

Date of Report: 09/22/2019

BURNED-AREA REPORT
(Reference FSH 2509.13)**PART I - TYPE OF REQUEST****A. Type of Report**

- ☒ 1. Funding request for estimated emergency stabilization funds
☐ 2. Accomplishment Report
☐ 3. No Treatment Recommendation

B. Type of Action

- ☐ 1. Initial Request (Best estimate of funds needed to complete eligible stabilization measures)
☒ 2. Interim Report # 1.
 ☐ 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:** Meadow Creek**B. Fire Number:** UT-SCS-190412**C. State:** Utah**D. County:** Millard**E. Region:** 4**F. Forest:** Fishlake National Forest**G. District:** Fillmore**H. Fire Incident Job Code:** PNMR2L19 (1520)**I. Date Fire Started:** September 8, 2019**J. Date Fire Contained:** September 12, 2019**K. Suppression Cost:** \$4,061,858 as of September 16, 2019.**L. Fire Suppression Damages Repaired with Suppression Funds**

1. Fireline waterbarred (miles): 3.1 miles
2. Fireline seeded (miles): 1.0 miles
3. Other (identify):

M. Watershed Number: 160300051307 Pine Creek (694 acres burned 1.8% / 543 FS / 151 Other), 160300051305 Meadow Creek (2,555 acres burned 16.5% / 1,148 FS / 1407 Other), 160300051304 Sunset Canyon (560 acres burned 1.9%) (HUC6)

N. Total Acres Burned: 4,231 Acres (final fire perimeter) 1,890 National Forest System (45%)

O. Vegetation Types: Mountain Big Sage/Perennial Grasses (470 acres), Curleaf Mountain Mahogany (236 acres), Mixed Conifer (212 acres), Pinyon-Juniper (117 acres), Gamble Oak (113 acres), Gamble Oak/Mountain Big Sagebrush (461 acres), Riparian (31 acres).

P. Dominant Soils:

156 (113 ac) Loamy-skeletal, mixed Argic Cryoborolls (mountainbrush)
 160 (236 ac) Loamy-skeletal, mixed Argic Lithic Cryoborolls (mountainbrush)
 175 (31 ac) Fine loamy, mixed, frigid Cumulic Haploxerolls (riparian/drainageways)
 177 (212 ac) Loamy-skeletal, mixed, Mollic Cryoborolls (mixed conifer/ seral aspen)
 183 (250 ac) Loamy-skeletal, mixed, frigid Lithic Argixerolls (stable PJ)
 221 (447 ac) Clayey-skeletal, montmorillonitic, frigid Lithic Argixerolls (sage/mountainbrush on fans)
 222 (601 ac) Clayey-skeletal, montmorillonitic, frigid Lithic Argixerolls (sage/mountainbrush on hillsides)

Q. Geologic Types: Qa-Alluvium and Colluvium; Jg-Glen Canyon Group & Nugget Sandstone; Tr1-Moenkopi, Dinwoody, Woodside, and Thayne; P2-Park City; and C1-Tintic Quartzite.

R. Miles of Stream Channels: Perennial – 0.9 miles; Intermittent – 6.2 miles

S. Transportation System

Trails: 0 miles **Roads:** 4.9 miles

PART III - WATERSHED CONDITION

A. Burn Severity: Unburned – 197 acres (10%); low – 461 (25%); moderate – 892 acres (47%); high – 339 acres (18%)

B. Water-Repellent Soil (acres): 901 (48%)

C. Soil Erosion Hazard Rating (acres): Low 461, Moderate 892, High 339

D. Erosion Potential: 10 tons/acre

E. Sediment Potential: 2,560 cubic yards / square mile

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years): 5

B. Design Chance of Success, (percent): 70%

C. Equivalent Design Recurrence Interval, (years): 10

D. Design Storm Duration, (hours): 1.0

E. Design Storm Magnitude, (inches): 1.12

F. Design Flow, (cubic feet / second/ square mile): 11.32

G. Estimated Reduction in Infiltration, (percent): 50%

H. Adjusted Design Flow, (cfs per square mile): 16.75

PART V - SUMMARY OF ANALYSIS**A. Describe Critical Values/Resources and Threats:****MEADOW CREEK WILDFIRE****BAER / CRITICAL VALUES-AT-RISK SUMMARY TABLE**

The lightning caused Meadow Creek fire was discovered on September 8, 2019. The fire started on private land downslope from Bureau of Land Management and Forest Service lands. Due to strong winds and redflag conditions the fire quickly spread covering 4,000 + acres in the first burn period. After the initial push crews were successful in holding the size to 4,231 total acres. National Forest System lands, 1,890 acres, involved have the highest percentage of slope and had heavy fuel loadings resulting in longer residence times and deeper soil burn ratings. Field work by the BAER team has identified the following critical values and level of associated risk to loss or damage.

- Human life and safety for forest users – High Risk
- Forest road infrastructure FR-501, FR-852, and FR-512– Very High Risk
- Agricultural water quality – Very High Risk
- Livestock improvements – Low Risk
- Soil productivity – Very High Risk
- Hydrologic function – Very High Risk
- Native or naturalized plant communities – Very High Risk
- Cultural and heritage resources – High Risk

Values in addition to BAER Critical Values were noted during the assessment and in cooperative meetings with partners:

- Residents of Meadow Utah and I-15 users
- Residential property in Meadow Utah
- Interstate 15 and frontage roads
- Critical big game winter range

HUMAN LIFE AND SAFETY**Human Life and Safety on NFS lands.**

Users of NFS Transportation System (Roads and Trails) –Primary users for all of the roads mentioned in the risk assessment are livestock producers, local residents, recreationists (hunting and fishing are very popular in this area), forest product gatherers, and Meadow Town water system administrators. FR 501 is the primary access road in the Meadow Creek drainage. FR-852 leads to private land inholdings that are developed with primary residences and recreational cabins. The steep burned slopes above FR 501 and 852 burned at moderate to high intensities and will produce debris flow and accelerated rates of overland flow. Even though there is some low intensity and unburned between FR 852 and the high and moderate burn scar, it is anticipated that the steepness of the slope will carry flood energy to and over the road. The face drainages on the north side of FR 501 will produce flows that will either damage or remove sections of the road. Similar conditions exist on FR 104 where a few pockets of heavier fuel burned at high intensities. These slopes are not as long and steep as those north of 501 and east of 852 but they will still produce sufficient flood energy to cause significant damage to the road and 512 along shorter sections of the road. It is possible that someone is on the road system when a rain event occurs with potential for major consequences associated with flash flooding within and downstream from the burn area – **Possible Probability of Damage or Loss / Major Consequences... HIGH RISK**

PROPERTY

Buildings, water systems, utility systems, road and trail prisms, dams, wells or other significant investments on NFS lands.

Forest Roads 501, 852, and 104 – The steep burned slopes above FR 501 and 852 burned at moderate to high intensities and will produce debris flow and accelerated rates of overland flow. Even though there is some low intensity and unburned between FR 852 and the high and moderate burn scar, it is anticipated that the steepness of the slope will carry flood energy to and over the road. The face drainages on the north side of FR 501 will produce flows that will either damage or remove sections of the road. Similar conditions exist on FR 104 where a few pockets of heavier fuel burned at high intensities. These slopes are not as long and steep as those north of 501 and east of 852 but it is expected that there will be sufficient flood energy produced with a thunderstorm event to cause significant damage to the road. - **Very Likely Probability of Damage or Loss / Moderate Consequences... VERY HIGH RISK**

Agricultural Water Quality - Agricultural Water Availability, Quality, and Distribution Network – Meadow Creek is dewatered through a diversion structure at the forest boundary on FR104. This diversion sends water into a network of cement ditches that support the agricultural operations of Meadow where they produce a large amount of alfalfa and corn. The natural channel for Meadow Creek flows into a debris basin on BLM lands and that has diversion structures to use additional water when flows are high enough. The high and moderate burned areas on NFS lands occurred mostly in the Meadow Creek drainage. The runoff coming from NFS lands will send silt, ash, and debris into Meadow Creek with a very high likelihood that forest boundary diversion will fill in and water will return to the natural channel forcing the debris basin to fill with sediment during the first-year post fire. It is very likely with the hydrophobic soils and severity of the burned areas in Meadow creek, agricultural water quality will be affected as will the availability with ditches being plugged, silted in or overtopped and sections eroding and failing. The processes in the hydrologic cycle directly or indirectly affect the magnitude of soil erosion and, as a consequence, the transport and deposition of sediment in water and other physical, chemical, and biological quality characteristics that collectively determine the quality of water. The most adverse effects from wildfires on water quality standards come from physical effects of the sediment and ash that are deposited into streams. The stream's physical, chemistry and biological parameters can be exceeded. Turbidity, nutrients, dissolved organic carbon, major ions, conductivity, and dissolved oxygen are some of the parameters that can be affected relating to water quality. For this fire the beneficial use of water for support of aquatic animals and ecosystems, and agricultural uses are likely to be impacted by this fire. - **Very Likely Probability of Damage or Loss / Moderate Consequences... VERY HIGH RISK**

Livestock management improvements (spring exclosures, boundary, allotment, and pasture fences, cattle guards) – Approximately 0.73 miles of livestock management fences are within the burn perimeter which are subject to damage and loss from flooding and burned vegetation falling on the lines. One cattle guard at the forest boundary and FR 501 is very likely to silt in and the spring sources along FR 104 will be impacted through flood events - **Very Likely Probability of Damage or Loss / Minor Consequences... LOW RISK**

NATURAL RESOURCES

Soil Productivity - Potential loss of soil due to post fire runoff events. Following the wildfire, erosive conditions exist due to the burning of ground cover, coarse woody debris and soil subsurface organic material. Loss of topsoil negatively affects ecological function for:

- native seed bank and native species recovery
- root growth and soil stability

With BARC imagery and on the ground assessments and verification the BAER team concluded that 65% of NFS lands burned at moderate to high severity on the incident . Approximately 339 acres were mapped as high burn severity and 892 acres burned at moderate severity. The lack of ground cover and hydrophobic soils will likely increase surface runoff, flooding, and erosion during typical summer monsoon rain events. – **Very Likely Probability of Damage or Loss/ Moderate Consequences... VERY HIGH RISK**

Hydrologic function on burned NFS lands – An adverse change to hydrologic function is expected due to contiguous areas burned at moderate and high severity. According to ERMiT model runs, up to 8.8 tons per acre of sediment delivery is possible during the first year following the fire.- **Very Likely Probability of Damage or Loss/ Moderate Consequences ... VERY HIGH RISK**

Native or naturalized plant communities on NFS land where invasive species or noxious weeds are absent or present in only minor amounts - The naturalized plant community that existed prior to the fire contained a mix of native and non-native grass species as well as oak, juniper, pinyon, bitterbrush, sage, cliffrose, and true leaf mahogany. Juniper dominated areas, mainly the high and moderate burned areas south of FR 501 are at the greatest risk for invasive plant establishment. This is due to the proximity of a seed source that exists on adjacent private and BLM lands and the aggressive nature that cheatgrass has to become established in burned/disturbed areas. The native/naturalized plant community is very likely to become type converted to a cheatgrass stand with an increased fire return interval that perpetuates itself with little opportunity to maintain a community with little to no invasives or noxious weeds. The majority of the fire area is currently noxious weed free and much like cheatgrass, the noxious weed spread potential increases with fire disturbance. Also, it is possible that equipment used during suppression activities transported noxious and/or invasive weed species into the area. Areas that were prepped for contingency lines, roads, parking areas, drop points and spike camps are areas of primary concern for introduction. The adjacent populations of noxious weeds have a high potential to spread further into the fire area. - **Very Likely Probability of Damage or Loss / Moderate Consequences ... VERY HIGH RISK**

CULTURAL AND HERITAGE RESOURCES

Cultural resources on NFS lands which are listed on or potentially eligible for the National Register of Historic Places. – Field surveys identified a class 1 eligible site in need of protection and due to terrain restrictions survey work is ongoing at time of report. Looting is a concern as artifacts are visible after the fire and rain events will further expose them. - **Possible Probability of Damage or Loss / Major Consequences... HIGH**

C. Probability of Completing Emergency Stabilization Treatments Prior to a Storm Damaging Event:

Land	70 %	Channel	NA	Roads / Trails	85 %	Protection / Safety	90 %
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D. Probability of Treatment Success: (on NFS lands)

Treatment Types:	← Years After Treatment →		
	1	3	5
Land Treatments (seeding and mulching)	75%	80%	85%

Channel Treatments (None)	NA	NA	NA
Road / Trail Treatments (drainage)	85 %	85 %	85 %
Protection / Safety Treatments (signs)	90 %	90 %	90 %

E. The Cost of Taking No - Action: \$ 683,489

Monetary analysis of the cost of taking no action considered loss of and effects to; road infrastructure, and conversion of native or naturalized plant communities to invasive/noxious weedy species. Further effects were considered to human life and safety and possible property damage while on NFS lands. While still extremely valuable, monetary values were not considered in the cost of taking no action, for hydrologic function, soil productivity, off forest infrastructure, and human life and safety on state roads. Cost estimates were obtained through consultation with Forest Service engineers, hydrologists, soil scientists, botanists, ecologists, and include repair/reconstruction costs and where appropriate replacement costs.

F. The Cost of the Selected Alternative: \$ 243,780 (including loss)

Values-At-Risk: See VAR Spreadsheet

G. Skills Represented on Burned-Area Survey Team:

<input checked="" type="checkbox"/> Hydrology	<input checked="" type="checkbox"/> Soils	<input type="checkbox"/> Geology	<input type="checkbox"/> Range
<input type="checkbox"/> Forestry	<input checked="" type="checkbox"/> Wildlife	<input type="checkbox"/> Fire Mgmt.	<input type="checkbox"/> Engineering
<input type="checkbox"/> Contracting	<input checked="" type="checkbox"/> Ecology	<input checked="" type="checkbox"/> Botany	<input checked="" type="checkbox"/> Archaeology
<input type="checkbox"/> Fisheries	<input type="checkbox"/> Research	<input type="checkbox"/> Landscape Arch	<input checked="" type="checkbox"/> GIS
<input checked="" type="checkbox"/> Recreation	<input type="checkbox"/> Roadless		

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H. Treatment Narratives: Describe the emergency treatments, where and how they will be applied-and, what they are intended to do. This information helps to determine qualifying treatments for the appropriate funding authorities. For seeding treatments include species, application rates and species selection rationale.

LAND TREATMENTS

Broadcast Seeding

Findings

The initial assessment of the burned area and its surrounding landscape identified risks to the **Native or naturalized plant communities on NFS land where invasive species or noxious weeds are absent or present in only minor amounts.** The same assessment identified risks to **Critical and Substantial Big Game Habitat on NFS land.**

Risk 1- Threat of expanding infestations of noxious and invasive plants:

The adjacent landscape and along roads corridors within the fire, contain invasive and a small population of noxious weed species (see noxious weed map). A high probability exists of rapid invasion and/or expansion of these noxious and invasive weeds in the burned area. Because of inherent dry conditions, low elevation and proximity to existing populations of invasive species and noxious weeds the entire burn area is prone to infestation. Burn areas on the edge of the Great Basin within the Fishlake National Forest are highly susceptible to Cheatgrass invasion if left untreated.

The cost to restore this system, once Cheatgrass is established, greatly exceeds that of the proposed post fire treatment because of the added cost to chemically remove it.

Risk 2 – Soil Erosion and Loss and Water Quality:

Utilization of cereal grains and perennial grasses will stabilize hillslopes burned at high and moderate intensities and augment revegetation where seed sources are limited. The district has experienced success with stabilizing hillslopes with past seeding treatments i.e. Lower Ebbs, Solitude, Sawmill, and Sunset Canyon fires with perennial grass seed mixes. The district is collaborating with the BLM, State, and Private landowners to use the Watershed Restoration Initiative (WRI) process to treat acres across ownerships through a good neighbor agreement.

Monitoring data from past BAER seeding treatments combined with chaining on the district, both qualitative and quantitative, supports the recommendation of seeding and chaining as an effective year 1 treatment for soil stabilization and noxious weed prevention.

- Year 1 results on a recent BAER reseeding. Seeded in April of 2010, first reading in June of 2010 – 31% ground cover. Second reading July of 2010 – 53% ground cover. In 2011 the plots recorded 65% ground cover all from an increase in vegetation and litter (Tait 2015)
- Year 1 results on another BAER reseeding. Seeded in the fall of 2013 with native and non-native grasses. Qualitative estimates of 50-70% ground cover observed.

Risk 3 (Non-critical BAER Value) - Loss of critical big game wintering habitat:

Large stands of Stansbury cliffrose, antelope bitterbrush, and mahogany were lost in the burn. These species are critical components to sustain big game through the fall and winter months. It is essential that these areas are managed to control the onset of noxious and invading plant species to allow the re-establishment of these shrubs. The proposed seeding species list will advance the restoration of these shrubs while curtailing the weedy invaders. Cooperation with the UDWR and the WRI program will allow these shrub species to be seeded during the initial seeding by using seed dribblers on the tracks of the caterpillars that pull the chains through the area. This technique has been used with great success throughout the Intermountain West.

Proposed Treatments

To mitigate the post fire effects and protect the values at risk of water quality, road infrastructure and native/naturalized plant communities, it is proposed that two seeding regimes for the Meadow Creek fire be implemented with the application of chaining where the slope and burn intensity dictate.

On the areas where the burn was moderate and high with a slope of greater than 35%, Sterile triticale (or equivalent) at the rate of 30 lb./acre will be aerially broadcast seeded in the Meadow Creek HUC. No treatments are proposed in Pine Creek even though this is where some of the highest level of burn occurred as values at risk on NFS lands are not present or are limited in values. This area consists of 255 acres and the treatment is designed to provide emergency stabilization to protect FR 501 and water quality in Meadow Creek.

Another seed mix consisting of grasses will be aerially broadcast seeded and chained on the areas that burned at high and moderate severities and that are less than 35% slope for the protection of road infrastructure and native/naturalized plant communities. The seeding and chaining polygon is 507 acres in size and it proposed that another 83 acres will be seeded but not chained due to excessive slope and the presence of cultural resources. These grass species are well known to establish well, are sod forming, and are competitive against weedy invaders, primarily cheatgrass.

This seeding and subsequent chaining will counter the potential establishment, and spread of noxious weeds and invasive species. The burned area has the presence of noxious weeds; however, the area is in danger from domination of noxious weeds coming in from all directions..

To protect soil loss and water quality chaining will reduce hydrophobic soils by breaking the surface layer and establishing infiltration points. Scarifying the soil will provide seed cover for better establishment and reduce runoff and overland flows. The team is recommending this treatment in lieu of agricultural or wood straw mulch as it is more cost effective.

Prior to chaining a survey for cultural resources needs to be completed on 471 acres. The resources needed to complete the survey in a timely manner as part of the emergency stabilization work cannot be met with local resources and will need to be contracted out. The seeding and chaining has been approved with the initial request.

While not a critical BAER value it is worth noting that the Utah Division of Wildlife Resources (UDWR) has a high interest in the successful restoration of the burned area as the bench areas are Critical Big Game winter range. In addition, the remainder of the fire is substantial summer range for Big Game. Because of this vested interest, the UDWR are willing to supplement our seed mix with forb, shrub and additional grass species in an effort to speed up the recovery of highly used wildlife species. They have also agreed to take the lead with the FS and BLM to facilitate contracting the application and chaining.

The recommended seed mix is "of species known to be effective for erosion control, adapted to the target area and compatible with future management objectives". (FSH 2509.13,20 p. 13) The seed mix contains native species and introduced species to help restore ecosystem function by reducing erosion and competing with noxious invaders.

The seed purchased will be certified to the variety claimed. Also, the mix will be certified that No noxious weed seeds are present. Actual costs may vary depending on availability at time of purchase from successful bidder.

The following table shows the pounds per acre that is used in the seed mix.

Seed mix with Chaining Seed Mix 1	Application- lbs./acre	Cost \$/lb. Estimate	Cost per Acre	Total cost estimate
Blue bunch wheatgrass	2	\$6.10 lb	\$12.20	\$7,198
Western Wheatgrass	2	\$3.75 lb	\$7.50	\$4,425
Thickspike Wheatgrass	2	\$6.10 lb	\$12.20	\$7,198
Sandberg Blugrass	1	\$6.25 lb	\$6.25	\$3,688
Orchardgrass	1.5	\$3.75 lb	\$5.63	\$3,322
590 Acres	Total = 8.5 lbs./acre	Total Cost	\$43.78/acre	\$25,831

Seed mix without Chaining				
Seed Mix 2				
Triticale, Sterile	30	\$2.13 lb	\$64/acre	\$16,320
255 Acres	Total = 30 lbs./acre			
			Total seed Cost	\$42,151

This seed mix includes the recommendations of District and Forest Specialists. We referred to seed mixes previously used on the Forest and the Intermountain Planting guide, from Utah State University Cooperative Extension Service, while designing these seed mixes to achieve the FSM objectives listed above.

The seeding is being pursued as a partnership project with the state of UT. Opportunities to utilize available seed from the state seed warehouse in Ephraim as well as other sources is being considered.

Aerial Seeding and Chaining Monitoring

Implementation monitoring of the seeding application will include inspections of the seed distribution by known area markers on the ground to verify adequate seed density/sq. ft.

Adequate winter or spring moisture will be key to the success of the aerial seeding treatment. It will be important to monitor the establishment of seeded species during the 2020 growing season.

Cultural Site Protection Treatment

The Forest archaeologist is recommending seeding to reduce erosion potential over the class 1 heritage site and to blend the site in with the surrounding landscape to deter looting. The seeding proposal above will meet the requirements of protection identified.

Noxious Weed Monitoring and Spot Treatment

The Fillmore Ranger District weed crew will implement this strategy in 2020 to detect and treat any new infestations of noxious weeds in the burned area. In addition to ensure noxious weed populations do not spread into the burned area, work needs to be completed to monitor, detect, and treat any new weed infestations brought in from the outside perimeter. The treatment provides for a weed crew to monitor a 20-foot buffered area along the existing road network within the burn except for FR 852 which had dozer lines installed on either side of the road. To capture the disturbed area this section was buffered at 65 feet on either side of the road. There are just over 4.9 miles of roads within the burn. In total 65 acres will be monitored and treated as needed.

Storm Patrols

Following large storm events or as reports are received about debris flows on roads within the burn perimeter, Forest staff will patrol the area and address the problem. This may involve equipment use to grade road surfaces for proper drainage and reinforce water-bars. Additionally, staff will make recommendations for interim BAER funding requests that may be needed.

ROAD TREATMENTS

Road Stabilization

Purpose of Treatment: To protect the road infrastructure from erosion damage by ensuring proper drainage through installing culverts and ditching to direct water off the road surface, installing rolling dips at low crossings, installing waterbars and adequate run out areas to reduce or eliminate the possibility of the road becoming a channel.

General Description: Cleanout culverts at 1 site where fire affected drainages cross forest system roads. Install waterbars and runout areas on roads that are within or will be directly affected by flood flows below the high and moderate burned areas. Install hardened crossings at road intersections with face drainages to prevent downcutting and roadbed loss. Install 3 culverts at critical drainage points and smooth, slope and ditch road surface and shoulder to direct drainage to proper locations. Roads will not be altered to a higher improvement maintenance level.

Location (Suitable) Sites: (see Roads Treatment Map) FR 852, grade, ditch, and install waterbars. FR 501, grade, ditch, and install waterbars at identified locations. FR 104, grade ditch, install waterbars and install 3 culverts.

PROTECTION AND SAFETY MEASURES

Road and Trail Burned Area Warning Signs

Purpose of Treatment: The purpose of the BURNED-AREA signs is to warn the public of potential hazards resulting from the effects of the fire, such as rolling rocks, falling trees, road washouts, and flash floods.

General Description: This treatment is for the installation of burned-area warning signs. Burned-area signs consist of a warning to the public identifying of the possible dangers associated with a burned-area. It shall contain language listing items to be aware of when entering a burn area such as falling trees and limbs, rolling rocks, and flash floods.

Location (Suitable) Sites: These signs shall be installed at the intersection of the east frontage road on I-15 and FR 501 and at the intersection of FR 959 and the county road leading to Sunset Canyon. All signs will be placed facing the direction of travel entering the burn area.

Implementation Monitoring:

Determine if the following proposed treatments were implemented as outlined in the BAER report:

- **Broadcast Seeding:** Are the seed mixtures applied to the intended sites with the proper rates of application?
- **Explanatory Signs:** Are the signs installed at the designated locations with the intended messages? Are the signs clear and legible? Was the installation timely? Did costs approximate budgeted allocations?
- **Road and Trail:** Are drainage structures installed correctly? Were culverts cleaned and are grade dips and water bars functioning properly?

I. Effectiveness Monitoring Narrative:

Describe the monitoring needs, what treatments will be monitored, how they will be monitored, and when monitoring will occur. A detailed monitoring plan must be submitted as a separate document to the Regional BAER coordinator.

Interim Evaluations

The Implementation Team Leader will conduct periodic evaluations with the District and Forest / Implementation Team to assess implementation progress, effectiveness monitoring and to determine if parameters measured and sampling frequency meet the planned objectives. The BAER team understands that monitoring funds could be available for effectiveness monitoring in years 2 and 3 provided that the Fishlake National Forest submits interim reports to request additional funding and provided that the Forest documents and shares their findings.

Monitoring Reports

The overall results will be presented in a detailed summary report during 2019. This report will be submitted to the Forest Supervisor, District Rangers, the Regional Office and all cooperating agencies and other interested parties.

Annual Financial Requirements

Report cost of monitoring by year.

Part VI – Emergency Stabilization Treatments and Source of Funds

Line Items	Units	Unit Cost	NFS Lands		Other \$	Other Lands				All Total \$
			# of Units	BAER \$		# of units	Fed \$	# of Units	Non Fed \$	
A. Land Treatments										
Seed Purchase	acres	50	845	\$42,149	\$0		\$0		\$0	\$42,149
Aerial Application	acres	20	845	\$16,900	\$0		\$0		\$0	\$16,900
Chaining	acres	75	507	\$38,025			\$0		\$0	\$38,025
Cultural Survey Contra	acres	85	471	\$40,035						
Cadastral Survey	miles	4,000	3	\$0						\$0
Weed Treatment-ac	acres	97	65	\$6,305	\$0		\$0		\$0	\$6,305
Implementaton Coordin	job	3690	1	\$3,690			\$0		\$0	\$3,690
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Land Treatments</i>				\$147,104	\$0		\$0		\$0	\$107,069
B. Channel Treatments										
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Channel Treat.</i>				\$0	\$0		\$0		\$0	\$0
C. Road and Trails										
Trail Drainage-mile	mile	0	0	\$0	\$0		\$0		\$0	\$0
Road Drainage - mile	mile	10484	3.5	\$36,694	\$0		\$0		\$0	\$36,694
Warning Signs	each	420	2	\$840	\$0		\$0		\$0	\$840
		0	0	\$0			\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Road & Trails</i>				\$37,534	\$0		\$0		\$0	\$37,534
D. Protection/Safety										
Storm Patrol	Job	3000	1	\$3,000	\$0		\$0		\$0	\$3,000
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Structures</i>				\$3,000	\$0		\$0		\$0	\$3,000
E. BAER Evaluation										
Assess. & Report	1	10,000	1	\$10,000			\$0		\$0	\$10,000
<i>Insert new items above this line!</i>				---	\$0		\$0		\$0	\$0
<i>Subtotal Evaluation</i>				\$10,000	\$0		\$0		\$0	\$10,000
F. Monitoring										
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Monitoring</i>				\$0	\$0		\$0		\$0	\$0
G. Totals				\$187,638	\$0		\$0		\$0	\$147,603
Previously approved				\$147,603						
Total for this request				\$40,035						

PART VII - APPROVALS

1. /s/ Mike Elson
Forest Supervisor (signature)

09/19/19
Date

2. /s/ Lynn R. Oliver (for)
Regional Forester (signature)

Date 10/22/2019



Fig 1 NW view Meadow Cr FR104



Fig 2 NE view FR104 to Meadow Cr



Fig 3. E view FR501 Meadow Cr



Fig 4 SW view Meadow CR FR501



Fig 5 Pine Cr W Meadow Cr E

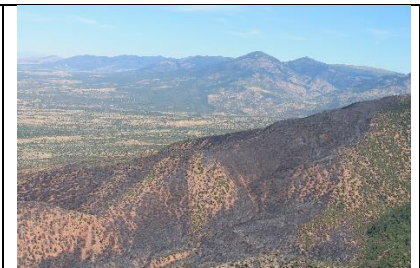


Fig 6 N view Meadow Cr



Fig 7 FR 501 top FR104 bottom



Fig 8 Debris Basin on BLM in Meadow Cr



Fig 9 Trash rack debris basin overflow



Fig 10 Meadow Town and Ag land



Fig 11. S to N view. Meadow to W



Fig 12 Diversion at FS boundary