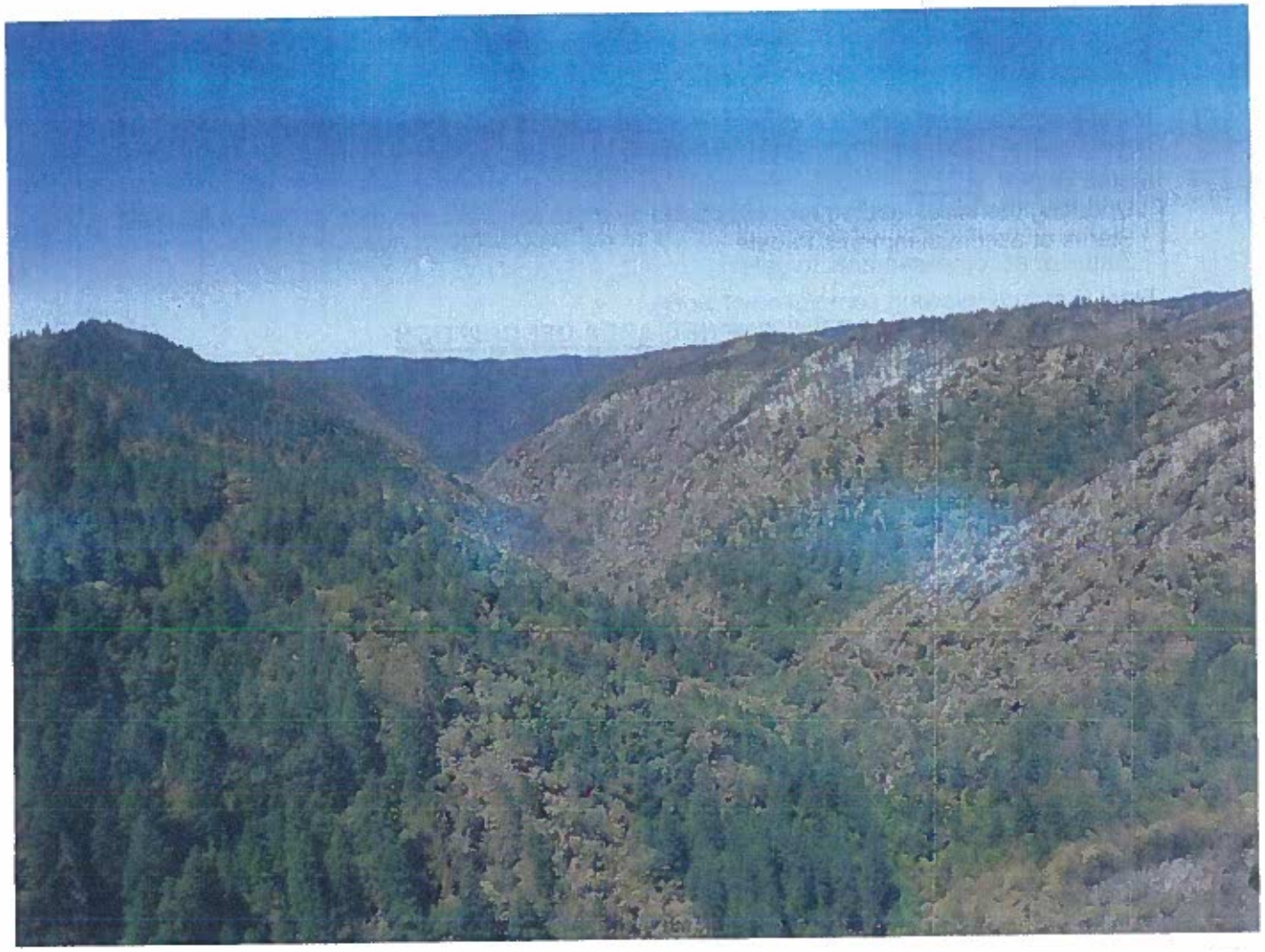
USDA-FOREST SERVICE

FS-2500-8 (7/16)
Initial Request
Date of Report: July 18, 2016

Trailhead Fire BURNED-AREA REPORT
(Reference FSH 2509.13)



PART I - TYPE OF REQUEST

A. Type of Report

[X] 1. Funding request for estimated emergency stabilization funds
[ ] 2. Accomplishment Report
[ ] 3. No Treatment Recommendation

B. Type of Action

[X] 1. Initial Request (Best estimate of funds needed to complete eligible stabilization measures)

[ ] 2. Interim Report #____
[ ] Updating the initial funding request based on more accurate site data or design analysis
[ ] Status of accomplishments to date

[ ] 3. Final Report (Following completion of work)

PART II - BURNED-AREA DESCRIPTION

A. Fire Name: Trailhead Fire

B. Fire Number: CA-NEU-015200

C. State: CA

D. County: El Dorado and Placer

E. Region: 05

F. Forest: Eldorado National Forest

G. District: Georgetown

H. Fire Incident Job Code: PNKCQ6 (1512)

I. Date Fire Started: June 28, 2016

J. Date Fire Contained: July 15, 2016 (100%)

K. Suppression Cost: $25 million

L. Fire Suppression Damages Repaired with Suppression Funds
1. Fireline waterbarred (miles): 5.4 miles of hand line, 29.7 miles of dozer line
2. Fireline seeded (miles): None
3. Other (identify): None

M. Watershed Number: HUC 12: 180201280501 (Otter Creek), 180201280503 (Volcano Canyon-Middle Fork American River)

N. Total Acres Burned: 5645
NFS Acres (3533) BLM (91) B of Rec (5) Private (2016)

O. Vegetation Types: montane hardwood, sierran mixed conifer, ponderosa pine, mixed chaparral, riparian.

P. Dominant Soils: Metamorphic Rockland (2528 acres, 46%), Mariposa Series (1183 acres, 21%), Sites (533 acres, 10%), and Serpentine Rockland (353 acres, 6%)

Q. Geologic Types: The geology is primarily the Calaveras Complex comriised of Triassic metasedimentary rocks on the west side of the fire with rocks of the Paleozoic metasedimentary Shoo Fly complex on the east. These formations are seperated by gabbroic rocks of the Melones fault system. The area is highly dissected by the Middle Fork of the American River and Otter Creek.

R. Miles of Stream Channels by Order or Class: Perennial = 6.8 miles, Intermittent = 13.1 miles, Ephemeral=67.6 miles

S. Transportation System

Trails: 5.1 miles Roads: 9.5 miles

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 1461 (26%) (unburned), 2873 (51%) (low), 1031 (18%) (moderate), 280 (5%) (high)

B. Water-Repellent Soil (acres): 3378 (**80%** of fire has water repellency)

C. Soil Erosion Hazard Rating (acres): Because of the general low impact burn of this fire, Erosion Hazard Ratings were not assessed.

xx (low) xx (moderate) xx (high) xx (very high)

D. Erosion Potential after fire: 6.69 tons/acre Erosion potential before fire: 0.08 tons/acre. After three years of vegetation recovery, the erosion potential is expected to decrease to 1.65 tons/acre.

E. Sediment Potential: reported as tons per acre in D.

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years):	3-5
B. Design Chance of Success, (percent):	75
C. Equivalent Design Recurrence Interval, (years):	5
D. Design Storm Duration, (hours):	2
E. Design Storm Magnitude, (inches):	1.23
F. Design Flow, (cubic feet / second/ square mile):	88.8
G. Estimated Reduction in Infiltration, (percent):	15
H. Adjusted Design Flow, (cfs per square mile):	136.9

PART V - SUMMARY OF ANALYSIS

Background

The Trailhead Fire began on Tuesday, June 28, 2016, along the Middle Fork of the American River near Todd Valley, in Auburn State Recreation Area (SRA) on lands administered by the Bureau of Land Management (BLM). Driven by steep terrain and low relative humidity the fire quickly spread onto lands administered by the 1) Georgetown Ranger District, Eldorado National Forest, and 2) Sierra Pacific Industries

Approximately 23% of the burn area burned at a high and moderate soil burn severity (see attached soil burn severity map). The rest of the fire was either low or very low soil burn severity. It is very important to understand the difference between *fire intensity* and *burn severity* as discussed by fire behavior, fuels, or vegetation specialists, and *soil burn severity* as defined for watershed condition evaluation in BAER analyses. Fire intensity or burn severity as defined by fire, fuels, or vegetation specialists may consider such parameters as flame height, rate of spread, fuel loading, thermal potential, canopy consumption, tree mortality, etc. For BAER analysis, we are not mapping simply vegetation mortality or above-ground effects of the fire, but soil burn severity. Soil burn severity considers additional surface and below-ground factors that relate to soil hydrologic function, runoff and erosion potential, and vegetative recovery.

Generally, the fire burned with low and moderate burn severity. This low and moderate severity resulted in a ground fire that had beneficial effects by cycling nutrients and allowing a site condition that will allow for improved ground vegetation severity. There were pockets where the soil burned with high soil burn severity but were mostly limited to the north slopes of Otter Creek.

Because much of the fire supported a healthy bear clover community, vegetation response and erosion mitigation will begin prior to winter.

Trailhead Fire Soil Burn Severity Map: (See attached map. Soil Burn Severity is included with the Proposed Treatment Map)

A. Describe Critical Values/Resources and Threats:

The risk matrix below, Exhibit 2 of Interim Directive No.: **2520-2010-1**, was used to evaluate the Risk Level for each value identified during the Assessment:

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**

Values at Risk and Risk Matrix Table[1]

Risk Type	Value at Risk	Potential Threats	Owner ship	Probability of Damage	Magnitude of Conseq	Risk	Forest Service Treatment Method
Life	Delwisch Adit 6 abandoned mine	entrapment, debris flow	USFS	possible	major	high	Re-foam to previous condition
Life	Cement Hill mine shafts	entrapment, debris flow	USFS	possible	major	high	warning signs, fencing
Life	Recreation use along the Middle Fork American River	rock fall, debris flow	USFS	unlikely	major	intermediate	warning signs
Life/ Property	Recreation use and bathroom below Western States Trail	debris flow	BLM	unlikely	major	intermediate	Contact BLM
Life/ Property	Jakey's Hill spur road 13N56C	rock fall	USFS	unlikely	moderate	low	none
Life/ Property	Kelliher Trail 11E08	debris flow, hazard trees	USFS	unlikely	major	intermediate	warning signs
Life/ Property	Mining claims	debris flow, hazard trees	USFS	unlikely	major	intermediate	warning signs
Life/ Property/ Resources	Roanoak Trail 10E03; (low risk to cultural resources and water quality)	debris flow, hazard trees	USFS	unlikely	major	intermediate	warning signs
Property	South Volcanville Road 13N56, which includes firefighter access (low risk to water quality)	Culvert plugging	USFS	possible	moderate	intermediate	clean out culvert inlet, install critical dips
Property	Transmission Lines and Towers	debris flow, hazard trees	PGE	unlikely	moderate	low	none
Property	Road 13N58N and culvert (low risk to water quality)	culvert plugging, flooding	USFS	possible	minor	low	none

Risk Type	Value at Risk	Potential Threats	Owner ship	Probability of Damage	Magnitude of Conseq	Risk	Forest Service Treatment Method
Property/ Resources	Quartz Canyon mining complex	debris flow, looting of cultural resources, creation of unmanaged routes	USFS	likely	moderate	high	install barrier rocks
Property/ Resources	Cock Robin Point mines	looting of cultural resources	USFS	likely	moderate	high	camouflage artifacts with slash and deadfall; warning sign that artifact looting is illegal
Natural Resources	Native plant communities	invasive plants	USFS	likely	moderate	high	weed surveys, rapid response treatments
Natural Resources	Soil productivity/ ecosystem recovery	erosion, unauthorized OHV use	USFS	possible	minor	low	none
Natural Resources	Otter Creek water quality	sedimentation	USFS	likely	minor	low	none
Natural Resources	ESA listed California red-legged frog (*Rana draytonii*)	habitat loss, sedimentation	USFS	unlikely	moderate	low	none
Natural Resources	ESA listed Layne's ragwort (*Packera layneae*)	habitat loss	USFS	unlikely	moderate	low	none

Note: Only values at risk of intermediate and higher, and those values where treatments are proposed are addressed below.

Threats to Life and Property

The combined factors of the burned conditions upslope of claimed and abandoned mines, and dispersed recreation, indicate a high risk to life and property creating an emergency situation. Campers, hikers, mountain bikers, equestrians, and Off Highway Vehicle (OHV) use are also at risk from rock fall, hazard trees, debris flows and washouts while traveling along the Middle Fork American River, Western States Trail, Kelliher Trail, and Roanoak Trail.

1) Delwisch Adit 6 abandoned mine, Cement Hill mine shafts

Abandoned mines and abandoned mine closures have occured within the burned area. There are 25 mine closures (foam plugs, bat-gates, bat-culverts) within the burned area and 126 inventoried mine features (adits, shafts, excavations, waste piles). Open adits and shafts near roads, trails, and other recreation areas pose a health and safety risk to the public. Adits in the Georgetown area are subjects of great interest to the public and are routinely investigated.

The Delwisch Adit 6 was a foam sealed 10-15 foot Adit. The foam closure included a steel culvert installed for bat habiat. During the fire, the foam completely burned allowing the hole to open back up and the culvert to sit

vertically at the bottom of the pit. The adit is surrounded by extremely unstable ground. Any person falling in the pit risks serious bodily injury should they fall on the culvert.

The Cement Hill mine shafts are very deep vertical drops with great risk of bodily injury and not chance for escape should someone fall in. These shafts were well concealed by vegetation. The fire burned off the vegetation and are easily accessible to the public.

Probability of damage or loss: Possible. Since the vegetation is burned off and this area is open to unobstructed recreation, chances have substantially increased that both pedestrians and OHV riders could inadvertently come into contact with the shafts.

Magnitude of consequences: Major. There could be substantial damage to property and loss of life or injury as a result of fire damage from the previous closure.

Risk Level: High. The BAER team recommends re-foaming Delwisch Adit 6 to return it to pre-fire condition, installing hazard warning signs and fencing around the Cement Hill mine shafts, and installing hazard warning signs at the entries to the burned area.

2) South Volcanoville Road 13N56

There is potential for three culverts along Forest Service Road 13N56 (South Volcanoville Rd) to become plugged from increased runoff in the burned area. This road provides the only access to Cock Robin Point, including firefighter access.

Magnitude of consequences: Possible. There could be damage to property and loss of life or injury as a result of the post fire watershed response in these areas.

Risk Level: Moderate. The BAER team recommends cleaning out the inlet of the culvert and installing critical dips to protect the road from damage resulting from flow down the road tread.

3) Recreation use along the Middle Fork American River, below Western States Trail (including bathroom), on Kelliher Trail 11E08, and Roanoak Trail 10E03.

Dispersed sites near Ford's Bar on the east side of the Middle Fork American River have a high risk of debris flow from drainages with steep slopes that were burned at moderate to high severity. There may also be some debris flow potential near Ford's Bar on the west side.

A fire-affected portion of the Western States Trail is coincident with a road that switchbacks steeply down to Ford's Bar. There is an elevated risk posed by the fire to the trail and to life and safety of trail users. The trail is managed by the Auburn State Recreation Area (SRA) and is on Bureau of Land Management (BLM) land.

The Roanoak (10E03) and Kelliher (11E08) trails are completely within the fire perimeter and total 5.13 miles in length. The majority of these trails were subject to low burn severity and may have minor, localized damage. An intermediate risk to life and safety exists from hazard trees.

Probability of Damage or Loss: Unlikely. It is unlikely that a person will be struck by rock fall, or trapped in the potential post fire debris flow.

Magnitude of Consequence: Major. There could be substantial damage to property and loss of life or injury as a result of the post fire watershed response in these areas.

Risk Level: Intermediate. The BAER team recommends that Auburn SRA and BLM be notified of this risk. It is also recommended that hazard warning signs be installed on NFS land where the risk exists, and that the

Forest Service coordinate with the Auburn SRA and the whitewater rafting community to provide information to the public regarding this risk.

Threats to Cultural Resources

1) Quartz Canyon mining complex, and Cock Robin Point mines
These sites consist of archeological mining structures and artifacts, as well as historic roads, associated with the Gold Rush. Conditions have changed within the burned area, with the burning of the dense vegetation/brush, making these sites more susceptible to looting or damage from dispersed recreation.

Probability of damage or loss: Likely. Given the accessibility of these sites post fire.

Magnitude of consequences: Moderate. There could be substantial damage or loss to cultural resources as a result of the post fire condition in these areas.

Risk Level: High. The BAER team recommends installing rock barrier to prevent vehicle access to Quartz Canyon mine, and to camouflage artifacts and structures with slash and deadfall at Cock Robin Point. Additionally, it is recommended that warning signs be installed near these specific areas educating the public about the legality of looting archaeological sites. Signs would be placed in locations that do not identify these areas as archaeology sites.

Threats to Native Plant Communities

1) Increase in Noxious Weed Populations
Values at risk within the Trailhead Fire is the establishment of native plant communities on NFS lands as a result of invasive plant occurrences. Fire suppression tactics implemented to manage fire related threats to natural resources, forest service facilities, communities, and transmission lines resulted in the construction of approximately 29 miles of dozer line, 5 miles of hand line, and 14 miles of road as completed line (on all land ownerships). The site used for Incident Command Posts (ICP) was generally free of noxious weeds. Equipment staging was in a field across the road from the school which had previously been overgrown with scotchbroom but was cleared by blading the area for the incident. No equipment or vehicles were washed as they arrived at the incident or prior to working on the fire line. Weed washing was established for demobilizing resources only. Suppression equipment and crews are known to have traveled through areas of invasive plant infestations during fire suppression efforts. These disturbed areas serve as corridors for weed dispersal and are more susceptible to invasive plant establishment. Native plant communities and rare plant habitats would be degraded by invasive species introduction and spread in uninfested areas within the fire area. While the southern portion of the fire area is already infested with scotchbroom (primarily around Bottle Hill Road), most of the fire area ad no known occurrences of invasive plants. In addition, the potential introduction of propagules of other species during fire suppression has the potential to establish new weed infestations. These new infestations would affect the structure and habitat function of native plant communities and ecosystems within the burn area and could require substantial sustained efforts to eradicate if they go undetected for a long period of time. The fire occurred in a relatively remote part of the forest that is not regularly visited by the botany crew. Without Early Detection/Rapid Response (EDRR) surveys it is unlikely that new infestations would be detected in the first year after the fire.

Probability of Damage or Loss: Likely. This determination is due to the high likelihood of invasive plant propagules being introduced or spread by fire suppression activities.

Magnitude of Consequences: Moderate. This determination is due to the possibility of damage to natural resources by the introduction of invasive species, which would result in considerable or long term effects to native plant communities.

Risk Level: High. The BAER team recommends early detection rapid response weed surveys and treatment to locate and eradicate new infestations of high-priority invasive species.

Threats to Habitat for Federally Listed Threatened Species

1) Fire Damage to Suitable Occupied Habitat for Threatened Layne's Ragwort
The Federally Threatened plant species Layne's Ragwort (*Packera layneae*) occurs within the fire area and was affected by fire suppression activities as well as the fire itself. During the incident, approximately 1,500 plants were counted on adjacent private land, and approximately 100 plants were counted on Forest Service land following the construction of a one blade wide dozer line through the population in an old road bed under the transmission line on private land but stopped just before the FS boundary. Other fire suppression effects to the population include fire retardant being dropped on some plants, and crews working in the area during firing operations and mopping up. The fire burned at low intensity through the population and resulted in a mosaic of understory burn and unburned patches at the site. Some plants were burned by the fire, resulting in top-kill or singed leaves. Soil burn severity at this population was low to unburned so the roots of this perennial plant species are generally not expected to be damaged. It is expected that the plants will recover from the damage to the leaves from the fire, especially since the fire burned at a time when plants have gone to seed and are beginning to senesce. The site is on a dry ridgetop and there are not expected to be any substantial threats to the location from erosion or runoff.

Probability of Damage or Loss: Unlikely. This determination is due to the very low likelihood of permanent damage to habitat at the site, due to either fire effects on the soils/roots or from substantial erosion or runoff.

Magnitude of Consequences: Moderate. This determination is due to the possibility of damage to natural resources by loss of individuals or habitat, which would result in considerable or long term effects to a federally listed species.

Risk Level: Low. The BAER team does not recommend any treatments.

2) Fire Damage to Potential Habitat for Threatened California Red-legged Frog
Potential habitat for the Federally Threatened California red-legged frog (*Rana draytonii;* CRLF) occurs within the fire area and was affected by fire suppression activities as well as the fire itself. About 1 mile of potentail CRLF stream breeding habitat is inside the influence of the burn area in the Otter Creek drainage, mainly on the mainstem. If breeding was occurring in these locations, the entire burn area would provide potential upland and dispersal habitat for the CRLF. Amphibian surveys have not been documented in or near the burn area to determine if breeding CRLF individuals are present in the Otter Creek drainage. The nearest documented occurrence of CRLF is about 3 miles to the south. Additionally, the known CRLF populations in this area of the Sierra foothills are isolated from each other, providing a very intermittent distribution of CRLF, indicating that there is not much overland connectivity between populations in this portion of the Sierra foothills. Therfore, the likelihood that CRLF are breeding in Otter Creek is extremely low, as it is an area isolated from known CRLF populations.

If the unlikely event of CRLF breeding in Otter Creek is occurring, the consequences from sedimentation would provide a moderate magnitude. The effects that degrade aquatic CRLF habitat include increased sedimentation, removal of trees that provide instream and streamside habitat structure and shade, and changed patterns of flow. The potential watershed responses of the Trailhead Fire are: 1) an initial flush of sediment and ash, 2) rill and gully erosion in drainages and on moderate and steep slopes within the burned area, 3) increased peak flows, and 4) sediment deposition in streams within and downstream of the fire. These responses are expected to be greatest during initial storm events. The likelihood and degree of magnitude of these watershed responses will decrease over time as vegetation becomes reestablished (which would provide ground cover and increase surface roughness) and soil hydrophobicity decreases (which would increase the infiltration capacity of the soils).

Probability of Damage or Loss: Unlikely. This determination is due mainly to the very low likelihood that CRLF occur in the area, and the very low likelihood of permanent damage to potential breeding and aquatic habitat, due to either fire effects on the soils or from substantial erosion or runoff.

Magnitude of Consequences: Moderate. This determination is due to the possibility of damage to natural resources by loss of individuals or habitat, which would result in considerable or long term effects to a federally listed species.

Risk Level: Low. The BAER team does not recommend any treatments.

B. Emergency Treatment Objectives:

• Provide for Public Safety– Ensure communication of potential post fire values at risk has occurred. Reduce threat to life and safety by closing hazardous areas. Further reduce threat to life and safety by installing and maintaining educational/safety signing in hazardous areas and roads until watershed stabilization has occurred and/or the threats/hazards have been removed.

• Noxious Weeds - Reduce the potential for impaired vegetative recovery and introduction/spread of noxious weeds by conducting detection surveys/rapid response.

• Road and Trail Treatments – Objective is to improve road drainage to protect the road system. Reduce erosion from the road surface and sediment delivery to stream channels. Reduce the threat to life and safety for road and trail users by installing hazard signs.

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

Land **90** % Channel **0**% Roads/Trails **90** % Protection/Safety **90** %

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land	90%	80%	N/A
Channel	N/A	N/A	N/A
Roads/Trails	90%	75%	70%
Protection/Safety	90%	80%	75%

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

F. Cost of Selected Alternative (Including Loss):

G. Skills Represented on Burned-Area Survey Team:

[X] Hydrology	[X] Soils	[X] Geology	[ ] Range	[X] Recreation
[ ] Forestry	[ ] Wildlife	[ ] Fire Mgmt.	[X] Engineering	[ ] Lands
[ ] Contracting	[ ] Ecology	[X] Botany	[X] Archaeology	[ ] Hazmat
[X] Fisheries	[ ] Research	[ ] Landscape Arch	[X] GIS	

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Core Team

Eric Nicita (Lead/Soils)
Hannah Stone (Recreation)
Vincent Pacific (Hydrology/Engineering)
David Ennis (Geology)
Blake Engelhardt (Botany)
Jordan Serin (Archaeology)
Charles Hutcheson (Archeology trainee)
Maura Santora (Aquatics trainee)
Mason Bindl (GIS)
Emma Milo (GIS trainee)

H. **Treatment Narrative:**

Protection/Safety Treatments:

A cupola supported by poly urethane foam (PUF) was burned in the fire (Figure 1). The cupola is identified as Delwich Adit #6 (installed in FY2011-2012) and was installed to maintain airflow into the adit to support extensive bat-habitat. When the PUF burned the cupola fell into the feature and the sides further subsided. Treatments include consulting with the bat-biologist and Region 5 Abandoned Mine Closure Crew on the Tahoe National Forest to design and install a closure that will bring the site back to its pre-fire condition
Three open shafts (greater than 30 feet deep) were located by fire fighters and resource advisors during the fire suppression operation at Cement Hill. Two are located on NFS lands and one is located on private along the boundary. The shafts were inventoried by the FS in 2009 and were considered a low to moderate risk because of dense manzanita surrounding the features and general area. The manzanita burned in the fire and now the features are a **high risk** to public safety and OHV users. Emergency treatment includes temporarily fencing the shafts until AML can permanently close them.

Attempts will be made to contact landowner to inform of the elevated safety risk on private land.

ID	Line Item	Units	Unit Cost	Quantity	BAER Cost
Cement Hill Shafts on FS	Intstall fencing	EA	$1,000	2	$2,000
Delwich Adit #6	Reinstall mine closure	EA	$4,500	1	$4,500
Total					$6500

Hazard warning sign installation is proposed to address the intermediate and high risks to life and safety posed by hazard trees and debris flows. A total of five signs would be installed at the major access points into the fire and at the dispersed areas at risk from debris flow (See BAER Treatment Map).

Hazard Sign Installation Cost Estimate:

ITEM	Unit	Unit Cost	# of Units	Cost
GS-11 Archeologist	days	$400.00	1	$400.00
GS-05 Forestry Technician	days	$150.00	8	$1,200.00
Mileage	miles	$0.55	120	$66.00
Hazard Signs and Posts	each	$300.00	5	$1,500.00
Misc. Materials	lump sum	$100.00	1	$100.00
TOTAL COST				$3,266.00

Road and Trail Treatments: covered under Protection/Safety Treatments

The only road problems that were identified are three 18" culverts that are partially plugged and approximately 10 feet below the road tread. Treatments proposed are limited to installing 3 critical dips on Forest Road 13N56 to protect the primary road through the center of the fire area. A contractor will be used to install the dips and GS-5 biological technicians will be used to open excavate the intlet to the culverts.

Personnel	**Daily Rate**	**# Days**	**Cost**
GS-11 Watershed Specialist	400	1	$400
Contractor to install 3 dips	1000	2	$2,000
GS-5 Bio Tech Crew Member	150	2	$300
Subtotal:			$2,700
Fleet/Materials	**Cost**	**Miles/Units**	**Total**
Mileage (100 miles/day x 10 days)	0.5	300	$150
Subtotal:			$150
Total:			$2,850

Cultural Resource Protections:

The primary BAER treatment for FS# 05-03-53-046 is to block access to the site by placing boulders on the historic road (an unauthorized route on FS lands) leading to the site, and to strategically fall trees adjacent to the road to prohibit site entry. Rocks will be placed on the surface and not buried, so the integrity of the historic road is not disturbed. The location identified for barrier placement will allow for vehicle turnaround without resulting in additional forest resource damage.

The primary BAER treatment for FS# 05-03-53-480 is to camouflage artifacts with slash and deadfall materials using chainsaws and hand tools. An additional treatment will be the installation of a sign near the intersection of 13N56 and 13N56B informing the public that disturbing historic resources would be in violation of the Archaeological Resources Protection Act of 1979 (ARPA). Vandalism is a concern due to the site's proximity to Forest Road 13N56 and the Roanoke recreational trailhead.

Implementation of potential emergency rehabilitation treatments will be conducted in compliance with the provisions of the of the *Programmatic Agreement Among the U.S.D.A. Forest Service, Pacific Southwest Region (Region 5),California State Historic Preservation Officer, Nevada State Historic Preservation Officer,*

and the Advisory Council on Historic Preservation Regarding the Process for Compliance with Section 106 of the National Historic Preservation Act for Management of Historic Properties by the National Forests of the Pacific Southwest Region (Regional PA 2013).

Protective Barriers for 05-03-53-046				
Item	**unit cost**	**unit**	**total units**	**Total item cost**
Dump Truck and Trailer	$100	/per trip	2	$200
Serpentine Boulder	$100	/boulder	4	$400
Archaeologist's Time and Monitoring	$400	/day	1	$400
Total Cost of Treatment				$1000

Natural Covering for 05-03-53-480				
Item	**unit cost**	**unit**	**total units**	**Total item cost**
FS Hand Crew	750	/day	1	$750
Archaeologist's Time and Monitoring	400	/day	1	$400
Total Cost of Treatment				$1150

Signage for 05-03-53-480				
Item	**unit cost**	**unit**	**total units**	**Total item cost**
Trail Sign	200	/item	1	$200
Installation	150	/day	1	$150
Archaeologist Time	400	/day	1	$400
Total Cost of Treatment				$750

Land Treatments:

Noxious Weed Surveys and Treatments

Early Detection Rapid Response (EDRR) surveys and treatments will be conducted in 2017 for Eldorado NF target invasive plant species. EDRR is a strategy developed to increase efficiency of weed work by combining surveying and immediate treatment of new weed populations as they are discovered. Areas disturbed during fire suppression (dozer and road as line and drop points) will be surveyed and treated to prevent new infestations. Surveys and treatments will be for one year only per BAER regulations. Priority areas will be surveyed and treated in spring of 2017 when plants are detectable but early enough to treat effectively (prior to maturation and dispersal of seed). There are 24 miles of fireline (dozer, and road) on national forest lands to be surveyed. An additional 8 point locations (drop points and sling load areas) will be surveyed. Infestations will be inventoried using the ENF Invasive Plants Data Form, mapped with a GPS, photographed, and flagged with noxious weed tape. Where feasible, new or isolated infestations will be treated by hand during the same visit as the surveys. Treatments will be conducted in accordance with the *Eradication and Control of Invasive Plants*

Environmental Assessment (ENF 2013). Herbicide treatment will be used only where manual or mechanical methods are not effective or feasible.

Personnel	**Daily Rate**	**# Days**	**Cost**
GS-11 Botanist	308	3	$924
GS-7 Bio Tech Crew Leader	183	10	$1,830
GS-5 Bio Tech Crew Member	147	10	$1,470
GS-7 Bio Tech Crew Leader- FACTS/NRIS Reporting	183	2	$366
Subtotal:			$4,590
Fleet/Materials	**Cost**	**Miles/Units**	**Total**
Mileage (100 miles/day x 10 days)	0.5	1000	$500
Equipment/materials			$200
Subtotal:			$700
Total:			$5,290

Part VI – Emergency Stabilization Treatments and Source of Funds **Initial**

Click red icons for notes.	NFS Lands					Other Lands				Money Left
Line Items	**Units**	**Unit Cost**	**# of Units**	**BAER $**	**Spent $**	**# of Units**	**Fed $**	**# of Units**	**Non Fed $**	**Total $**
A. Land Treatments										
NX Weed Det. Surv.	Ea	1	1.0	$5,090	$0		$0		$0	$0
Subtotal Land Treatments				$5,290	$0		$0		$0	$0
B. Channel Treatments – none										
				$0	$0		$0		$0	$0
Subtotal Channel Treatments				$0	$0		$0		$0	$0
C. Road and Trails										
Subtotal Road & Trails				$2850	$0		$0		$0	$0
D. Protection/Safety										
Interagency Coordination	ea		1		$0		$0		$0	$0
Closure & Hazard Signage	ea		1	$4016	$0		$0		$0	$0
OHV Barriers/mine closure	ea	$10,708	1	$8,650	$0		$0		$0	$0
Subtotal Protection				$12,866	$0		$0		$0	$0
E. BAER Evaluation										
Assessment Team	0520	H5BAER	---	---	$15,000	---	$0	---	$0	$0
Recon Flight	0520	H5BAER	---	---	$2000	---	$0	---	$0	$0
Subtotal Evaluation				---	$17,000	---	$0	---	$0	$0
F. Monitoring/Implementation Coordination										
Subtotal Monitoring				$1,000	$0		$0		$0	$0
G. Totals				**$38,806**	**$34,000**		**$0**		**$0**	**$0**
Previously approved						Comments:				

PART VII - APPROVALS

1. Lawrence A. Crabtree — Forest Supervisor (signature) — 7/29/2016 — Date

2. Barnie T. Grant — Regional Forester (signature) — 8/4/2016 — Date