Date of Report:

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: Rosasco

B. Fire Number: CA-STF-1355

C. State: CA

D. County: Tuolumne

E. Region: 05 – Pacific Southwest

F. Forest: Stanislaus

G. District: Groveland

H. Fire Incident Job Code: P-5MRC4

I. Date Fire Started: 2015

J. Date Fire Contained: 9/15/2019

K. Suppression Cost: unknown

L. Fire Suppression Damages Repaired with Suppression Funds (estimates): Roads, with brushing and hand prep work were used for 95% of the containment lines, and no suppression repair is expected. ~1,500 feet of handline was constructed. Minor repairs will occur before winter.

1. **Fireline repaired (miles): 0.3**
2. **Other (identify):**

M. Watershed Numbers:

Table 1: Acres Burned by Watershed

HUC #	Watershed Name	Total Acres	Acres Burned	% of Watershed Burned
180400090802	Reed Creek	24,527	730	3%

N. Total Acres Burned:

Table 2: Total Acres Burned by Ownership

OWNERSHIP	ACRES
NFS	729
OTHER FEDERAL (LIST AGENCY AND ACRES)	
STATE	
PRIVATE	1
TOTAL	730

O. Vegetation Types: Mixed Conifer & white fir, deerbrush and whitethorn understory and openings.

P. Dominant Soils: Tallac, Wintoner (minor component) and McCarthy families

Q. Geologic Types: Granodiorite of Poopenaut Valley, & Disaster Peak Formation / andesitic mudflows

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	0.47
INTERMITTENT	0.94
EPHEMERAL	2.59
OTHER (DEFINE)	

S. **Transportation System:**
Trails: *National Forest (miles):* 0 *Other (miles):* 0
Roads: *National Forest (miles):* 6.6 *Other (miles):* 0

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	73				73	10%
Low	568			1	569	78%
Moderate	88				88	12%
High	0					
Total	729			1	730	100%

B. Water-Repellent Soil (acres): 44 acres

C. Soil Erosion Hazard Rating: High: 112 acres (15%); Moderate 471 acres (65%); and Low 147 acres (20%). The fire increased EHR levels somewhat over pre-fire conditions, Pre fire EHR was roughly 10% high, 56% moderate, and 34% low. Steep slopes and loose, medium-textured soils with low aggregate stability lead to the relatively high Pre-fire EHR. Levels are not increased much due to patchy nature of the burn, and moderate SBS being located on the steepest slopes that were already rated High EHR pre-fire.

D. **Erosion Potential:** Erosion modeling was not performed for this fire due to limited VARs. Field observations indicated isolated patches of increased erosion potential. Most of the moderate SBS within this fire are on the steepest slopes on the North and NW sides of the fire. However, these patches are universally small (less than 10 acres) and have high potential for needlecast before winter. Erosion will be elevated above base levels, but not enough to significantly impact soil productivity.

E. Sediment Potential: There is only one mapped perennial drainage within the fire footprint. Outside the perimeter are two perennial drainages, Niagara and Reynolds creeks, but there is an unburned buffer of >50 feet, and typically several hundred feet between the fire and creek banks. This buffer distance, combined with the low burn severity indicate sediment potential will be low and is not expected to adversely affect beneficial uses of water.

F. Estimated Vegetative Recovery Period (years): 3 years. Very little torching of overstory canopy occurred within the fire. Understory vegetation consisted of several sprouting shrub species, and there are pockets of unburnt vegetation to allow more rapid recovery compared to the typical late summer wildfire.

G. Estimated Hydrologic Response (brief description): Preliminary hydrologic modeling was performed for the unnamed perennial stream that crosses forest road 2N66. The drainage is 255 acres and is the largest one within the fire perimeter. Post-fire peak flow for a 2-year recurrence interval event is estimated to increase by 30 – 50% above pre-fire conditions. This represents a relatively modest increase in estimated post-fire peak flow and is not expected to greatly increase the risk of hydrologic hazards such as flooding and debris flows. The majority of the watershed experienced low soil burn severity and the upper 29% of the watershed is outside the fire perimeter.

PART V - SUMMARY OF ANALYSIS

Introduction/Background

The Rosasco Fire was first detected in 2015. Several times during summer months it has flared up and been at risk of spreading to surrounding vegetation. Stanislaus fire patrol and investigators believe it is burning underground in fuels that are remnants of an old West Side logging camp buried within the soil layer (including buried wood, and possibly petroleum products). Attempts to extinguish the fire have been unsuccessful, and involve safety concerns for firefighters. Thus, the fire has remained in periodic patrol status since 2015. [] In August 2019, the district ranger and fire staff decided to attempt a confine and contain suppression strategy for firefighter and public safety, and to reduce the risk of the fire spreading under uncontrolled conditions. The area has a high concentration of snags caused by the 2013 Rim Fire along with several years of drought and beetle infestation. The Stanislaus Incident Management Team began prep work in August, and nighttime indirect ignitions began in early September to burn out vegetation and fuel between the edge of the underground fire and control lines. [] A BAER assessment was initiated after the fire reached 500 acres. While a majority of the acreage of the Rosasco fire resulted from burn out operations, the Forest BAER Coordinator decided an assessment was appropriate because: timing of ignitions occurred under normal, dry summer wildfire conditions, there were pockets of heavy dead fuel loading (reburn conditions from the Rim Fire), steep slopes, and a FS system road and stream run parallel to the entire bottom slope of the fire. A soil scientist and hydrologist assessed the fire on September 12th to determine the possible watershed response, and to assess potential values at risk. Other resources were consulted (weeds, archaeology, aquatics, wildlife) to confirm the resources present in the area. A second visit to assess critical values occurred on 9/19/2019.

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. Post-fire flood flows are not expected to be significantly higher than pre fire conditions and there are very few stream crossings or values at risk near drainages below the fire. Thus the

risk of debris flows and sediment flows are not substantially elevated beyond normal levels. [] Hazard trees are the primary threat to HLS in the Rosasco fire. There was a high density of snags (from 2013 Rim fire and beetle kill) before the Rosasco fire, which are now further weakened and susceptible to falling in the next year. Two routes pose a specific risk of hazard trees, 2N66 and 3N01G, due to a high density of snags. Additionally, both routes are dead ends, with no alternate egress if Forest users are trapped behind fallen trees. The other main road in the fire (3N01) had a majority of hazard trees felled during suppression activities and should pose minimal additional risk.

Hazard Tree: Low use roads, risk of user getting blocked/trapped or injured by hazard tree.
Probability: Possible Magnitude: Major Risk: **High**

2. **Property (P):**National Forest system roads are the only possible property value at risk within the Rosasco fire. However, due to the low expected watershed response, the BAER team does not expect significant damage potential to road infrastructure.

   Damage to Forest roads from flooding or debris flows.
   Probability: Possible Magnitude: Minor Risk: **Low**
3. **Natural Resources (NR):**Botany – Pre-fire weed populations in the Rosasco included bull thistle and woolly mullein at several small sites. Due to the limited amount of fireline construction, small fire acreage, and no known direct disturbance to existing weed populations, the risk of weed spread is relatively minor. No noxious weed EDRR treatment is recommended. The Groveland District Botanist, Jennie Haas was consulted before making this recommendation. [] Hydrology & Soil Productivity – As discussed in Section III, the erosion and hydrologic responses in the Rosasco fire are expected to be mild, with only minor increases above a pre-fire condition. Erosion and sedimentation will occur, but are not significant enough to threaten beneficial uses of water, or decrease soil productivity. [] Threatened or Endangered Species – Stanislaus Aquatic biologist Steve Holdeman indicated there was no suitable or occupied habitat for Threatened or Endangered Species in the Rosasco Fire.

   Risks to all natural resources from flooding, debris flows, or weed spread
   Probability: Likely Magnitude: Minor Risk: **Low**
4. **Cultural and Heritage Resources:**Groveland District Archaeologist, Shoshana Rosenberg was consulted about post-fire threats to heritage resources. Based on our assessment of the limited watershed response, she thought there was not a need to assess heritage resources for flooding or debris flow risk. However, hazard trees still posed a risk to a handful of sites within the perimeter. While there are 2-3 locations that are at risk of damage from hazard trees, the BAER team determined the risk was not increased substantially due to changed conditions caused by the fire. Many of the standing dead trees near sites were present before the fire, and were not weakened enough to pose an immediate or near-term risk to sites.

   Hazard Tree: Risk of damage to cultural sites from falling hazard trees
   Probability: Possible Magnitude: Moderate Risk: **Intermediate**

B. **Emergency Treatment Objectives:** Protection/Safety: Risks to Forest users from hazard trees will be mitigated with safety closures and warning signs along 2 roads.
The BAER risk assessment shows a high risk to Human Life and Safety in the Rosasco fire, and administrative closures are proposed. For other critical values, the risk assessment has not identified a need for treatments to protect property, natural resources, or cultural and heritage resources because risk levels were low or intermediate.

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

Land Not applicable	**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	NA		
Channel	NA		

	1 year after treatment	*3 years after treatment*	*5 years after treatment*
Roads/Trails	NA		
Protection/Safety	90	90	90

E. Cost of No-Action (Including Loss): NA – Human Life value

F. Cost of Selected Alternative (Including Loss): $0.00

G. Skills Represented on Burned-Area Survey Team:

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

Team Leader:
Email:curtis.kvamme@usda.gov **Phone(s)209-288-6320**

Forest BAER Coordinator:
Email:curtis.kvamme@usda.gov **Phone(s):209-288-6320**

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

Skill	**Team Member Name**
Team Lead(s)	Curtis Kvamme
Soils	CK
Hydrology	Zachary Croyle
Engineering	
GIS	
Archaeology	James Moak
Weeds	
Recreation	
Other	

H. Treatment Narrative:

Land Treatments: No treatments proposed.

Channel Treatments: No treatments proposed.

Roads and Trail Treatments: No treatments proposed.

Protection/Safety Treatments: A forest order is proposed to administratively close Forest Routes 2N66 and 3N01G, for a maximum of 1 year. Most of the imminent hazards are expected to fall through the fall and winter months; the hazard condition will be reassessed in the spring and the roads re-opened if primary hazards have fallen naturally. Road Closed signs will be posted at the road intersections with 3N01, and an existing gate will be shut and locked on 2N66. No funding is requested; the Forest has 2 signs plus materials in a local BAER cache that can be used to post the closure.

I. Monitoring Narrative: No monitoring of treatment is proposed.

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	$	$
A. Land Treatments										
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Land Treatments				$0	$0		$0		$0	$0
B. Channel Treatments										
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Channel Treatments				$0	$0		$0		$0	$0
C. Road and Trails										
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Road and Trails				$0	$0		$0		$0	$0
D. Protection/Safety										
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Protection/Safety				$0	$0		$0		$0	$0
E. BAER Evaluation										
Initial Assessment	Report			---	$2,300		$0		$0	$2,300
				$0	$0		$0		$0	$0
Insert new items above this line!				---	$0		$0		$0	$0
Subtotal Evaluation				$0	$2,300		$0		$0	$2,300
F. Monitoring										
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Monitoring				$0	$0		$0		$0	$0
G. Totals				$0	$2,300		**$0**		**$0**	**$2,300**
Previously approved										
Total for this request				**$0**						

PART VII - APPROVALS

1. Brett Mattes, Deputy FS 9/27/19
For: Forest Supervisor Date