Date of Report: August 28, 2020

BURNED-AREA REPORT

PART I - TYPE OF REQUEST

A. Type of Report

☒ 1. Funding request for estimated emergency stabilization funds

☐ 2. No Treatment Recommendation

B. Type of Action

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

☐ 2. Interim Request #___

☐ Updating the initial funding request based on more accurate site data or design analysis

PART II - BURNED-AREA DESCRIPTION

A. Fire Name: Beach

B. Fire Number: CA-INF-002140

C. State: CA

D. County: Mono

E. Region: Pacific Southwest

F. Forest: Inyo

G. District: Mono Lake

H. Fire Incident Job Code: P5NFR120

I. Date Fire Started: Aug. 16,2020

J. Date Fire Contained: August 27,2020

K. Suppression Cost: 3 million

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

1. Fireline repaired (miles):

Completed Dozer Line	3
Completed Hand Line	

2. Other (identify):

Road	
Fence Damage	
Stream Crossing	

M. Watershed Numbers:

Table 1: Acres Burned by Watershed

HUC #	Watershed Name	Total Acres	Acres Burned	% of Watershed Burned
18091010205	Little Sand Flat/Frontal Mono Lake	3700	3700	100

HUC #	Watershed Name	Total Acres	Acres Burned	% of Watershed Burned

N. Total Acres Burned:

Table 2: Total Acres Burned by Ownership

OWNERSHIP	ACRES
NFS	3664
NON-FEDERAL	36
TOTAL	3700

O. Vegetation Types: Bitter brush, sage brush, Rabbit brush

P. Dominant Soils: Brantel and Lakash; somewhat excessively drained; Hydrologic soil group "A"

Q. Geologic Types: Ash,Tuff and pumice from Holocene volcanic activity.

R. Miles of Stream Channels by Order or Class:

Table 3: Miles of Stream Channels by Order or Class

STREAM TYPE	MILES
PERENNIAL	
INTERMITTENT	2.36
EPHEMERAL	
OTHER	
(DEFINE)	

S. Transportation System:

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

Roads: *National Forest (miles):* 22.82 *Other (miles):* 5.85

PART III - WATERSHED CONDITION

A. Burn Severity (acres):

Soil Burn Severity - Land Ownership in Fire - Acres	Unburned-Very Low	Low	Moderate	High	Total Land Acres in Fire
City of Los Angeles	0	0	36	0	36
U.S. Forest	291	787	2586	0	3664

Service					
Total - All	291	787	2622	0	3700

C. **Water-Repellent Soil (acres):** Found underneath brush canopy,

D. **Soil Erosion Hazard Rating:**
Percent of fire area: Slight: 100%

E. **Erosion Potential:**
N/A, Wind erosion present and will continue for several years until vegetation re-establishment.

F. **Sediment Potential:**
Highly localized runoff expected. Likely ash and sediment in Mono Lake from wind erosion, not likely from water runoff.

F. **Estimated Vegetative Recovery Period: (years)**
Past burns in the area indicate that rabbitbrush and annual forbs and re-establish first in this area. This area contains very sandy, pumice soils that are somewhat excessively drained and have a low water holding capacity. Sage brush and bitterbrush are found scattered in older burn scars. Areas of moderate severity are likely to recover slower than low severity areas. There are few islands of unburned within the fire footprint so re-colonization from existing vegetation within the interior of the fire is likely to be slow.

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

1. Estimated Erosion Response/Post-fire soil hydrologic response
Wind erosion, gentle terrain, highly permeable soils, little to no runoff is expected. Highly localized.

2. Watershed Response

Annual precipitation ranges between 9-12 inches, primarily arriving between November and March although summer thundershowers are common in August and early fall. This area is located above 6,000 ft, which may result in precipitation accumulating more as snow versus rain during winter. Snow accumulation versus rainfall affects the magnitude of post-fire watershed response, slowing runoff and favoring infiltration. It is important to note, however, that rain-on- snow events do occur in this area.

Because of the high amount of missing vegetation and lack of ground cover soils are very exposed and open. Combined with relatively dry climate and mineral soil component slower vegetative recovery is expected. Soil erosion from high winds will likely be increased until vegetative recovery occurs. Primary threat and concern is OHV trespass into the open sandy soil areas within the fire, as the surrounding areas adjacent to the fire have high OHV recreation use. If OHV trespass occurs it may establish a set of unauthorized, off designated route use trails that has the potential to exponentially expand and would slow or adversely impact soil productivity and vegetative recovery within the fire area. Flooding, debris flows are unlikely because of the fire and values on the fire (roads, recreation sites and trails) are not at risk. There are no perennial streams/water quality that can be affected by the fire, and much of the Mono Lake shoreline was not burned and has stabilizing vegetation in place. There are little to no concerns for the water quality or aquatic habitat for Mono Lake.

Damaging Storms: Although not the only types of storms that could occur, two common storm types that could cause significant damage within the burn area are monsoonal thunderstorms and storms related to atmospheric rivers. Short duration, high intensity storms (such as a monsoonal thundershowers) frequently trigger debris flows. The second storm type is a long duration storm, commonly linked to atmospheric rivers. These types of storms are less common in the Eastern Sierra, they do, however, occur occasionally.

Hydrologic Processes:

Water Quality: *Mono Lake*: Wildfires primarily affect water quality through increased sedimentation. As a result, the primary water quality constituents or characteristics affected by this fire include color, sediment, suspended material, and turbidity. Floods and debris flows can entrain large material, which can physically damage infrastructure associated with beneficial uses of water (e.g., water conveyance structures; hydropower structures; transportation networks). The loss of riparian shading and the sedimentation of channels by floods and debris flows may increase stream temperature. Fire-induced increases in mass wasting along with extensive vegetation mortality can result in increases in floatable material such as large woody debris. Post-fire delivery of organic debris to stream channels can potentially decrease dissolved oxygen concentrations in streams. Fire-derived ash inputs can increase pH, alkalinity, conductivity, and nutrient flux (e.g. ammonium, nitrate, phosphate, and potassium), although these changes are generally short lived.

3. Geology/Geologic Response

None expected

PART V - SUMMARY OF ANALYSIS

Introduction/Background:
The Beach Fire started on August 16, 2020 near Mono Lake. The fire grew quickly, driven by the low moisture content of the vegetation in the area combined with high temperatures and low relative humidity. Land ownership within the fire area is National Forest with a small amount of state relicted lands surrounding Mono Lake. The fire is 100% contained as of August 27, 2020.

The area is characterized by gentle, sandy, pumice terrain with no surface water or drainages.

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

Table 7: 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):
N/A

2. Property (P): Roads and Trails:
Overview
The National Forest transportation system consists of approximately 31 miles of National Forest System Roads (NFSR) within the fire perimeter. All these roads are suitable for high-clearance vehicles and 4x4 vehicles given the loose sand and pumice in the area (level 2) The majority of the NFS Roads throughout the burned area will be impacted by wind erosion

and drifting sand likely covering sections of the roads. The roads are not likely to be are impacted by runoff, sediment, and debris derived from burned areas.

Risk Assessment
National Forest System roads were assessed in order to determine the probability and magnitude of road damage or loss as a result of the changed watershed condition. User safety on roads in the burned area is also an equally important consideration.

Probability: unlikely; Magnitude: Moderate, Risk: Low

Treatments not recommended for Roads other than blocking to enforce the closure.

b. State Land (Relicted): Mono Lake Tufa State Natural Reserve: The fire burned in, around, and adjacent to the Mono Lake Tufa State Natural Reserve:

3. Natural Resources (NR):Water Quality for Municipal and Domestic Use: N/A

b. Hydrologic Function: N/A

c. Soil Productivity:
Soil productivity loss from wind erosion will be higher than loss from water erosion. Dunes are already forming in the fire area.

Risk Assessment: Probability: Likely: High winds are and will continue to move ash and topsoil in and around the fire area. **Magnitude: Minor:** Loss of surface soil could reduce productivity or delay recovery of pre-fire vegetation types. **Risk: Low**

Treatments are not recommended for Soil Productivity other than OHV treatments.

d. Botanical Resources:
The area has a low risk of being invaded by invasive species of high-priority for management as the soils are very pumiceous and dry and not likely to support establishment of species such as tamarisk, perennial pepperweed, etc, which need more moisture. There are no known high priority invasive plant infestation in the fire area. Roadsides could see some spreading of russian thistle and sweetclover, but this is likely limited to areas with existing infestation (which is currently not treated) along the entrance road to the state park Tufa Reserve.
The biggest risk seems to be intrusion by OHV users due to the lack of vegetative screening along dirt roads.

Risk Assessment: *Probability: Possibly. Magnitude: Minor.* **Risk: Low**

Treatments are not recommended under the BAER program other than OHV treatments

Threats to Natural and Cultural Resouces

Off Highway Vehicles (OHV's) are a threat to natural recovery from invasion if noxious weed spreading into the fire area, reduction in soil productivity, and damage to heritage sites from Off-Highway Vehicle incursion.

OHV's can cause erosion, compaction and alter hydrologic function which precludes or reduces vegetation re-establishment after a fire. OHV's can act as a vector for invasive species introduction

when seeds are attached to tires and deposited on bare ground. Heritage resources can be negatively affected by OHV's through mechanical disturbance in the site.

Vegetative recovery, soil productive and heritage resource sites are at risk from OHV incursion along several areas within the fire. Unauthorized routes in and around the fire areas have a threat to increase OHV trespass into open areas created by the fire that may lead to soil impacts and hinder vegetative recovery. There are unique resources associated with Mono Lake Tufa that could be impacted by Off Highway Vehicle traffic. The natural vegetation and several barriers burned on these roads. Currently, the fire is closed to public use, several physical barricades burned, with several still in place though they are easy to drive around now.

The area of greatest incursion risk burned at low and moderate soil burn severity, with all the vegetation consumed and low gradient, with few large rocks, making it easily traversed by an OHV.

4. **Cultural and Heritage Resources:**Critical values for Cultural Resources under a Burned Area Emergency Response assessment are defined as Cultural resources which are listed on or potentially eligible for the National Register of Historic Places (NRHP), Traditional Cultural Properties, or Indian Sacred Sites on National Forest System (NFS) lands (FSM 2353, June 2020).

Cultural Resources are not expected to be impacted by post-fire processes. *No treatments are proposed other than OHV incursion prevention.*

B. Emergency Treatment Objectives:

- Limit loss of soil productivity and provide for natural vegetative recovery
- Road and trail treatments to protect investment in infrastructure and limit post-fire watershed response

C. Probability of Completing Treatment Prior to Damaging Storm or Event:
Land: N/A
Channel: N/A
Roads/Trails: N/A%
Protection/Safety: 90%

D. Probability of Treatment Success

Table 8: Probability of Treatment Success

	1 year after treatment	*3 years after treatment*	*5 years after treatment*
Land	n/a	n/a	n/a
Channel	n/a	n/a	n/a
Roads/Trails	n/a	n/a	n/a
Protection/Safety	90	90	100

E. Cost of No-Action (Including Loss): Using VAR Lite cost/benefit tool: Non-market resources do not have a monetary value assigned them. Without treatment there will be impacts to soil productivity, potential to spread weeds and invasive plant through vehicles vectors, and potential impacts to native plant recovery. Potential longer period with dust impacts to visitors around mono lake and Hwy. 120.

F. Cost of Selected Alternative (Including Loss): Using VAR Lite cost/benefit tool: Non-market resources do not have a monetary value assigned to them. Treatment will allow the area to recovery quickly, reduce the risk of weeds spreading. Faster native vegetation recovery reducing risk of wind erosion and dust

Skills Represented on Burned-Area Survey Team:

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

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Forest BAER Coordinator: Todd Ellsworth
Email: Todd.ellsworth@usda.gov **Phone(s):** (760) 937-2033

Team Members: *Table 9: BAER Team Members by Skill*

Skill	Team Member Name
Team Lead(s)	Todd Ellsworth
Soils	Todd Ellsworth
Hydrology	Casey Shannon
Engineering	
GIS	
Archaeology	Ashley Blythe-Haverstock
Weeds	Blake Engelhardt
Recreation	
Other	

G. Treatment Narrative:

Land Treatments: None

Channel Treatments: None

Roads and Trail Treatments: None

Protection/Safety Treatment

P1- OHV Barricade Installation: Install carsonite signs and physical barricades at entry points to unauthorized routes off Forest roads 0N152, 0N151, 0N160 where previous barricades were burned and trails are now exposed, and at entry points to fire on Forest system routes (9 points) that will be under a Forest Order for a one year closure. The Forest proposes placing 6x6 treated wood barricades built extra strong (braced framework) with carsonite closure signs at the entry points. Similar to the one in the picture below. The open areas within the fire are vulnerable to OHV trespass and soil disturbance. The BAER Team considers this treatment to be the minimum necessary to achieve a reduction in risk to critical values and is less expensive and intrusive than installing fencing. In addition to barricades and signs, one heavily used unauthorized route will require ½ mile of subsoiling work by backhoe to ensure effective closure and soil rehabilitation to expedite vegetative recovery.

OHV Barricade Installation				
Item	Unit	Unit Cost	# of Units	Cost
2 GS-9 Tech's includes OT	Day	$750	10	$7500
Heritage Clearance	Day	$375	3	$1125

Supplies (Barricade)	Each	$200	23	$4600
Carsonite Signs and labels	Each	$25	15	$375
Vehicle Gas Mileage	Miles	$0.50	600	$300
Total				$13,900

CL1 - Closure signs and additional Patrol: The Forest has issued a closure order within the Beach Fire. The Forest plans on extending that order and the risks associated with the burn scar reevaluated prior to lifting the closure. Place closure signs along approximately 1 mile of exposed sections of Forest roads 0N151 and 0N152 which lead to high demand and popular tourist destinations at Mono Lake, the South Tufa and Navy Beach interpretive sites. The areas along these sections of road experienced complete burning of protective vegetation and cover during the fire and are now vulnerable to OHV trespass and access into the fire area. The signs will be spaced along the length of the roads in these areas to discourage OHV trespass. At the entry to South Tufa road 0N151 an additional public information sign will be placed with language describing the need to stay on roads in the fire and closure. The remaining roads within the fire area will be under a Forest closure Order for a year. Additional patrols are needed to ensure the closure is enforced and inform the public as to why the closure is needed. The purchase and installation of signs at each of the identified locations will be consistent with Forest Engineering Standards at these locations The BAER Team considers this treatment to be the minimum necessary to achieve a reduction in risk to critical values and is less expensive and intrusive than installing fencing.

Closure Signs and Patrol				
Item	Unit	Unit Cost	# of Units	Cost
1 GS-7 Patrol	Day	$350	10	$3500
2 GS-7 Sign Installation includes OT	Day	$750	4	$3000
Signs/Supplies on Roads	Each	$175	10	$1750
Carsonite	Each	$25	20	$500
Vehicle Gas Mileage	Miles	$0.50	600	$300
			Total	$9050

I. Monitoring Narrative:

Treatment Effectiveness Monitoring

Effectiveness Monitoring: Monitoring the effectiveness of the other BAER treatments (as described above) will be used to determine if additional treatments are needed.

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
				$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										
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
				$0	$0		$0		$0	$0
				$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										
1) OHV barriers	Lump	13,900	1	$13,900	$0		$0		$0	$13,900
2) Area Closure	Lump	9,050	1	$9,050	$0		$0		$0	$9,050
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Protection/Safety				$22,950	$0		$0		$0	$22,950
E. BAER Evaluation										
Initial Assessment	Report	$6,000		---	$0		$0		$0	$0
Insert new items above this line!				---	$0		$0		$0	$0
Subtotal Evaluation				$0	$0		$0		$0	$0
F. Monitoring										
				$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				$22,950	$0		$0		$0	$22,950
Previously approved										
Total for this request				$22,950						

PART VII - APPROVALS

1. _____ 9-9-2020

Forest Supervisor Date