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

Land 80%

Channel N/A

Roads/Trails N/A

Protection/Safety 80%

**D. Probability of Treatment Success**

Table 6: Probability of Treatment Success

	<b>1 year after treatment</b>	<b>3 years after treatment</b>	<b>5 years after treatment</b>
<b>Land</b>	60	70	80
<b>Channel</b>			
<b>Roads/Trails</b>			
<b>Protection/Safety</b>	80	90	95

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

\$110,000

**G. Skills Represented on Burned-Area Survey Team:**

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

**Team Leader:** Grant Loomis**Email:** Moalty21@gmail.com**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

<b>Skill</b>	<b>Team Member Name</b>
<b>Team Lead(s)</b>	Grant Loomis
<b>Soils</b>	David Watson
<b>Hydrology</b>	Alex Makic
<b>Engineering</b>	Michelle Tom
<b>GIS</b>	Frank Williams
<b>Archaeology</b>	Steve Germick
<b>Weeds</b>	Ryan Nicholas
<b>Recreation</b>	Cheryl Cormack
<b>Wildlife</b>	Camden Bruner

**H. Treatment Narrative:**

**Land Treatments:** Conduct early detection and rapid removal surveys for non-native species, primarily buffelgrass and salt cedar.

**Channel Treatments:**

**Roads and Trail Treatments:**

**Protection/Safety Treatments:**

Place six hazard warning signs on FSR's 203, 3274, 1075, 1792, and 9. Locations would be:

FSR 203 - One sign along the eastbound route before the intersection with FSR 3274 and one along the westbound side near the intersection with FSR 3269

FSR 3274 – One sign on FSR 3274 just past the intersection with FSR 203

FSR 1075 – One sign on FSR 1075 just past the intersection with FSR 203

FSR 1792 – One sign on FSR 1792 just past the intersection with FSR 203

FSR 9 – One sign on FSR 9 just above the intersection with State Highway 288

Include a statement in the return letter to successful applicants for permits to float the Salt River Canyon about flash flood and debris flow hazards of camping near the confluence of Chalk Creek and the first unnamed tributary to the west of Chalk Creek. Warn them as well about the same hazards of visiting a waterfall and swimming hole on Chalk Creek below the burned area.

**I. Monitoring Narrative:**

				\$0	\$0		\$0		\$0	\$0
Insert new items above this line!				\$0	\$0		\$0		\$0	\$0
Subtotal Land Treatments				\$7,500	\$0		\$0		\$0	\$7,500
<b>B. Channel Treatments</b>										
				\$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
<b>C. Road and Trails</b>										
				\$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
<b>D. Protection/Safety</b>										
warning signs	ea	300	6	\$1,800	\$0		\$0		\$0	\$1,800
				\$0	\$0		\$0		\$0	\$0
Insert new items above this line!				\$0	\$0		\$0		\$0	\$0
Subtotal Protection/Safety				\$1,800	\$0		\$0		\$0	\$1,800
<b>E. BAER Evaluation</b>										
Initial Assessment	Report			---	\$0		\$0		\$0	\$0
	Report	\$4,000	1	\$0	\$4,000		\$0		\$0	\$4,000
Insert new items above this line!				---	\$0		\$0		\$0	\$0
Subtotal Evaluation				\$0	\$4,000		\$0		\$0	\$4,000
<b>F. Monitoring</b>										
				\$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
<b>G. Totals</b>				\$9,300	\$4,000		\$0		\$0	\$13,300
Previously approved										
Total for this request				\$9,300						

1. \_\_\_\_\_  
Forest Supervisor Date