

Date of Report: 07/08/2022**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: Left Fork****B. Fire Number: UT-DIF-000133****C. State: UT****D. County: Garfield****E. Region:04****F. Forest: Dixie****G. District:03****H. Fire Incident Job Code: P4PL9322****I. Date Fire Started: May 7 2022****J. Date Fire Contained: July 1, 2022****K. Suppression Cost: 13 million****L. Fire Suppression Damages Repaired with Suppression Funds (estimates):**

1. Fireline repaired (miles): 10.4 miles Dozer line, 10.3 Hand line
2. Other (identify): ICP and other congregation disturbance areas – 3 acres

M. Watershed Numbers:*Table 1: Acres Burned by Watershed*

HUC #	Watershed Name	Total Acres	Acres Burned	% of Watershed Burned
160300020302	Tropic Reservoir	23231	860.08	3.7%
160300020301	East Fork Sevier River Headwaters	30582	3397.44	11.1%

N. Total Acres Burned:

Table 2: Total Acres Burned by Ownership

OWNERSHIP	ACRES
NFS	4257.5
OTHER FEDERAL (LIST AGENCY AND ACRES)	
STATE	
PRIVATE	
TOTAL	

O/P. Dominant Soils and Vegetation Types:

Soil Type	Dominant Vegetation	Unburned	Low	Moderate	High	Total
P1	Black Sage	2.98	2.95			5.93
P9	Ponderosa Pine	91.32	486.38	265.63	5.69	849
P62	Mixed Conifer	4.19	73.82	116.37	9.51	203.9
P63	Mixed Conifer	17.19	132.43	189.81	53.04	392.48
P77	Mixed Conifer	34.66	122.92	21.61	0.22	179.41
P78	Black Sage	3.63	2.82	0	0	6.45
P106	Mixed Conifer	3.47	13.74	21.43	0.33	38.97
P107	Mixed Conifer	43.75	417.82	453.12	30.03	944.72
P122	Rock Outcrop	45.62	48.59	1.11	0	96.33
P129	Big Sage/ Aspen	1.22	1.01	0	0	2.27
P130	Mixed Conifer	0.88	53.48	91.53	7.43	153.32
P133	Mixed Conifer	6.47	96.76	158.4	24.95	286.57
P134	Mixed Conifer	14.79	69.76	42.72	19.09	146.53
P135	Aspen	43.17	88.94	4.89	0	137
P140	Ponderosa Pine	23.01	373.41	342.25	9.4	748.07
P158	Mixed Conifer	0.62	22.7	26.98	0.65	50.95
P159	Mixed Conifer	0.8	8.42	6.39	0	15.61
	Total Acres	337.82	2017.12	1742.24	160.35	4257.53

O. Geologic Types: Tcp – Pink member of Claron formation**P. Miles of Stream Channels by Order or Class:**

Table 3: Miles of Stream Channels by Order or Class

STREAM TYPE	MILES OF STREAM
PERENNIAL	
INTERMITTENT	
EPHEMERAL	6.78
OTHER (DEFINE)	

Q. Transportation System:

Trails: National Forest (miles):

Other (miles):

Roads: National Forest (miles): 21.17

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	337.8				337.8	7.9
Low	2017.1				2017.1	47.4
Moderate	1742.2				1742.2	40.9
High	160.3				160.3	3.8
Total	4257.5				4257.5	100

B. Water-Repellent Soil (acres): 989**C. Soil Erosion Hazard Rating: ~170 Acres of the fire are on Claron derived soils which have a high to severe erosion hazard****D. Erosion Potential:****E. Sediment Potential:****F. Estimated Vegetative Recovery Period (years): 5 – 10 years**

G. Estimated Hydrologic Response (brief description): Late summer storms and snowmelt will be exacerbated noticeably. Hydrologic response will not moderate until at least 3 years when aspen can recover with sufficient canopy, and in areas where no aspen is present it may take more than 5 years for enough vegetation to take hold and moderate the hydrologic response.



View in Right Fork of Upper Kanab Creek looking into some the largest moderate and high burn severity areas

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. Very High risk to **forest visitors and Forest Service employees** on roads throughout the burn scar due to the increased threat of flooding and debris flow and falling trees and rocks.

Risk Assessment: Elevated threat to human health and safety from flooding and debris flow, and falling trees and rocks on forest roads within the fire perimeter.

Probability of Damage or Loss: Very Likely – Numerous snags along the trail will have potential risk to public safety, and summer monsoonal storms can occur quickly with very responsive flooding.

Magnitude of Consequence: Major– Loss of life or injury to humans.

Risk Level: Very High

2. Property (P): Very High risk to road infrastructure from flooding

Risk Assessment: Increase in flooding with debris.

Probability of Damage or Loss: Very Likely – Storm runoff in the burnt area is expected to increase and to contain more sediment and debris. The findings of the on the ground survey indicate that the infrastructure may be adversely impacted.

Magnitude of Consequence: Moderate– moderate property damage.

Risk Level: Very High

3. Natural Resources (NR): Low risk to **soil productivity and hydrologic function** due to the threat of increased soil erosion within those areas that burned at moderate to high severity. Because effective groundcover was moderately decreased as a whole within the fire burn perimeter (many of the soils have a very large proportion of rock greater than 2 inches in diameter) and measured and predicted hydrophobicity was not spatially extensive (nearly half of the soils were unburned or had low burn severity). Hydrologic function of those drainages that sustained moderate to high burn severity is expected to be impacted by reduced infiltration, accelerated runoff and debris flows.

Risk Assessment: Threats to soil productivity and hydrologic functioning of watersheds

Probability of Damage or Loss: Likely,

Magnitude of Consequence: Minor.

Risk Level: Low

(No Treatments are recommended due to expected natural recovery over time and no critical values at high risk)

- b. High risk to **native or naturalized plant community** due to the threat of noxious weed invasion where ground cover has been mostly consumed or reduced to very low levels in throughout the moderate and high burn severity areas as well as suppression activity disturbance from dozer line, base camp, etc.

Risk Assessment: Threats to native or naturalized plant communities now at risk to noxious weed invasion

Probability of Damage or Loss: Likely

Magnitude of Consequence: Moderate.

Risk Level: High

4. Cultural and Heritage Resources: No known qualifying cultural and heritage resources were present

B. Emergency Treatment Objectives: The goal of the burned area emergency response treatments is to mitigate risk to Human Life and Safety and to native and naturalized plant communities.

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

Land: 70%

Channel: NA

Roads/Trails: NA

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	90%	90%	95%
Channel	NA		
Roads/Trails	NA		
Protection/Safety	90%	90%	90%

E. Cost of No-Action (Including Loss): Human life can't have a monetary value placed on it. Roads – \$20,000/mile X 1 miles = \$30,000. Native or naturalized vegetation community – 1929 acres X \$50/acre to treat after infestation = \$96,450. Total monetary value of \$126,450.

F. Cost of Selected Alternative (Including Loss):

Value At Risk	Estimated Cost
Loss of Forest Roads <ul style="list-style-type: none"> No treatment for protection of roads is proposed as significant improvements of the existing road would be needed in order to provide some protection. 	\$30,000
Human Life and Safety <ul style="list-style-type: none"> This treatment is estimated to be 90% effective in protecting human life and safety (although gated at best locations it is possible that illegal access by some members of the public could find ways around the gates on ATVs) . 	\$19,300
Native or naturalized vegetation community <ul style="list-style-type: none"> This treatment is estimated to be 90% effective and so with 10% failure an additional cost of \$9,645 	\$14,005
Total	\$ 63,305

G. Skills Represented on Burned-Area Survey Team:

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

Team Leader:

Email: brooke.shakespeare@usda.gov **Phone(s)** 435-690-9277

Forest BAER Coordinator:

Email: brooke.shakespeare@usda.gov **Phone(s):** 435-690-9277

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

Skill	Team Member Name
Team Lead(s)	Brooke Shakespeare
Soils	Vaughn Thacker
Hydrology	Vaughn Thacker
Engineering	Jake Dodds/Robert Miller
GIS	Laurie Parry
Archaeology	
Weeds	Mark Madsen/Taylor Britt
Recreation	
Other	

H. Treatment Narrative:

Land Treatments: The vegetation in the burned area can be characterized as mixed Ponderosa pine, Douglas-fir, limber pine, aspen, Rocky Mountain juniper with a primary shrub understory of greenleaf manzanita, Fendler's deerbrush, snowberry, gooseberry, antelope bitterbrush, and Oregon grape. Primary understory grasses and forbs include muttongrass, smooth brome, Ross' sedge, Western Sedge, thickspike wheatgrass, squirreltail, Kentucky bluegrass, American vetch, peavine, western yarrow, and spreading daisy. These vegetation types occur at approximately 8,000-9,000 feet elevation within the burned area. The area within the burn perimeter was a native or naturalized plant community. A major concern was for noxious weed introduction from the East Fork Road into the burned area. Populations of hardheads (aka

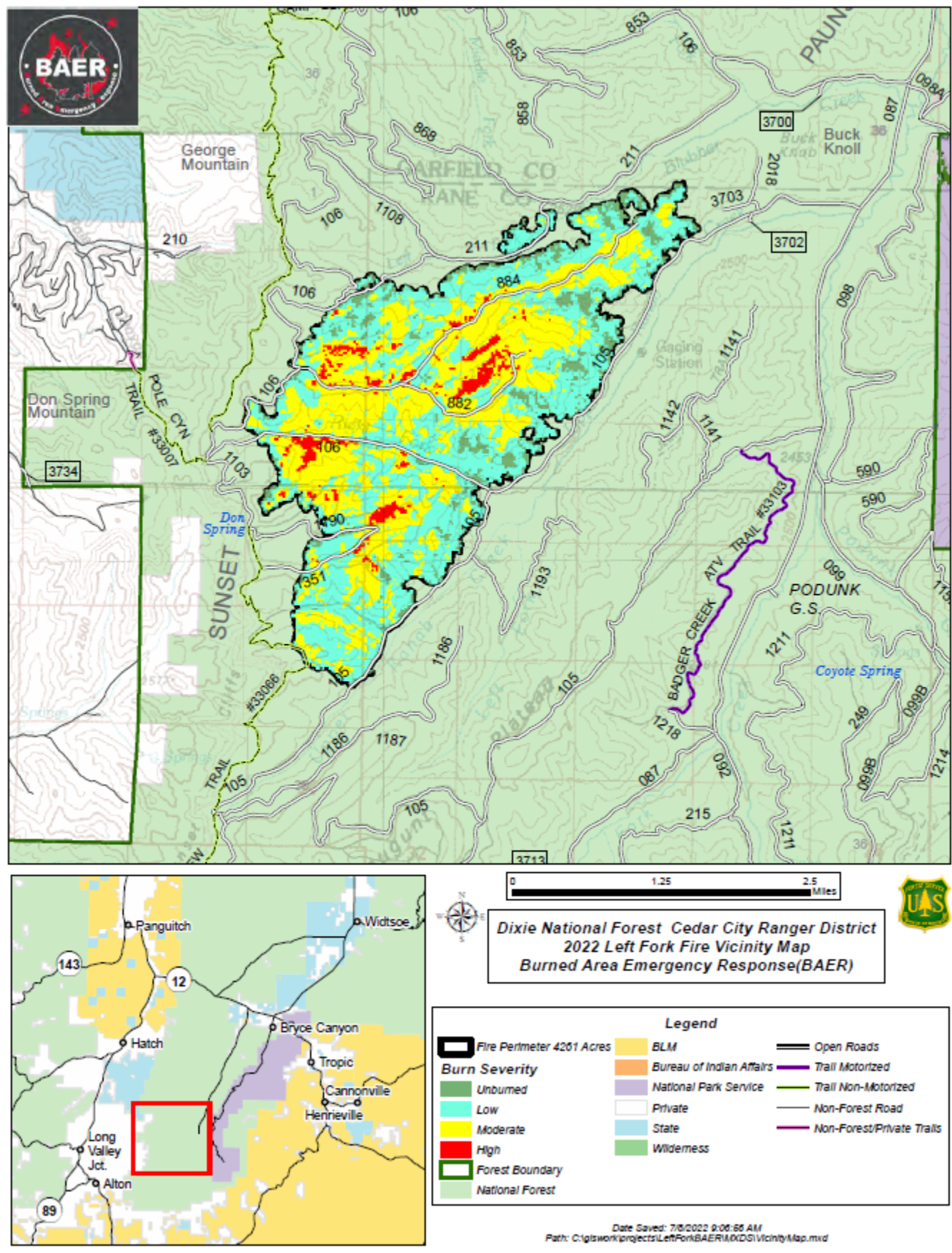
Russian knapweed), nodding plumeless thistle (aka musk thistle), and whitetop were present on the East Fork Road just northeast of the Left Fork burned area prior to the fire. All of the fire suppression traffic into the Left Fork fire burn perimeter came to the Left Fork Fire on this road. Weed washing of suppression vehicles occurred at the gravel pit adjacent to the Bryce Canyon Airport on Highway 12. Suppression vehicles traveling from the weed washing station to the Left Fork fire burn perimeter may have picked up these localized populations of noxious weeds on their way to the burn perimeter on the East Fork Road. This concern results from the likely probability that suppression and active fire management activities may have moved these localized noxious weeds from the East Fork Road into the burn perimeter. It is also expected that other native early seral colonizing species (i.e. Wheeler's Thistle, Arizona thistle, stickseed, Fremont's goosefoot, prickly lettuce, tansy mustard, storksbill, Russian thistle, knotweed, pig weed, poverty weed, coyote tobacco, and others) will colonize these burned areas over the next few years. However, these early colonizing invasive species are not expected to persist for long in this area. These colonizing invasive plants often give way to later seral native species once they begin to return. They usually persist, but their relative abundance is low once native perennial vegetation returns. Conversely, noxious weeds persist in the environment for long periods of time and have the potential to permanently alter the burned native plant community function and resiliency. If noxious weed mitigation (early detection rapid response – EDRR) is aggressively pursued, applied, and successful within the first year following Left Fork fire containment, it is expected that native plants will eventually re-colonize these areas without interference from noxious weed colonization and proliferation.

1. EDRR - Early Detection Rapid Response of noxious weeds - locate introduced noxious weeds on **high and moderate severity burn areas (1,902 acres)** and on intense suppression activity locations such as **sling sites, drop points, helispots, and dozer line (27 acres)** within the Left Fork Fire perimeter.
2. Administratively close the roads that penetrate the burn perimeter for at least one full growing season following containment of the fire. This will allow for initial native plant recovery without further introduction of invasives or noxious weeds into the Left Fork Fire burn perimeter.

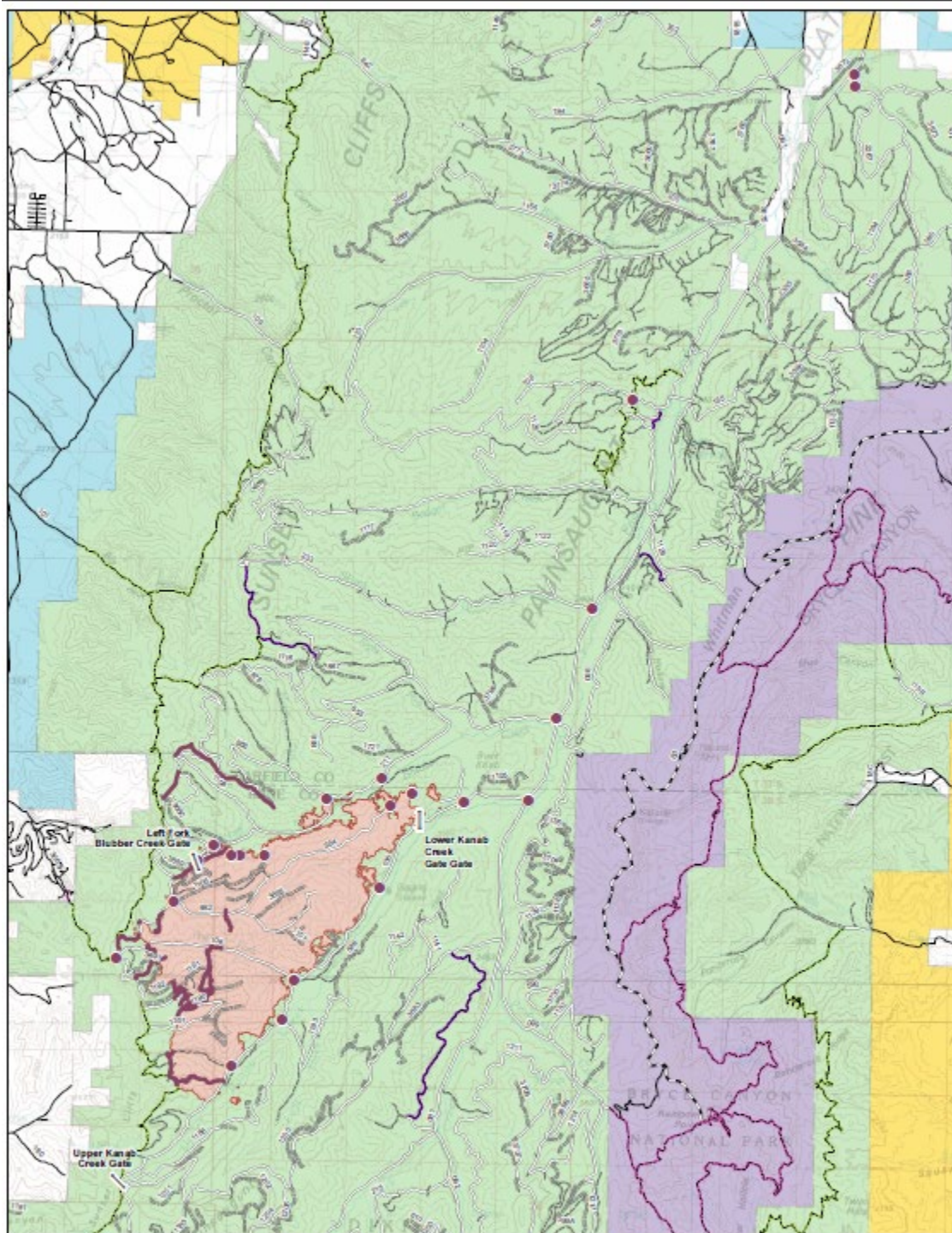
Applying and enforcing these treatments aggressively and expeditiously (within the first year following containment) will greatly enhance the ability of the native plant community within the Left Fork fire burn perimeter to be on track to recover fully from the incident.

Protection/Safety Treatments: A closure for motorized vehicles will occur for two years or until further rescinded to keep vehicles out of the burn area. The closure with gates is necessary as a closure order alone will not prevent the public from accessing the area. The closure would limit the safety issues associated with vehicles traveling across roads not designed for the significantly increased post fire storm runoff. Safety issues include washed out roads, damaged roads and fallen trees. The use of road closure gates will also reduce the spread invasive plants into the burn areas from the primary source of seed which is along the existing roads within the fire perimeter. The proposed vehicle closure would include all roads within the burn area and those affected by the anticipated increased post storm runoff. Site will be gated in 3 locations by the District (see maps below for locations). The gates located farther from the main East Fork road will be Powder River type light gates. The Lower Kanab Creek gate is closer to the main East Fork road and will need to be a heavy duty gate to prevent damage from people seeking to enter the area.

I. Monitoring Narrative: Monitoring of the closure effectiveness of the gates should begin soon after installation and occur before, during, and after seasons known to receive heavy use of roads in the East Fork area.



Soil Burn Severity and vicinity of fire



0 1.25 2.5 5 Miles



Legend

Suppression Disturbance EORR Locations 15 Acres	Highway	Bureau of Land Management
Proposed Gate Locations	Open Roads	National Forest
Suppression Disturbance EORR Doser Line (10 Foot Buffer) - 12.71 Acres	Admin Roads	National Park Service
Left Fork Fire Perimeter	Trail Motorized	Private
	Trail Non-Motorized	State
	Closed Roads/Trails	
	Non-Forest Road	
	Non-Forest Private Trails	

**Dixie National Forest
Powell Ranger District
Left Fork Fire BAER
Early Detection Rapid Response/
Treatment Map**

Proposed treatments

PART VI – EMERGENCY STABILIZATION TREATMENTS AND SOURCE OF FUNDS

Line Items	Units	Unit Cost	NFS Lands		Other	Other Lands				All
			# of Units	BAER \$		# of units	Fed \$	# of Units	Non Fed \$	Total \$
A. Land Treatments										
EDRR BAER	1	2	1902	\$4,299	\$0		\$0		\$0	\$4,299
EDRR Suppression	1	2	27	\$61	\$0		\$0		\$0	\$61
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Land Treatments</i>				\$4,360	\$0		\$0		\$0	\$4,360
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
<i>Subtotal Channel Treatments</i>				\$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
<i>Subtotal Road and Trails</i>				\$0	\$0		\$0		\$0	\$0
D. Protection/Safety										
Road Closure Gates	1	6,433	3	\$19,300	\$0		\$0		\$0	\$19,300
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Protection/Safety</i>				\$19,300	\$0		\$0		\$0	\$19,300
E. BAER Evaluation										
Initial Assessment	Report	\$4,500	1	\$4,500	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				---	\$0		\$0		\$0	\$0
<i>Subtotal Evaluation</i>				\$4,500	\$0		\$0		\$0	\$0
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
<i>Subtotal Monitoring</i>				\$0	\$0		\$0		\$0	\$0
G. Totals				\$23,660	\$0		\$0		\$0	\$23,660
Previously approved										
Total for this request				\$23,660						

PART VII - APPROVALS

1. _____
 Forest Supervisor Date