Date of Report: July 1, 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: Mangum

B. Fire Number: AZ-KNF-000359

C. State: Arizona

D. County: Coconino

E. Region: 3

F. Forest: Kaibab

G. District: 3

H. Fire Incident Job Code: P3M576 (0307)

I. Date Fire Started: 6/08/2020 at 3:00 p.m.

J. Date Fire Contained: Not contained (63%)

K. Suppression Cost:

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

1. **Fireline repaired (miles): 2 miles of line have been mulched/chipped, sixty-one miles of hand and dozer line remain to be seeded. Seed and spreaders have been ordered. Hydromulching is planned along Hwy 89A and along power lines where power line replacement has resulted in soil disturbance.**
2. **Other (identify): Livestock fences are being repaired and one livestock corral is being replaced.**

M. Watershed Numbers:

Table 1: Acres Burned by Watershed

HUC #	Watershed Name	Total Acres	Acres Burned	% of Watershed Burned
140700070502	Upper Coyote Wash	21,052	718	3.4
150100010101	Trail Canyon	11,607	1,229	10.6
150100010103	House Rock Canyon-House Rock Wash	33,010	4,955	15.0
150100030203	Middle White Sage Wash	28,229	124	0.4
150100030204	Willis Canyon	11,538	8,272	71.7
150100030205	Rock Canyon	41,878	14,689	35.1
150100030206	Kaibab Wash	11,292	349	3.1
150100030401	Le Fevre Canyon	23,149	5,533	24.0
150100030404	Lefevre Ridge	7,859	351	4.5

HUC #	Watershed Name	Total Acres	Acres Burned	% of Watershed Burned
150100030405	Hidden Lake	12,522	1,575	12.6
150100030406	Jacob Canyon	32,412	9,914	30.6
150100030703	Moquitch Canyon	16,283	2,801	17.2
150100030704	Warm Springs Canyon	29,408	11,357	38.6
150100030705	Nail Canyon	17,609	8,648	49.1
150100030707	Pigeon Canyon-Snake Gulch	40,124	506	1.3

N. Total Acres Burned:

Table 2: Total Acres Burned by Ownership

OWNERSHIP	ACRES
NFS	71,187.3
OTHER FEDERAL (BLM)	43.3
STATE	186.7
PRIVATE	1.6
AZ GAME AND FISH	0.9
TOTAL	71,419.8

O. Vegetation Types: Ponderosa pine (*Pinus ponderosa*) 40,832.6 ac.; two-needle piñon (*Pinus edulis*) and juniper (*Juniperus osteosperma*) 30,367.4 ac.

P. Dominant Soils: Typic Haplustalfs (45,279.9 ac.), Lithic Ustochrepts (20,434.7 ac.), Typic Ustochrepts (2,642.5 ac.), Cumulic Haploborolls (616.9 ac.), Fluventic Ustochrepts (612.9 ac.), Eutric Glossoboralfs (487.5 ac.), Typic Haploborolls (347.7 ac.), Lithic Haploborolls (495.02 ac.), Cumulic Haplustolls (245.7 ac.), Aridic Ustochrepts (22.5 ac.), Typic Paleboralfs (5.7 ac.).

Q. Geologic Types: Permian sedimentary rocks (limestone and sandstone) characterized as carbonite karsts (68,541.7 ac.), Permian to Pennsylvanian sedimentary rocks and breccia (sandstone, siltstone, mudstone and dolomite) characterized as evaporite karsts (2,651.3 ac.)

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	12.4
EPHEMERAL	439.1
OTHER (DEFINE)	
FIRST ORDER	275.8
SECOND ORDER	77.2
THIRD ORDER	86.1
FOURTH ORDER	12.4

S. Transportation System:

Trails: *National Forest (miles):* 27.6 *Other (miles):* 0

Trail Name	Length (mi.)
Jacob Canyon Trail	4.8
Great Western Trail	6.7
Arizona Trail	6.6
Navajo Trail	6.2
North Timp Snowmobile Trail	3.3

Roads: *National Forest (miles):*

All Roads: 418.44
MVUM Roads 174.36 *Other (miles):*

Maintenance Level	Length (mi.)
1	244.07
2	146.82
3	17.40
4	0.12
5	10.02

PART III - WATERSHED CONDITION

A. Burn Severity (acres):

Table 4: Burn Severity Acres by Ownership

Soil Burn Severity	NFS	Other Federal (BLM)	State	Private	Total	% within the Fire Perimeter
Unburned	10,339.6	0.5	1.9	0.1	10,342.1	14.6
Low	24,211.5	1.6	4.1	1.3	24218.5	34.1
Moderate	19,432.8	1.1	0.7	0	19434.6	27.4
High	17,022.6	0.1	1.8	0	17024.5	23.9
Total	71,006.4	3.3	7.6	1.44	71019.7	

B. Water-Repellent Soil (acres): Seventy five percent of moderate soil burn severity and all high soil burn severity (31,600 ac., or 44% of the entire burned area)

C. Soil Erosion Hazard Rating: Slight (25,162.5 ac.), Moderate (29,756 ac.), Severe (12,059 ac.)

D. Erosion Potential: Throughout the entire burned area, including low, moderate, and high soil burn severities, soil erosion potential is estimated to be 13.82 tons per acre per year. Erosion potential in moderate and high soil burn severities only is estimated to be 25.2 tons per acre per year. This value for areas of moderate and high soil burn severity is 4 to 6 times soil loss tolerance threshold.

E. Sediment Potential: The entire burned area has potential to deliver 1,595 yds.^{3} per sq. mi. to stream channels and water bodies.

F. Estimated Vegetative Recovery Period (years): Low soil burn severity recovery is estimated to take 1 to 3 years for herbaceous vegetation to recover, moderate soil burn severity will require10-25 years to recover, and high soil burn severity will take from 100 to 1,000 years or possibly more to fully recover, depending on the location and intensity of precipitation and runoff events during the first few years following the fire.

G. Estimated Hydrologic Response (brief description): Hydrologic response could range from an increase of 3 to 7 times pre-fire runoff.

PART V - SUMMARY OF ANALYSIS

Introduction/Background

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

The Mangum Fire initiated at Mangum Camp on the west side of the North Kaibab Ranger District. It rapidly ascended up Mangum Canyon onto the Kaibab Plateau and made a very long run to the north and northeast across the ponderosa pine vegetation type and into pinyon and juniper vegetation type. There are extensive areas of moderate and high soil burn severity and stand replacement burned conditions. Areas of moderate and high soil burn severity occur on steep slopes above roads and drainages. Risks to human life and safety exist on roads in low lying areas proximal to stream channels due to risk of flooding and debris flows. Additional risks to human life and safety exist in areas where trees are likely to fall and culverts could fail. Several miles of Forest Service roads are at risk of failure in several locations. Culvert failures and loss of road prisms are very likely. The Warm Springs water storage tank and pump house are at risk of being damaged if flooding and debris flows occur in Warm Springs Canyon since this infrastructure is very close to the stream channel.

An emergency condition exists in areas where the potential for noxious/invasive species (Russian thistle, Dalmatian toadflax and cheatgrass) introduction is very high. Kaibab plains cactus (*Pediocactus paradinei*) habitat has been adversely affected by the wildfire and fire suppression activities.

Disturbed areas should be monitored (detection) to identify new infestations and treated (response) immediately to prevent spreading. Noxious and/or invasive plants may result in a decrease or loss of natural recovery because of their ability to out-compete native plants for solar energy, soil nutrients, and water. These species also affect vital soil functions; nutrient cycling, ability to resist erosion, and hydrologic function. These soil functions relate directly to soil condition.

Pre- and post-fire hydrologic responses were estimated for the 15 HUC-6 sub-watersheds within the fire perimeter. Also, two locations were modeled within Warm Springs Canyon where infrastructure critical values were identified. Additional analysis was conducted on Nail Canyon and some tributary canyons, where a major travel and fire response corridor exists. The WILDCAT5 model was used to estimate the hydrologic responses to wildfire disturbance using a weighted Curve Number, watershed dimensions, and modeled storm size and behavior. The modeled storm intensity was for a 10-year return interval of a 1-hour event at the centroid of each watershed area analyzed, according to NOAA ATLAS 14 precipitation models.

Due to the extent of high and moderate soil burn severities in the southwestern portion of the fire, and the extent of water repellant soils, watersheds in this area are predicted to see the greatest increases in surface runoff. Warm Springs Canyon is predicted to increase streamflows 2.5 to 3 times higher than pre-fire flows. Streamflows in Nail Canyon may increase from 3 to 7 times higher than pre-fire flows. Tributaries to Nail Canyon, such as Moquitch Canyon, and Mangum Canyon may increase streamflows 2 to 3 times. Another watershed of note is Willis Canyon near US 89, where post-fire streamflows may be 7 times higher than pre-fire flows.

Due to the estimated hydrological response of Nail Canyon, Warm Springs Canyon, and other tributary canyons along the southwestern travel corridor, mitigation actions are recommended for this area of the fire. Closing roads for monsoonal events, armoring culverts, staging clean-up machinery, or similar strategies, is advised.

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):

2. **Property (P):**Forest Service Road (FSR) 22, FSR 462, FSR 461, FSR 247, and FSR 248 and the Warm Springs Canyon water storage tank and pump house.

   FSR 22 is an arterial road on the west side of the North Kaibab Ranger District. The Big Springs Work Center and Recreational Cabins that are available in the *Rooms with a View* program are located on this road. Mangum Camp is also located on this road. The road provides access to much of the western and southern parts of the District. This road is at very high risk of damage from post fire flooding and debris flows with the magnitude of consequences being major. Road hardening measures are recommended to mitigate post-fire effects. Even with recommended mitigation measures, there is risk of road infrastructure being overwhelmed by flooding and debris flows. Gates are recommended to the north and south of areas that burned at high soil burn severity above this road to mitigate unacceptable risk to human life and safety. A closure of FSR 22 is recommended in the area of the Mangum fire to mitigate unacceptable risk to human life and safety.

   Additionally, visitors should not be allowed to stay overnight in the Big Springs cabins through this year's monsoon due to risks that exist in the area and on FSR 22.

   FSR 462 is located in Warm Springs Canyon. Approximately 39 percent of this watershed burned at moderate and high burn severity. The risk to human life and safety and damage to this road from post fire effects is very high and the magnitude of consequences is major. This road should be closed through the 2020 monsoon. Gates should be installed on FSR 22 and on the eastern site of FSR 462 to prevent travelers from using this road during the monsoon season. Road hardening measures are also recommended to prevent unacceptable damage to this road during the upcoming monsoon.

3. **Natural Resources (NR):**Mexican Spotted Owl (MSO) Recovery Habitat:
   Recovery habitat in the fire perimeter equals 106 acres. The recovery habitat is located on the southern boundary of the fire perimeter. All 106 acres are classified as potential nesting/roosting recovery habitat as a result of the 2014 habitat validation conducted by the North Kaibab Ranger District. Through analysis of BARC data the 106 acres experienced a variety of severity. The BARC data indicates 10% of high severity, 44% moderate severity, and 46% low severity or unchanged.
   b. Northern Goshawk (NOGO) PFA/Nest Areas
   There is a total of 36 Northern Goshawk PFA's located fully or partially within the Mangum fire perimeter. The BARC data indicates that 13 of the PFA's experienced significant amounts of high and moderate severity, while the remaining 23 were impacted to a lesser extent. A total of 67 known nest areas are located within the fire perimeter. After reviewing the BARC data it appears that 14 suffered high severity, 8 were in moderate severity, and 45 were located in low/unchanged areas.
   c. Surface water quality would likely be impacted as a result of delivery of sediment and organic matter to streams and other water bodies.
   d. Groundwater quality could be impacted as dissolved organic matter in the form of soot and ash infiltrate into karst geologic formations.

4. **Cultural and Heritage Resources:**There is some uncertainty regarding the effects of the fire on cultural resources and therefore BAER needs for protection of unacceptable loss of cultural and heritage resources. There are over 529 sites listed within the burned area. Many of these sites were recorded before GPS capabilities were available and before the widespread use of photographs and site mapping, so determining where they are located in relation to slopes, drainages, areas of high soil burn severity, etc. is problematic and cannot be resolved without site visits and surveys.

Table 6. Risk Table for BAER Critical Values that have been identified as Values at Risk with High or Very High ratings for Magnitude of Consequences and where treatments are recommended.

Risk Type	Critical Value	Threat(s)	Probability of Damage	Magnitude of Consequence	Risk	Forest Service Treatment Method
HLS	Human life and safety	Falling trees and limbs (hazard trees), rolling rocks, flash floods and debris flows, burned out stump holes	Very Likely	Major	Very High	Install gates and warning signs at primary access points, including roads and trails. Recommend closure of highest risk areas through first monsoon season.
HLS	Human life and safety	Transport of hazardous materials by wind and water leading to soil and water contamination	Very Likely	Major	Very High	Remove hazardous materials (HAZMAT) in accordance with CERCLA guidelines
NR	Goshawk Habitat	Loss of important habitat features and soil erosion that would affect native plant community recovery, thereby affecting prey species populations	Very Likely in high burn severity and Likely in moderate burn severity	Major	Very high in both moderate and high burn severity	No treatment recommended. An analysis of slopes indicates they are too steep for seeding or mulching based on this and other BAER Critical Values
NR	MSO Recovery Habitat	106 acres of potential nesting and roosting sites have varying burn severities which could lead to degraded habitat conditions	Likely	Moderate	High	No treatment recommended. Monitor habitat conditions and consider pheromone treatments with RMRS if beetle infestations occur.
NR	Soil Productivity, Watershed Function, and Ecological Integrity	Invasive plants	Very Likely	Moderate	Very high	Noxious weed early detection and rapid response (EDRR).
NR	Hydrogeomorphology	Permanent changes to landforms and hydrologic processes	Very Likely	Major	Very high	No land or channel treatments could reasonably mitigate anticipated post-wildfire effects to

Risk Type	Critical Value	Threat(s)	Probability of Damage	Magnitude of Consequence	Risk	Forest Service Treatment Method
						landscape features and stream channel morphology
P	FSR 22, Human life and safety, Property	Loss of road prism through diversion potential (runon and stormflow down road surface, culvert failure)	Very Likely	Major	Very High	Reshape and harden road by installing additional drainage structures and protection measures and increase ditch capacity to prevent surface flow on road, culvert obstruction and failure, and loss of road prism
P	FSR 462, Human life and safety, Property	Loss of road prism through diversion potential (runon and stormflow down road surface, culvert failure)	Very Likely	Major	Very High	Install road drainage, culvert ballast, increase ditch capacity and improve diversions to prevent loss of road surface
P	FSR 461, Human life and safety, Property	Loss of road prism through diversion potential (runon and stormflow down road surface, culvert failure)	Very Likely	Major	Very High	Install road drainage, culvert ballast, increase ditch capacity and improve diversions to prevent loss of road surface
P	FSR 247 (Orderville Rd.), Human life and safety, Property	Loss of road prism through diversion potential (runon and stormflow down road surface, culvert failure)	Very Likely	Major	Very High	Install road drainage, culvert ballast, increase ditch capacity and improve diversions to prevent loss of road surface
P	FSR 248, Human life and safety, Property	Loss of road prism through diversion potential (runon and stormflow down road surface, culvert failure)	Very Likely	Major	Very High	Install road drainage, culvert ballast, increase ditch capacity and improve diversions to prevent loss of road surface

Risk Type	Critical Value	Threat(s)	Probability of Damage	Magnitude of Consequence	Risk	Forest Service Treatment Method
P	Warm Springs water storage tank and pump house	Loss of water storage tank that serves as potable water supply for Jacob Lake Work Center, and fire suppression water	Possible	Major	Very High	Tell owners to remove motor grader, burned tanker truck and other debris (metal pipe, trash, etc.), install Jersey barriers around tank and pump house
P	Trail (Arizona Trail – National Scenic Trail)	Loss of trail tread in low lying portions of the trail below moderate and high burn severities	Very Likely	Moderate	Very High	Reestablish water diversion structures on the trail to prevent loss of trail tread in areas where no hazard tree falling is required.
P	Other Trails (Jacob Canyon Trail and Navajo Trail)	Loss of trail tread in low lying portions of the trail below moderate and high burn severities	Very Likely	Moderate	Very High	Reestablish water diversion structures on the trail to prevent loss of trail tread in areas where no hazard tree falling is required.
CH	Cultural Resources Sites	Over 500 known cultural resources sites may be at risk of soil erosion and loss of artifacts within and below areas of moderate and high burn severity. However, little is known about the spatial location or nature of the artifacts at many of these sites	Likely	Moderate	High	None Recommended. Sites locations should be accurately recorded (GPS), surveyed and monitored. If soil erosion and risk of loss of site integrity is observed, submit an interim 2500-8 BAER report and funding request to implement mitigation measures

B. Emergency Treatment Objectives:

Treatment objectives are proposed to limit, but not eliminate altogether, risks to human life and safety while concurrently protecting critical Forest Service infrastructure from loss.

C. Probability of Completing Treatment Prior to Damaging Storm or Event:
Land: N/A
Channel: N/A
Roads/Trails: 60%
Protection/Safety: 75%

D. Probability of Treatment Success

Table 6: Probability of Treatment Success

	1 year after treatment	*3 years after treatment*	*5 years after treatment*
Land	N/A	N/A	N/A
Channel	N/A	N/A	N/A
Roads/Trails	60	70	85
Protection/Safety	70	80	90

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

F. Cost of Selected Alternative (Including Loss):

G. Skills Represented on Burned-Area Survey Team:

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

Team Leader: Christopher “Kit” MacDonald
Email: christopher.macdonald@usda.gov **Phone(s)** 928-637-5652, 540-589=8973

Forest BAER Coordinator: Michael Hannemann
Email: michael.hannemann@usda.gov **Phone(s):** 928-635-5640, 928-606-3825

Team Members:*Table 7: BAER Team Members by Skill*

Skill	**Team Member Name**
Team Lead(s)	Kit MacDonald
Soils	Micah Kiesow
Hydrology	Edwin “Dan” Bone
Engineering	Nicholas Warnke
GIS	Mike Christiano
Archaeology	Jeremy Pribyl
Weeds	Jesse Duff-Woodruff
Recreation	Allison Ayers
Fire Ecology	Alexander Spannuth
Wildlife	Ryan Dastrup

H. Treatment Narrative:

Land Treatments: None Recommended

Channel Treatments: None.

Roads and Trail Treatments:
Emergency stabilization treatments should be implemented as quickly as possible to protect human life and safety and minimize negative impacts to roads. Road hardening measures such as increasing ditch capacities, grading/crowning of road surfaces to improve drainages, cross ditching/drainage dips to segment and divert runon off of road surfaces, cleaning sediment stored in culverts, installing ballast

(riprap) at culvert ends for scour protection, and installing leadout ditches to protect road infrastructure, a BAER Critical Value, of FSR 22, FSR 461, FSR 462. These roads are in low lying areas or on steep side slopes below large areal extents of moderate and high soil burn severity.

Road Number	Estimated Road Hardening Treatment Costs	Cost
FSR 22	Road fill stabilization	$ 17,400
	Ditch widening (6 miles)	$ 18,000
	Road grading and crowning (6 miles)	$ 4,000
	Cross drains/drainage dips (6 miles, 30 cross drains)	$ 24,000
	Culvert cleaning (40 culverts)	$ 19,250
	Culvert inlet protection (rip rap, 40 culverts)	$ 13,500
	Geotextile fabric (550 sq. yd.)	$ 500
	Rock hauling (650 cu. yd.)	$ 15,750
	Excavation	$ 30,000
	Straw wattles (500)	$ 3,250
	Total	**$145,650**
FSR 462	Ditch widening (7.5 miles)	$ 22,500
	Road grading and crowning (7.5 miles)	$ 5,000
	Cross drains/drainage dips (7.5 miles, 25 cross drains)	$ 20,000
	Culvert cleaning (44 culverts)	$ 32,175
	Culvert inlet protection (rip rap, 30 culverts)	$ 10,125
	Geotextile fabric (198 sq. yd.)	$ 1,089
	Rock hauling (200 cu. yd.)	$ 11,000
	Excavation	$ 52,061
	Total	**$153,950**
FSR 461	Ditch widening (2.5 miles)	$ 8,500
	Road grading and crowning (2.5 miles)	$ 4,000
	Cross drains/drainage dips (1.5 miles, 15 cross drains)	$ 9,750
	Culvert cleaning (12 culverts)	$ 11,000
	Culvert inlet protection (rip rap, 12 culverts)	$ 2,250
	Geotextile fabric (27 sq. yd.)	$ 1,250
	Rock hauling (30 cu. yd.)	$ 1,650
	Excavation	$ 20,000
	Total	**$ 58,400**

One, area of rock armoring is recommended along the road embankment of FSR 22 where a stream channel bends toward the road prism and could erode the roadside, causing failure of the road surface and cause the road to become impassible.

Storm inspection and response would include four 2-person crews that would patrol the burned area after monsoon precipitation events to review storm effects and to ensure that treatments remain effective at mitigating post-wildfire risks. Per definition in the BAER Catalog, storm inspection would take place before, during, and immediately after storms to ensure culverts, ditches and other drainage features are clear.

Protection/Safety Treatments:

Structures that burned at Mangum Camp likely contained hazardous materials including lead-based paint, asphalt shingles, and stored petroleum hydrocarbons. It is also likely that asbestos containing materials (floor and ceiling tiles and stove components, etc.) occurred in these structures. These hazardous materials should be removed to prevent materials from being mobilized by wind or precipitation. Also, visitors and volunteers camp in the vicinity of where these structures burned. Cleanup of hazardous materials will prevent visitors from contacting potentially hazardous materials that could affect human health.

Gates should be installed at strategic locations to prevent visitors from accessing areas where risks to human life and safety are unacceptable. Hazard warning signs and road closure signs are recommended at all gated access points to the burned area (14 gates), including major roads and trailheads to control public access and to inform the public of post-wildfire hazards that exist within the burned area. **Visitors should not be allowed to stay overnight in the Big Springs cabins through this year's monsoon.**

Road and Trail Signs

Item	Cost
Trail signs and posts (13 locations)	$ 1,170
Road signs and posts (14 locations)	$ 9,219
Personnel Cost (Two multi-resource crews of 4 personnel at $1200 per day each for 10 days)	$ 12,000
Vehicle mileage	$ 1,080
Total estimated cost	**$ 22,389**

Estimated Storm Inspection and Response

Item	Cost
Personnel time:	
$1,400.00/day for 5 days	$ 7,000.00
Vehicle mileage	$ 400.00
Total estimated cost	**$ 7,400.00**

I. Monitoring Narrative:

PART VI – EMERGENCY STABILIZATION TREATMENTS AND SOURCE OF FUNDS

			NFS Lands				Other Lands		
		Unit	# of		Other	# of	Fed	# of	Non Fed
Line Items	Units	Cost	Units	BAER $	$	units	$	Units	$
A. Land Treatments									
Insert new items above this line!				$0	$0		$0		$0
Subtotal Land Treatments				$0	$0		$0		$0
B. Channel Treatments									
Insert new items above this line!				$0	$0		$0		$0
Subtotal Channel Treatments				$0	$0		$0		$0
C. Road and Trails									
Road Hardening Measures	mi	23,000	16	$368,000	$0		$0		$0
Trail Hardening	mi			$0	$0		$0		$0
Insert new items above this line!					$0		$0		$0
Subtotal Road and Trails				$368,000	$0		$0		$0
D. Protection/Safety									
Mangum Camp HAZMAT	ea	26,000	1	$26,000	$0		$0		$0
Gates - 15 ft.	ea	1,800	12	$21,600	$0		$0		$0
Gates - 30 ft.	ea	2,800	2	$5,600					
Road Hazard Signs	ea	140	14	$1,960					
Road Closed Signs	ea	130	14	$1,820					
Striped Signs	ea	130	28	$3,640					
Road Sign Posts	ea	32	56	$1,792					
Trail Hazard Signs	ea	22	13	$286					
Trail Closed Signs	ea	32	13	$416					
Trail Sign Posts	ea	18	26	$468					
Resource Crew	days	1,200	10	$12,000					
Vehicle mileage	mi	1	2593	$1,400					
Warm Spr. Tank Protection	ea	10,000	1	$10,000					
Storm Inspection and Response		1,400	7	$9,800					
Implementation Team	days	1,750	20	$35,000					
Insert new items above this line!					$0		$0		$0
Subtotal Protection/Safety				$131,782	$0		$0		$0
E. BAER Evaluation									
Initial Assessment	Report			---	$0		$0		$0
				$0	$0		$0		$0
Insert new items above this line!				---	$0		$0		$0
Subtotal Evaluation				$0	$0		$0		$0
F. Monitoring									
				$0	$0		$0		$0
				$0	$0		$0		$0
Insert new items above this line!				$0	$0		$0		$0
Subtotal Monitoring				$0	$0		$0		$0
G. Totals				$499,782	$0		**$0**		**$0**

PART VII - APPROVALS

1._____

Forest Supervisor Date