

File Code: 2520

Date: August 25<sup>th</sup> 2020

**Subject:** Modoc July Complex Fire Burn Area Emergency Response Assessment, 2500-8 Initial Request

**To:** Regional Forester

Attached is the initial request for Burned Area Emergency Response (BAER) funding for the July Complex Fire on the Modoc National Forest. The fire burned 83,261 total acres and 46,894 acres of national forest lands. The fires began July 22, 2020 and were contained on August 19, 2020.

I agree with the BAER Assessment findings that an emergency exists regarding threats to human health and safety, roads and infrastructure, geological resources, and spread of noxious weeds.

The attached Initial 2500-8 BAER Report requests authorization to spend \$115,785 in emergency BAER funds for hazard warnings and closures to protect public safety, signing, road work to control water on Forest System Roads, to manage runoff, protection of sensitive cave environments concerning public safety and increased runoff into the cave system, detection and response to noxious weeds in areas likely to transport seed.

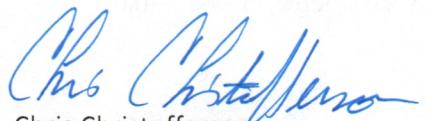
Approval is requested for treatments as follows:

Treatment	Request
<b>Land Treatments</b>	
EDRR survey	\$ 36,960
EDRR treatment	\$ 25,625
<b>Channel Treatments</b>	\$0
Road and Trail Treatments	
Stormproffing	\$ 37,300
Storm Patrol	\$ 7,200
<b>Protection and Safety</b>	
Caves	\$ 1,700
Warning Signs, Barriers	\$ 7,000
<b>Monitoring</b>	\$0
<b>Total</b>	<b>\$ 115,785</b>

\* This request does not include costs of the BAER Assessment team.

This request is made with the understanding that BAER funds are emergency funds which may be spent only in accordance with the treatments proposed and approved in the 2500-8, that BAER projects are emergency work, and implementation should be completed as soon as possible and before damaging storms. In all cases initial implementation must be completed before the earlier of one year after fire containment or funding authorization.

Please contact Bill Goodman Forest BAER Coordinator, at (530) 233-8794 or Cathy Carlock, Assistant Forest BAER Coordinator at (530) 569-0060 if you have any questions.



Chris Christofferson  
Forest Supervisor

Enclosure (1)

Cc: Dave Young, (regional BAER Coordinator), Bill Goodman (forest BAER Coordinator)

Date of Report: 8/18/2020

## JULY CX 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: July Complex****B. Fire Number: CA-MDF-000487****C. State: CA****D. County: MODOC****E. Region: 5****F. Forest: MDF****G. District: Big Valley/Doublehead Ranger Districts****H. Fire Incident Job Code: P5NA0A****I. Date Fire Started: 7/22/2020****J. Date Fire Contained: at 98%****K. Suppression Cost: 15M****L. Fire Suppression Damages Repaired with Suppression Funds (estimates):**

1. Fireline repaired (miles): 96.2
2. Other (identify): 7.7

**M. Watershed Numbers:**

Table 1: Acres Burned by Watershed

HUC #	Watershed Name	Total Acres	Acres Burned	% of Watershed Burned
180102041001	The Panhandle	48,349	35,454	73%
180102041002	The Frog Pond-Tule Lake	29,237	10,878	37%
180102041003	Robinson Flat-Tule Lake	38,740	13,882	36%
180102041105	Town of Tionesta	19,169	510	3%
180102041106	Dry Lake	39,190	34	<1%
180102041107	Dobie Flat	36,680	17,224	47%
180102041401	Sheep Camp Butte	31,261	2,877	9%
180102040304	Double Head Lake-Frontal Clear Lake	32,730	1,367	4%

HUC #	Watershed Name	Total Acres	Acres Burned	% of Watershed Burned
180200021205	Rose Canyon-Pit River	18,160	1,035	6%

**N. Total Acres Burned: 83,261***Table 2: Total Acres Burned by Ownership*

OWNERSHIP	ACRES
NFS	46,894
OTHER FEDERAL (LIST AGENCY AND ACRES)	32,794
STATE	-
PRIVATE	3,573
<b>TOTAL</b>	<b>83,261</b>

**O. Vegetation Types:** Stuff with leaves or needles, and grasses.

**P. Dominant Soils:** The soils are mostly comprised of deposited air fall ash and pumice that was ejected from the Medicine Lake caldera approximately 1000 years ago. The ash and pumice was deposited on the pre-existing surfaces of basaltic lava flows and cinder cones. Being a very young soil, there is very little soil development which means little clay and silt. The soil particles are vesicular and float when dry. Should enough precipitation fall to transport the soil particles to a drainage, they will easily float in a hyper-concentrated flow.

**Q. Geologic Types:** Medicine lake highland basalts and pumice formations**R. Miles of Stream Channels by Order or Class:***Table 3: Miles of Stream Channels by Order or Class*

STREAM TYPE	MILES OF STREAM
PERRENIAL	5
INTERMITTENT	7
EPHEMERAL	-
OTHER (DEFINE)	

**S. Transportation System:**

Trails: National Forest (miles): 0.0

Other (miles): -

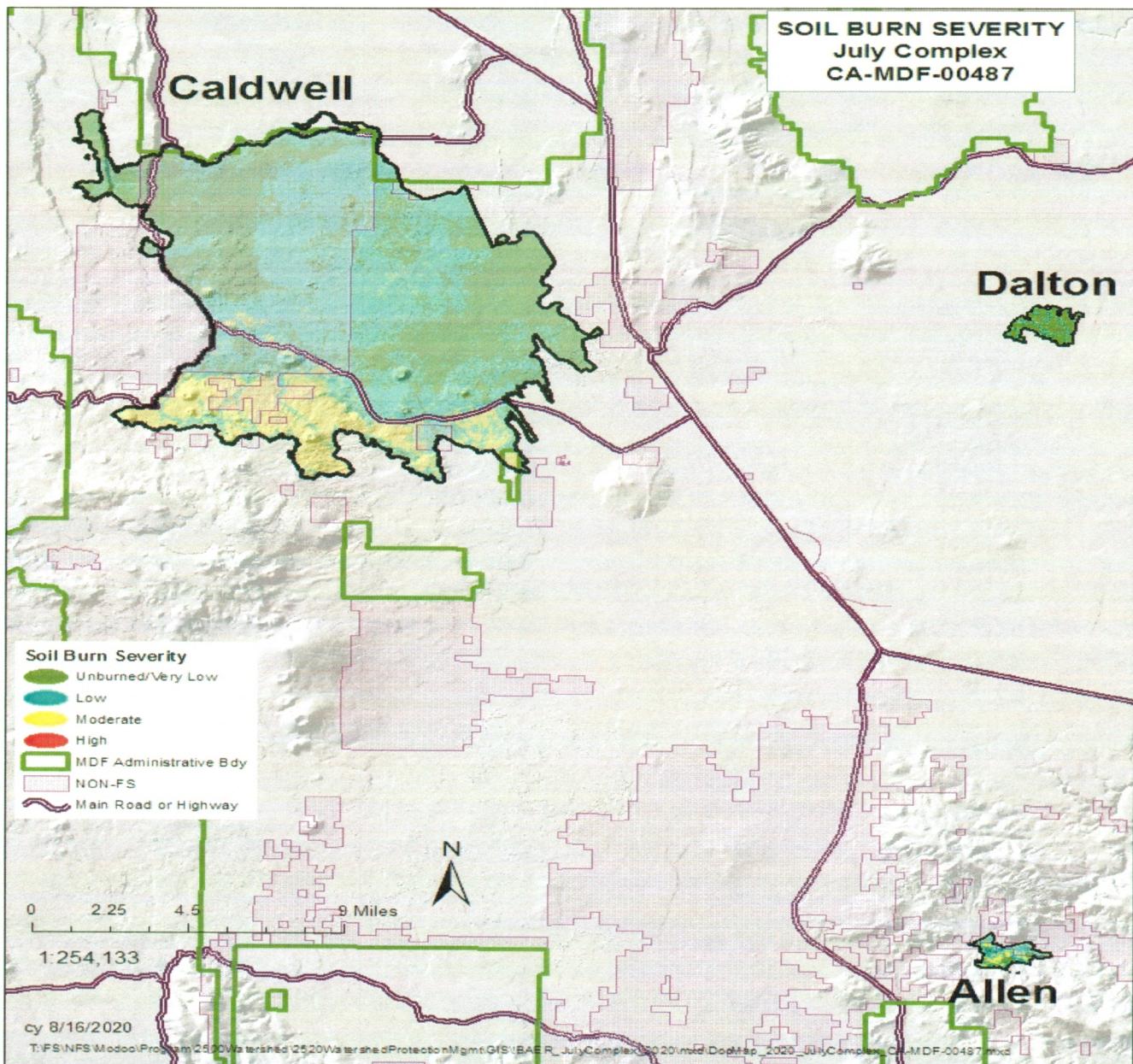
Roads: National Forest (miles):

Other (miles): 203

**PART III - WATERSHED CONDITION****A. Burn Severity (acres): 83,261**

Soil Burn Severity	<u>NFS</u>	Other Federal ( <u>NPS</u> )	Other Federal ( <u>FWS</u> )	State	Private	Total	% within the Fire Perimeter
Unburned	20,780	14,679	44		611	36,114	43%
Low	16,743	17,064	75		773	34,655	42%
Moderate	9,371	770	162		2,189	12,492	15%
High							
<b>Total</b>	<b>46,894</b>	<b>32,513</b>	<b>281</b>		<b>3,573</b>	<b>83,261</b>	

Figure 1: Soil Burn Severity Map for July Complex



- B. **Water-Repellent Soil (acres): 15,000 acres.** Most of the July Complex fires are blanketed by a deposit of dacitic pumice and ash. Water repellency was prominent and strong throughout the fire area. This repellency occurs naturally in the unburnt pumice and ash soil. The fire volatized the surface water repellent compounds and they condensed lower adding to a stronger and thicker water repellent layer. This strong water repellency will increase surface runoff and increase the amount of precipitation necessary to hydrate the subsurface soil layers.
- C. **Soil Erosion Hazard Rating:** Erosion Rates derived from ERMiT modelling is used to evaluate erosion potential.
- D. **Erosion Potential:** 0.2 tons/acre for a 5yr runoff event for the entire fire area. The fire-wide erosion rates are extremely low primarily because most of the fire area is dominated by flat ground with low soil burn severity. Rates do increase with steeper slopes and higher burn severity. One area of particular concern identified by the National Park Service was on the north slope of Caldwell Butte. Although the predicted erosion rates there were some the higher rates modelled at 1.2 tons/acre, this is considered relatively low. One has to be careful using modeled erosion in the pumice environment, however. The pumice soils do not

respond like typical mineral soils. They are highly vesicular and have a particle density less than water when dry. As was conveyed to the Park Service, the BAER team does expect significant material to deposit on the road as it erodes and transports off Caldwell Butte. The material will not deposit as a dangerous debris flow, but it could pose risk to motorists who encounter the material and make a sudden deceleration or could lose control of a vehicle.

**E. Sediment Potential:** 30% of erosion values in tons/acre.

**F. Estimated Vegetative Recovery Period (years):** 3 to 5 years.

**G. Estimated Hydrologic Response (brief description):**

It is expected the landscape would respond as if the 2-year storm discharge were associated with a 2-year storm (unburned soil burn severity), 5-year event (low soil burn severity) and 10-year event (moderate and high soil burn severity), respectively. For the 5-year flood, low burn was calculated at the 10-year flow while moderate/high burn was calculated as the average between the 10- and 25-year flows.

Results for the post-fire 2-year flows were 3 times higher, and the 5-year flows was 1.9 times the pre-fire values. The area modeled for increased flows on the Caldwell Fire was off the Cougar Butte Road A4401. This area has a drainage area of 0.7 sq miles with annual precipitation of 27 inches. The road will act as a dam since it has no culvert. Road is 370 feet long, 8 to 12 feet tall, with a running surface of 20 ft wide. There were five other places along this road along the next mile. These other spots were not as large as the first but had the same concept; no culvert and a large amount of fill material that could get washed out if the flow over topped the roadway. Post fire flows would increase in the same magnitude since they were in the same area. 2-yr flows pre fire would be 16 cfs, post fir would be 48 cfs a 3x increase. The 5-year event would change from 33 cfs pre fire to 60 cfs post fire.

## PART V - SUMMARY OF ANALYSIS

### **Introduction/Background:**

The July Complex started by a series of lightning strikes in late July, 2020 starting new fires across the Modoc National Forest. The July Complex few quickly grew out of control with near-record heat and strong gusty southwesterly winds. Fires were fueled by an abundant grass crop produced by above average rain coupled with local brush suffering from long-term drought effects, and old growth stands of vegetation. Three separate fires constist of the July Complex (Caldwell at 80,859 ac, Dalton at 1,367 ac, and the Allen at 1,035 ac).

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

*Table 4: 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):**

##### Potential Risks to Human Life along the Transportation System

Life: High Risk (*Possible, Major*) –

Within the July Complex fire perimeters, there are various locations of moderate soil burn severity, indicating a high potential for hazardous trees/snags along the roads system. Additionally, areas containing unburned/low severity soil burn have potential hazard trees, although the primary concerns come from within the mod/high soil burn severity (SBS) areas. Secondly, there is a probable likeliness that some roads will see an increase in storm-related runoff, debris, rock, and sediment deposits downslope of the Caldwell fire perimeter due to increased

instability in the mod SBS areas. If not mitigated the increased runoff into storm season to the road system would cause a safety issue to road users and increase the chance of injury.

It is recommended to install signage along major access points into the fire area to mitigate these high-risk concerns by warning forest users of the potential risks of entering burn scar areas of the Caldwell Fire.

## 2. Property: High Risk (*Likely, Moderate*)

**Roads:** Seasonal storms will likely bring an increase in runoff and sediment deposits along the Cougar Butte and Tichnor Road areas due to their proximity to steep, moderate severity burn areas. Several roads in these areas lack the proper drainage structures to effectively mitigate increased runoff and sediment concerns. Potential washouts and road failure could occur on road segments around Cougar Butte due to the absence of drainage structures downslope of moderate SBS, with large segments of fill elevating the road above the native surface. This area may not handle an increased runoff and sediment delivery, worsening road conditions and possibly making them unsafe for FS user travel.

Additionally, the burning of cover brush and conifer stands has increased the amount of potentially hazardous off-road/OHV access in the burned areas. To help discourage FS users from travelling off NFS roads and along suppression dozer lines, it is recommended to install OHV breaks in several areas throughout the fire perimeter.

## 3. Natural Resources (NR):

### **Invasive Noxious Weeds:** High Risk (likely, moderate)

Approximately 616 miles of dozerline were constructed (refer to Table 2) during fire suppression activities. In addition to creating the likelihood for invasive weed introduction and spread, the disturbance caused by dozerlines are expected to inhibit the recovery of native vegetation communities and rare plant populations.

Probability of Damage or Loss: Likely. This determination is due to the change in watershed response causing sheet and rill erosion of topsoil in moderate to high SBS areas.

Magnitude of Consequence: Moderate. This determination is due to the high potential for invasive weeds in portions of the moderate and high SBS areas, especially riparian corridors, dozerlines, roadsides, and areas that have experienced frequent disturbance.

### **Sensitive Cave Environments:** High Risk (Possible, Major)

Within the moderate SBS areas of the Caldwell fire, much of the tall shrub vegetation cover has burned, leaving once hidden openings to Tickner's and Bertha's Cupboard cave systems visible from a public road. Three vertical entrances are now visible to the public: two are skylights only accessible through rappel of 25-30ft descent, one a collapse sinkhole which provides precarious access to Tickner's and Bertha's Cupboard systems. The exposure of these entrances provides high risk concerns both to human life and to cave health. If left unmitigated, there is potential for increased human visitation and falling risks, which could result in serious injuries, and possibly be fatal. It is recommended to install warning signs to alert potential FS visitors/onlookers of the potentially fatal risks associated with entering these caves.

Additionally, there is at least one observed cave entrance where the downdraft air from the cave sucked the fire directly to the entrance at the bottom of a moderate SBS slope of around 35%. The fire burned all of the vegetation assisting in the dispersion of water runoff into the mouth of the cave. Both of these cave systems were nominated for significance in 2020 under the Federal Cave Resources Protection Act (1988) and are documented to contain multiple sensitive subspecies of organisms only adapted to cave ecosystems, seasonal bat hibernaculum, as well as fragile geologic features specific to lava tube environments that cannot reform once damaged. In order to mitigate potential runoff damages to the cave entrance, it is recommended to install a couple waterbars uphill of the cave entrance to help divert and disperse water, ash, debris, and sediment from entering the cave system.

#### 4. Cultural and Heritage Resources (CHR):

Of the 14 cultural resources assessed, none have been identified as needing specific BAER actions. However, all of the cultural resources within the burn area are now at an increased risk of being destroyed through looting due to the decrease in foliage, duff, and other natural visual barriers.

#### B. Emergency Treatment Objectives:

To allow safe passage of water to protect infrastructures and watersheds from accelerated sheet and rill erosion. To protect watersheds from the spread of noxious weeds and unfettered OHV access. Risk determination is dependent on the design storm selected and downstream values at risk. By using an average storm (2-year event) emergency planning measures can be designed to mitigate and minimize anticipated risks. Generally, using a 2-year design storm the values at risk can be evaluated to determine if an emergency exists but in areas prone to intense thunderstorms a 5 to 10-year storm may be more appropriate.

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

**Land:** 90

**Channel:** -

**Roads/Trails:** 90

**Protection/Safety:** 90

#### D. Probability of Treatment Success

Table 5: Probability of Treatment Success

	<i>1 year after treatment</i>	<i>3 years after treatment</i>	<i>5 years after treatment</i>
<i>Land</i>	90	85	80
<i>Channel</i>	-	-	-
<i>Roads/Trails</i>	85	80	80
<i>Protection/Safety</i>	90	85	80

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

#### F. Cost of Selected Alternative (Including Loss):

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

- |   |   |   |  |   |
|---|---|---|--|---|
| <input checked="" type="checkbox"/> Soils | <input checked="" type="checkbox"/> Hydrology | <input checked="" type="checkbox"/> Engineering | <input checked="" type="checkbox"/> GIS      | <input checked="" type="checkbox"/> Archaeology |
| <input checked="" type="checkbox"/> Weeds | <input type="checkbox"/> Recreation           | <input type="checkbox"/> Fisheries              | <input checked="" type="checkbox"/> Wildlife |   |
| <input type="checkbox"/> Other:           |   |   |  |   |

**Team Leader:** Brad Rust

Email:

Phone(s): [brad.rust@usda.gov](mailto:brad.rust@usda.gov), 530-806-5406

**Forest BAER Coordinator:** Cathy Carlock

Email:

Phone(s): [cathy.carlock@usda.gov](mailto:cathy.carlock@usda.gov), 530-569-0060

**Team Members:** Table 6: BAER Team Members by Skill

Skill	Team Member Name
Team Lead(s)	Brad Rust
Soils	Eric Nicita
Hydrology	Bill Goodman
Engineering	Chris Bielecki, Kaci Spooner
G/S	Celia Yamagwia
Archaeology	Dayne Crosby

Skill	Team Member Name
Weeds	Kerry Johnston
Recreation	-
Other	Pete Johnston, Garrett Noles

#### H. Treatment Narrative:

The proposed treatments on National Forest System lands can help to reduce the impacts of the fire, but treatments will not completely mitigate the effects of the fire. The treatments listed below are those that are considered to be the most effective on National Forest System lands given the local setting including topography and access.

#### Land Treatments:

Natural Recovery: Vegetation in the mixed conifer and fir forests will recover slowly. Even in areas of moderate soil burn severity, the canopy was mostly killed and the seed source removed. Stands with an element of Jeffrey, sugar, western, or ponderosa pine will likely recover more quickly, since at least a few mature trees are likely to have survived to produce seed into newly exposed mineral soil. Meadows dominated by grasses and forbs will recover within a year, because for the most part soil temperatures were not hot enough to kill root systems. The montane chaparral shrubs were mostly killed by the fire, but fire stimulates manzanita seeds and sagebrush seeds stored in the soil to germinate. In riparian areas sedges and grasses were resprouting within 10 days of the fire, and most riparian shrubs are also likely to resprout.

Early Detection Rapid Response (EDRR): An emergency exists with respect to natural vegetation recovery due to the threat of invasive weed introduction and spread. Existing invasive weed data was limited before the fire. Some invasive weed infestations are documented in unburned isolated patches within the July Complex and outside/adjacent to the burn perimeters. However, many large infestations were unmapped and observed going to seed (especially the invasive annual grasses and dyer's woad) and dozerline was pushed from these areas outside the fire perimeter into the fire perimeter. These areas where ground disturbance was highly likely to transport seed into moderate SBS areas are likely to experience invasive weed introduction. There are several vectors that serve as corridors for invasive weed introduction within the moderate SBS areas including roads, recreational trails, high winds, and waterways. Weed detection surveys and treatments are recommended to determine whether ground disturbing activities related to the July Complex have resulted in the expansion of invasive weeds is requested for the first year. Completion of surveys in riparian areas and known invasive and populations would be the first priority. The second survey priority would be along roads, dozerlines, handlines, and staging areas. Surveys of the general habitats in the burned area would be the lowest priority. The introduction and spread of invasive weeds into areas that burned Moderate to High SBS and were disturbed during fire suppression related activities has the potential to establish large and persistent invasive weed infestations. In addition, existent infestations along access roads will increase the likelihood of establishment in the burn areas, due to their accelerated growth and reproduction and a release from competition with native species. These invasive weed populations may affect the structure and habitat function of native vegetation communities. It is expected that most native vegetation would recover if invasive weed introduction is mitigated.

#### Invasive Weed EDRR (survey and treatment – all suppression-related)

Item	Unit	Unit Cost (\$)	# of Units	Cost (\$)
Invasive survey	acres	60	616	36,960
Invasive treatment	acres	125	205	25,625
		<b>Total Cost (\$)</b>		<b>62,585</b>

**Roads and Trail Treatments:** (no trail treatments)

***Caldwell Fire:*****Safety –**

Within the Caldwell Fire, warning signs would need to be installed to warn road users of the unmitigated dangers present in the FS fire area. Warning signs will be placed on the main access to the Caldwell Fire: NFSR 44N75 (49 Road), NFSR 48N08 (10 Road), NFSR 44N01, NFSR 46N21.

Additionally, to limit potentially hazardous off-road/OHV access in the burned areas, it is recommended to install OHV breaks in several areas throughout the fire perimeter.

**Storm Proofing –**

In the moderate burn severity areas that occur along slopes greater than 20%, a lack of additional drainage structures could compromise the road infrastructure access on NFSR 44N01 (Backcountry Discovery Trail) and 44N29Y. Along 44N01, around Cougar Butte, at least seven road sections were observed to not contain any drainage features that have the capacity to remove an increase in runoff or sediment/debris. Concern exists for possible washouts to damage these sections during large seasonal thunderstorm events. Similar concerns exist for sections of roads with slopes of 17-25%, which are downslope of butte features/volcanic vent ridges in the moderate SBS areas (44N22, 44N23), and provide vital/only access to actively monitored cave features. To mitigate against any increased runoff and sediment delivery, it is recommended to install rolling dips, waterbars, and clean and armor existing culverts. Additionally, it recommended to improve spots of existing in-slope ditches to provide relief in the occurrence of storm events.

At certain crossings (44N75/49 RD, 44N01, 44N29Y) vegetation clearing and additional armoring is needed around the culverts to allow water and debris to pass through.

**Storm Inspection and Response** – In addition to the roads receiving treatments, additional roads that are along a moderate burn severity would need to be monitored during and after storm events. Storm inspection and response would allow the forest to monitor the road drainage structure treatments to ensure the treatments are functioning, clean the area to ensure they continue to function in the future, and maintain and/or repair any damage to the road surface due to the sediment delivery.

***Allen Fire:***

**Storm Inspection and Response** – Roads that are within a moderate burn severity would need to be monitored during and after storm events. Storm inspection and response would allow the forest to monitor the road drainage structure treatments to ensure the treatments are functioning, clean the area to ensure they continue to function in the future, and maintain and/or repair any damage to the road surface due to the sediment delivery.

**Totals for Caldwell and Allen Fires:**

Treatment Type	Treatment Objective	Treatment Description	Treatment Cost: Caldwell Fire	Treatment Cost: Allen Fire
Storm Proofing	To protect the road infrastructure and maintain ML standards of road access for visitors and FS employees. Reducing likelihood of culverts plugging up and road washouts due to increased runoff and sediment delivery.	Construct rolling dips and waterbars, armor existing culverts which do not have the capacity to remove increased runoff, reinforce existing ditches, and complete vegetation clearing around culverts.	37,300.00	
Storm Monitor	To inspect and mitigate storm related damages to roads to ensure they function into the future.	The forest will also do a storm inspection and response after storm events to monitor and/or repair treatments as needed to prevent further damage to infrastructure. Storm inspection and response are included in the cost of the road treatments.	8 days: 6,400.00	1 day: 800.00
Safety	To ensure human safety by bringing awareness to the hazards encountered when entering burned areas.	Install warning signs that describe hazards encountered in burned areas such as hazardous trees, falling rocks, and road debris.	2,000.00	
Total Cost			46,500.00	

\*\*See Appendix A for Engineering Summary Details.

#### **Protection/Safety Treatments:**

Posting signs in areas burned to alert the public to potential dangers of falling trees, increased runoff, hazardous rockfall. These are itemized in the engineering treatments and Appendix A.

#### **Natural Resources Treatments:**

##### **Sensitive Cave Environments –**

To protect both human life and sensitive cave organisms and ecosystems from possible risks that could have major consequences.

VAR	Objective	Treatment	Price/Unit (\$)	Quantity	Total Cost
Human Life/Cave Ecosystem	Warn visitors to the existence of potential harm from entering vertical cave entrances.	Place signs along the access road to alert visitors to the danger, and discourage their entrance of the cave.	\$200.00/sign (installation and mileage included)	2	\$400.00
Cave Ecosystem	Divert potential increased runoff into cave system.	Install waterbars/ waterbreaks, native material to divert and disperse water and debris.	\$250.00/ea	2	\$500.00
		Storm Patrol	\$800.00/day	1	\$800.00
<b>Final Total</b>			<b>\$1700.00</b>		

**Cultural and Heritage Treatments:** none

**I. Monitoring Narrative:** none

**PART VI – EMERGENCY STABILIZATION TREATMENTS AND SOURCE OF FUNDS**

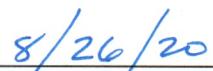
		NFS Lands				Other Lands				All
		Unit	# of		Other	# of	Fed	# of	Non Fed	Total
Line Items	Units	Cost	Units	BAER \$	\$	units	\$	Units	\$	\$
<b>A. Land Treatments</b>										
EDRR survey	acres	60	616	\$36,960	\$0		\$0		\$0	\$36,960
EDRR treatment	acres	125	205	\$25,625	\$0		\$0		\$0	\$25,625
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<b>Subtotal Land Treatments</b>				<b>\$62,585</b>	<b>\$0</b>		<b>\$0</b>		<b>\$0</b>	<b>\$62,585</b>
<b>B. Channel Treatments</b>										
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<b>Subtotal Channel Treatments</b>				<b>\$0</b>	<b>\$0</b>		<b>\$0</b>		<b>\$0</b>	<b>\$0</b>
<b>C. Road and Trails</b>										
stormprofing	project	37,300	1	\$37,300	\$0		\$0		\$0	\$37,300
Storm Patrol	project	7,200	1	\$7,200	\$0		\$0		\$0	\$7,200
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<b>Subtotal Road and Trails</b>				<b>\$44,500</b>	<b>\$0</b>		<b>\$0</b>		<b>\$0</b>	<b>\$44,500</b>
<b>D. Protection/Safety</b>										
caves	project	1,700	1	\$1,700	\$0		\$0		\$0	\$1,700
Warning Signs, Barriers	project	7,000	1	\$7,000	\$0		\$0		\$0	\$7,000
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<b>Subtotal Protection/Safety</b>				<b>\$8,700</b>	<b>\$0</b>		<b>\$0</b>		<b>\$0</b>	<b>\$8,700</b>
<b>E. BAER Evaluation</b>										
Initial Assessment	Report	\$34,462		---	\$0		\$0		\$0	\$0
					\$0	\$0		\$0		\$0
<i>Insert new items above this line!</i>				---	\$0		\$0		\$0	\$0
<b>Subtotal Evaluation</b>				<b>\$0</b>	<b>\$0</b>		<b>\$0</b>		<b>\$0</b>	<b>\$0</b>
<b>F. Monitoring</b>										
					\$0	\$0		\$0		\$0
					\$0	\$0		\$0		\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<b>Subtotal Monitoring</b>				<b>\$0</b>	<b>\$0</b>		<b>\$0</b>		<b>\$0</b>	<b>\$0</b>
<b>G. Totals</b>										
Previously approved										
Total for this request					<b>\$115,785</b>	<b>\$0</b>		<b>\$0</b>		<b>\$115,785</b>

**PART VII - APPROVALS**

1.



Forest Supervisor



Date

## Appendix A – Engineering Treatment Table

## Engineering Summary Detail:

	Ditch Reinforcement			Rolling Dips			Driveable Waterbars			Culvert Armoring			Vegetation Clearing		Projected Total
Road	Length of Mile	Price/Unit (\$)	Total Cost	Length of	Price/Unit (\$)	Total Cost	Length of	Price/Unit (\$)	Total Cost	Length of	Price/Unit (\$)	Total Cost	Length of	Price/Unit (\$)	Total Cost
44N01	.80	3,500	2,800	5	1,250	6,250	5	750	3,750	4	1,000	4,000			16,800
44N23				3		3,750	3		1,500						5,250
44N22							3		2,250						1,500
44N75									2		2,000	2	500	1,000	3,000
44N29Y				2		2,500	3		2,250	1	1,000	1,000			5,750
Caldwell	Storm Patrol & Inspection			Price/day with 2 person crew: \$800.00			Estimated length of time: 8 days			6,400					
Allen	Storm Patrol & Inspection						Estimated length of time: 1 day			800					
Caldwell	OHV Barriers			Installation price (ea): \$500			10			5,000					
Caldwell	Burned Area Warning Sign			Price per sign (w/installation): \$500			4			2,000					
							Total Estimate			<b>46,500</b>					