

Date of Report: 07/25/2021**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:** Dexter Fire**B. Fire Number:** CA-INF-001695**C. State:** California**D. County:** Mono**E. Region:** 05**F. Forest:** Inyo**G. District:** Mono Lake Ranger District**H. Fire Incident Job Code:** P5N5PV-0504**I. Date Fire Started:** July 16, 2021**J. Date Fire Contained:** July 27, 2021**K. Suppression Cost:** \$6,000,000**L. Fire Suppression Damages Repaired with Suppression Funds (estimates):**

- 1. Fireline repaired (miles):** 4.4 miles Handline, 5.0 miles Dozer Line.
- 2. Other (identify):** Various Safety Zones, Drop Points, Sand flats, and Road Pullout's rehabbed.

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

HUC #	Watershed Name	Total Acres	Acres Burned	% of Watershed Burned
180901010203	Dry Creek	11,700	705	6
180901010605	Adobe Creek	22,944	402	2
180901020203	McLaughlin-Owens River	25,157	1778	7
180901010205	Little Sand Flat-Frontal Mono Lake	28,978	75	0.3

N. Total Acres Burned:*Table 2: Total Acres Burned by Ownership*

OWNERSHIP	ACRES
NFS	2,960
OTHER FEDERAL (LIST AGENCY AND ACRES)	0
STATE	0

OWNERSHIP	ACRES
PRIVATE	0
TOTAL	2,960

- O. Vegetation Types:** Jeffrey Pine/Lodgepole Pine, Sage/bitterbrush, Aspen
- P. Dominant Soils:** Main Soil Types: Vitradic Xerorthents, Vitrandic Xeropsamments, Vitrandic Cryorthents, Haypress Family
- Q. Geologic Types:** Main Geologic Map Units) Qbt – Bishop Tuff, Tba – Balsalt and Andesite; Qp – Pyroclastic deposits.
- R. Miles of Stream Channels by Order or Class:**

Table 3: Miles of Stream Channels by Order or Class

STREAM TYPE	MILES OF STREAM
PERENNIAL	0.8
INTERMITTENT	4
EPHEMERAL	0.6
OTHER (DEFINE)	

S. Transportation System:

Trails: National Forest (miles):

Other (miles):

Roads: National Forest (miles): 15

Other (miles): 2.5 unauthorized

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	487 (16%)				487	100
Low	993 (34%)				993	100
Moderate	1248 (42%)				1248	100
High	232 (8%)				232	100
Total	2,960				2,960	100

B. Water-Repellent Soil (acres): 1050 (fire induced)

C. Soil Erosion Hazard Rating: Low: 1432 (48%) Moderate: 1100 (37%) High: 428 (15%)

D. Erosion Potential: 1.4 tons per acre. **Sediment Potential:** 1,655 (Cubic Yards / Square Mile).

F. Estimated Vegetative Recovery Period (years): 3 to 5 years. Areas of moderate and high 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. Conifers that burned may take an indefinite period to recover. Burned Aspen will resprout quickly.

G. Estimated Hydrologic Response (brief description): The Dexter Fire burned with mixed severity, with roughly 50% of the fire either unburned or burning at a low severity. The rest of the fire burned with a moderate and high severity, with roughly 42% burning with a moderate severity and 8% burning with a high severity (**Table 1**).

Table 1: Soil Burn Severity

Fire	Total Acres	Unburned Acres	Low Severity Acres	Moderate Severity Acres	High Severity Acres
Dexter Fire	2,960	487 (16%)	993 (34%)	1248 (42%)	232 (8%)

Dexter Fire BAER																	
**Design Flow for 5 year storm (South Lahontan/Colorado Desert Region)																	
		Pre-Fire Peak Flow in cubic feet per second (cfs)				Soil Burn Severity (acres)				In Cubic Feet per Second (cfs)							
Pour Point (PP) Analysis Watersheds	Drainage Acres	Drainage Area (mi ²)	Q2	Q5	Q10	Q25	Unburned	Low	Moderate	High	Pre fire Q5	Q from unburned	Q from low	Q from moderate	Q from High	Post fire Total Q5	Change in Q5 Flow
Confluence of McLaughlin Creek and Owens River	6470	10.11	56	160	280	494	4899	334	1029	208	160	121.0	8.2	44.5	15.9	190	19
<p>From: Methods for Determining Magnitude and Frequency of Floods in California, Based on Data through Water Year 2006</p> <p>By Anthony J. Gotvald, Nancy A. Barth, Andrea G. Veilleux, and Charles Parrett; 2012</p> <p>*Change in flow is the increase in flow resulting from the reduction in soil infiltration after a fire based on a paper by Terry Henry.</p> <p>Acres of unburned and low soil burn severity are modeled at Q5, acres of moderate soil burn severity are modeled at Q10 and acres of high soil are modeled at Q25. A weighted average is then calculated to arrive at post fire Q5.</p> <p>**Spreadsheet prepared by Michael Wiese, US Forest Service</p>																	

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stability, canopy cover, ground cover and infiltration rates. Before the fire, most of the forest areas had protective ground cover in the form of litter, duff or ground vegetation. Shrub dominated areas had ground cover mainly within the “dripline” of the shrubs, with bare ground between the shrubs and grasses. In areas of moderate and high burn severity, it is highly likely that increased rates of soil erosion and sediment delivery to stream channels will occur, for two or three years after the fire, particularly on steep slopes that contained shrubs and are slow to recover. Many of the moderate burn severity areas in Jeffrey Pine stands will have large amounts of needle cast this fall which will help mitigate post-fire erosion.

Pre-fire slope stability and recovery of watershed hydrologic response is dependent on many factors and typically occurs within 3-5 years following the fire. Recovery of high burn severity areas is generally slower because little or no ground cover remains, the potential for needle cast is low and soils may be impacted by fire effects. High burn severity in riparian areas (small areas within Clark Canyon) should recover faster than hillslopes given the higher water table and the ability of riparian vegetation to rapidly resprout

Geologic Response:

Debris flow hazards were considered and determined not to be a hazard in the Dexter fire area. The reasons debris flows are not expected to be a hazard is geology and topography of the fire area is not prone to debris flows even in areas of moderate to high soil burn severity. In addition, if debris flows do occur there are no critical values at risk that debris flows could cause damage or injury.

Dry Ravel: Limited dry ravel is expected from cut slopes on roads 02S251 and potentially other roads within the fire area.

PART V - SUMMARY OF ANALYSIS

Introduction/Background

The Dexter Fire started on July 12, 2021, ignited by lightning activity in the Glass Mountain range above the Owens River. The fire was driven by wind and dry fuels pushing east and north toward Crooked Meadows. Areas to the West and north are surrounded by recent fires including the 2018 Springs fire and the 2016 Clark Fire. The area is characterized by mostly rolling hills derived from Bishop Tuff and basalt and andesitic rocks up to 9000 feet elevation. Few drainages exist within the northern part of the fire area. The southern part of the fire drains steeply towards the Owens River. The northwestern part of the fire burned into Crooked Meadows. The fire was contained July 27, 2021.

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):

National Forest Roads: There are approximately 3.8 miles of NFS route that are through moderate and high burn severity. Monsoon storms could wash ash, sediment and debris on the roads making some of them temporarily impassable. There is a steeper, .5 miles, section of 1S04 as it traverses through moderate and high burn severity areas. Due to expected increases in runoff caused by the moderate and high burn severity, this section of road has the potential to be damaged from flooding and excessive erosion causing impacts forest visitor and Forest personnel utilizing this road. This area is located above 8,000 ft. which results in precipitation accumulating more as snow versus rain during winter. This can increase infiltration and lessen runoff. Though rainfall in the early fall is also likely.

People and Forest personnel could get caught on the road during a rainfall event and could be at risk of getting temporarily stuck or stranded. We already observed localized rilling on several roads due the recent thunderstorm activity. **No treatment Recommended.**

Probability of Damage or Loss: **Possible**
Magnitude of Consequences: **Moderate**
Risk level: Intermediate

2. **Property (P):**National Forest Roads: There are approximately 3.8 miles of NFS route that are through moderate and high burn severity. There is a steeper .5 miles section of 1S04 as it traverses through moderate and high burn severity areas. Due to expected increases in runoff caused by the moderate and high burn severity, this section of road has the potential to be damaged from flooding and excessive erosion. We already observed localized rilling on several roads due the recent thunderstorm activity. **No treatment recommended** though we do recognize localized rilling with ash and debris on the road is likely.

Probability of Damage or Loss: **Possible**
Magnitude of Consequences: **moderate**
Risk level: Intermediate

3. **Natural Resources (NR):Hydrologic Function:** Crooked meadow. A Meadow stabilization structure slightly burned in Crooked meadow. Much of the watershed above the meadow burned at low severity. Additional sediment will likely assist in meadow recovery. **No Treatment Recommended.**

Probability of Damage or Loss: **Unlikely**
Magnitude of Consequences: **moderate**
Risk level: Low

Water Quality for Municipal and Domestic Use: Temporary and moderate episodes of turbidity adversely effecting water quality from ash and fine sediment during heavy rain events, particularly during the first-year post-fire may temporarily impact the Owens River.

Probability of damage or loss: **Possible**
Magnitude of Consequences: **Moderate**
Risk Level: Intermediate
Noxious and Invasive weeds:

Botanical Resources: Botanical survey data is minimal in the area impacted by the Dexter Fire. The fire overlaps three botanical surveys: 2009, 2010, and 2017. These surveys cover less than 1% of the total area impacted by the Dexter Fire.

Populations of three invasive plant species have been mapped within 1.5 miles of the fire perimeter: Herb Sophia/*Descurainia Sophia*, downy brome/*Bromus tectorum* and prickly Russian thistle/*Salsola tragus*. Downy brome is particularly problematic as it can change fuels loads and fire return intervals.

Table xxx. Dexter Fire - Linear Soil Disturbance

Type of soil disturbance	Miles
Existing vehicle routes	13.9
Dozer line	5.0
Hand line	4.4
Total	23.3

Linear disturbance such as fire lines and cleared roadsides provide an ideal setting for establishment and spread of invasive plant species. It is unknown and considered unlikely that resources and equipment were washed (for control of invasive plant propagules) prior to arriving and working on the fire, due to the rapid spread and need for immediate response to protect values at risk. Dispersal of invasive plant propagules from and by fire equipment and crews poses a significant threat to recovering burned landscapes.

Emergency Determination:

Probability of damage or loss: Likely

Magnitude of Consequences: Moderate

Risk Level: High

4. **Cultural and Heritage Resources:** Piagi trenches: Piagi rings used traditionally used to collect Piagi (Pandora Moth Larvae) are around many old growth Jeffrey Pine Trees. The Mono Lake Kutzadika's (Northern Paiute) collected Piagi beginning in late June to early July. Each family would dig and clean pre-existing trenches around the base of numerous large Jeffrey Pine trees in family gather areas. The trenches had vertical or back-cut walls to prevent the caterpillars from getting out. The trenches would be checked several times a day with trapped caterpillars collected.

These are culturally important features that could be impacted by post-fire runoff. Approximately 10 trees are in and below High and moderate severity areas adjacent to steep slopes. Post-fire runoff and erosion can negatively impact these features. Other Cultural Resources are not expected to be impacted by post-fire processes.

Probability of damage or loss: **Likely**

Magnitude of Consequences: **Moderate**

Risk Level: High



Photo 1: Piagi Trench around old growth Jeffrey Pine.

Threats to Critical Natural and Cultural Resources

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.

Five (5) previously blocked and disguised unauthorized routes were impacted by the fire. The Fire burned the blocks and vegetation used to disguise the route. These areas are most susceptible to OHV use after the fire. The natural vegetative recovery and barriers on these roads burned. Currently, there are no closure signs or physical barricades in place to advise the public from using these trails.

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 a heritage resource site 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.

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

Probability of damage or loss: **Likely**

Magnitude of Consequences: **Moderate**

Risk Level: High



Photo 2: Unauthorized Route that burned and is susceptible to traffic.

B. Emergency Treatment Objectives: Implement protection around Piagi st.

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

Land: 80%
Roads/Trails: %

Channel: N/A
Protection/Safety 90%

D. Probability of Treatment Success

Table 6: Probability of Treatment Success

	1 year after treatment	3 years after treatment	5 years after treatment
Land	90	90	100
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): Higher likelihood of noxious/invasive weeds, OHV incursion and impacts to traditional cultural properties

F. Cost of Selected Alternative (Including Loss): \$10,282 Treatment costs, \$18,186 implied minimum value of treatment. Using VAR lite tool **Skills Represented on Burned-Area Survey Team:**

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

Team Leader: Todd Ellsworth

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Forest BAER Coordinator: Todd J. Ellsworth

Email: todd.ellsworth@usda.gov

Phone(s): mobile: 760-920-5648

Team Members: Table 7: BAER Team Members by Skill

Skill	Team Member Name
<i>Team Lead(s)</i>	Todd Ellsworth
<i>Soils</i>	Todd Ellsworth
<i>Hydrology</i>	Michael Wiese,
<i>Engineering</i>	
<i>GIS</i>	Michael Wiese
<i>Archaeology</i>	Jacqueline Beidl
<i>Weeds</i>	Rick McNeill, Blake Englehart
<i>Recreation</i>	
<i>Other</i>	

G. Treatment Narrative: **Land Treatments:**

L1: Weed survey and Rapid Response - Related to Suppression resources: Priority areas will be surveyed and treated in spring and summer of 2022 when plants are detectable but early enough to treat effectively (prior to maturation and dispersal of seed). There are approximately 23.3 miles of fire line and vehicle routes on national forest lands to be surveyed. Several dozen point locations (safety zone, camp, dozer push, etc.) will also be surveyed. Infestations will be inventoried to NRIS standards, 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. All treatments, including herbicide if needed, will be conducted in accordance with approved methods on each forest, e.g. the Forest-Wide Invasive Plant Treatment Project Environmental Assessment (INF 2019). Herbicide would be used only where manual or mechanical methods are not effective or feasible.

Note: Staff involved with Implementation will use funding for regular hours along with Overtime hours, based on FY 2021 budget direction, they will not be fully funded by NSFE in FY 2022.

L1. Weed Surveys and Rapid Response Costs – Related to Suppression resources.				
Item	Unit	Unit Cost	# of Units	Cost
1 GS-11 Botanist	Day	\$475	3	\$1,425
1 GS -9 Assistant Forest Botanist	Day	\$350	8	\$2,800
1 GS-7 Temp. Plant Technician	Day	\$225	8	\$1,800
Supplies(bags, gloves, flagging, etc.)	Each	\$500	1	\$500
Vehicle Mileage	Miles			Covered
Total				\$6,525

L2:Piagi trench protection: Place fiber rolls (straw wattles) upslope of 8-10 Jeffrey Pine with Piagi Trenches to protect them from post-fire rilling. Approximately 2 fiber rolls are needed per tree.

Note: Staff involved with Implementation will use funding for regular hours along with Overtime hours, based on FY 2021 budget direction, they are not currently fully funded and will not be fully funded by NSFE in FY 2022.

L2. Piagi trench protection				
Item	Unit	Unit Cost	# of Units	Cost
1 GS-9 Hydro. Tech	Day	\$380	2	\$720
1 GS-9 Heritage specialist	Each	\$350	2	\$700
Erosion control supplies	Each	\$1,200	1	\$1,200
Vehicle Mileage				Covered
Total				\$2,620

Road and Trail Treatments N/A

Protection/Safety Treatments:

P1. Unauthorized Road disguising and block replacement: Replace block (1) and reapply mulch to disguise approximately eight (5) unauthorized roads. Strategic placement of carsonsite closed area signs will help keep motorized traffic on system routes.

Note: Staff involved with Implementation will use funding for regular hours along with Overtime hours because they were not fully funded by NSFE for FY 2021. will not be fully funded by NSFE in FY 2022.

P1. Unauthorized road disguising, barriers and Carsonite signs				
Item	Unit	Unit Cost	# of Units	Cost
1 GS-9 Hydro. Tech	Days	\$380	2	\$760
1 GS-7 OHV Tech	Days	\$250	2	\$500
Carsonsite closed area signs	Each	\$30	5	\$150
Vehicle Mileage				Covered
Total Cost				\$1,410

H. Monitoring Narrative:

M1. Unauthorized route closer Treatment Effectiveness Monitoring: Monitoring the effectiveness of the unauthorized route BAER treatments (as described above) will be used to determine if additional treatments are needed and to ensure closure effectiveness.

Note: Staff involved with Implementation will use funding for regular hours along with Overtime hours because they were not fully funded by NFSE for FY 2021

M1. Trail Closure and Treatment Effectiveness Monitoring				
Item	Unit	Unit Cost	# of Units	Cost
1 GS-9 Hydro. Tech	Day	\$380	2	\$760
Vehicle Mileage				Covered
Total Cost				\$760

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										
Weeds EDRR - Suppression	Each	6,252	1	\$6,525	\$0		\$0		\$0	\$6,525
Piagi Trench protection	Each	262	10	\$2,620	\$0		\$0		\$0	\$2,620
Insert new items above this line!				\$9,145	\$0		\$0		\$0	\$8,892
Subtotal Land Treatments										
B. Channel 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 Channel Treatments										
C. Road and Trails					\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
Insert new items above this line!				\$0	\$0		\$0		\$0	\$0
Subtotal Road and Trails										
D. Protection/Safety				\$0	\$0		\$0		\$0	\$0
Unauthorized roads	Each	282	5	\$1,410						\$1,410
				\$0	\$0		\$0		\$0	
Insert new items above this line!				\$1,410	\$0		\$0		\$0	\$1,410
Subtotal Protection/Safety										
E. BAER Evaluation					\$0		\$0		\$0	
Initial Assessment	each	\$5,000	1	\$5,000	\$0		\$0		\$0	\$0
				---	\$0		\$0		\$0	\$0
Insert new items above this line!				\$0	\$0		\$0		\$0	\$0
Subtotal Evaluation										
F. Monitoring										
				\$760	\$0		\$0		\$0	\$760
Insert new items above this line!				\$760	\$0		\$0		\$0	\$760
Subtotal Monitoring										
				\$11,315	\$0		\$0		\$0	\$11,062
G. Totals										
Total for this request				\$11,315						

PART VII - APPROVALS

1. _____
 Forest Supervisor Date