

Date of Report: 11/06/2012

Changes in **Lavender****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:** North Schell Fire**B. Fire Number:** NV-HTF-040066**C. State:** NV**D. County:** White Pine County**E. Region:** 04**F. Forest:** 17**G. District:** Ely**H. Fire Incident Job Code:** P4GX6G**I. Date Fire Started:** 06/09/2012**J. Date Fire Contained:** August 2, 2012**K. Suppression Cost:** \$ 3,225,000+**L. Fire Suppression Damages Repaired with Suppression Funds**

1. Fireline waterbarred (miles): .5
2. Fireline seeded (miles): 5
3. Other (identify): cut fences repaired

M. Watershed Number: 160600080700 Lower Spring Valley Ck

160600080507 Snow Bank Creek

160600080508 Redhill Pass-Spring Valley Ck

N. Total Acres Burned:**NFS Acres** [8223 total, 7807 wildfire] **Other Federal** [3342] **State** [0] **Private** [482]

O. Vegetation Types: mountain mahogany, pinyon-juniper, mixed conifer, and black sagebrush

P. Dominant Soils: Lithic cryrendolls, Xeric haplocryalfs, Lithic xeric haplocalcids, and Lithic argixerolls. The specific predominate soils are the Haunchee, Hardzem, Pookaloo, Grandeposit, and Tecomar soils.

Q. Geologic Types: Limestone including CC, Oe, Pc, DC, SOc formations. Andesite, TaC, Quartzite, Zqs, and Alluvium, Qa are also found.

R. Miles of Stream Channels by Order or Class: 6.6 perennial, 46.3 intermittant

S. Transportation System Trails: 1.1 miles **Roads:** 2.14 miles

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 7485 (low) 2330 (moderate) 477 (high)

B. Water-Repellent Soil (acres): 330 (high hydrophobicity)

C. Soil Erosion Hazard Rating (acres): 5778 (low) 2732 (moderate) unknown(high)
The soil survey for this area is not yet complete and does not have erosion hazard ratings assigned yet for all units. Based on field observations the moderate and high erosion hazard areas are under represented in the current GIS information used to derive these acre figures.

D. Erosion Potential: 3.7-7 tons/acre

E. Sediment Potential: 3200 cubic yards / square mile

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years): 3-5

B. Design Chance of Success, (percent): 90

C. Equivalent Design Recurrence Interval, (years): 2yr

D. Design Storm Duration, (hours): 6hr

E. Design Storm Magnitude, (inches): .94

F. Design Flow, (cubic feet / second/ square mile): 1.13

G. Estimated Reduction in Infiltration, (percent): 10

H. Adjusted Design Flow, (cfs per square mile): 1.28

PART V - SUMMARY OF ANALYSIS

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

The North Schell Wild land Fire began on 6/09/2012 after starting as a USFS prescribed burn. The wildfire burned 7807 NFS acres, 3342 other Federal acres and 482 Private acres. The major vegetation types are mountain mahogany, pinyon-juniper, mixed conifer, and black sagebrush. There are 6.6 miles of perennial stream and 46.3 miles of intermittent stream in the burn area. The burn severity percentages were 7485 acres of low, 2330 acres of moderate and, 477 acres of high burn severity.

Objectives of the Assessment

1. Identify values at risk downstream and downslope from areas with potential high post-fire watershed response.
2. Assess watershed changes caused by the fire, particularly those that pose substantial threats to human life, property, and critical natural and cultural resources.
3. Assess the potential for post-fire effects to downstream values at risk.

Initial Concerns

- Threats to human health and life within and downstream of the burned area.
- Threats to the roads and other improvements within the burn area.
- Threats to the residences adjacent to the primary drainages affected by the fire.
- Threats to roads, stream crossings, or other man-made developments or property that are downstream of the fire and are at risk of being affected by future storm events.
- Threats to water quality.

There are three Hydrologic Unit Code 6 (HUC 6) Watersheds affected by the fire: 160600080700 Lower Spring Valley Creek, 160600080507 Snow Bank Creek, and 160600080508 Red Hills Pass/Spring Valley Creek. The Lower Spring Valley Creek watershed contains Muncy Creek which is a domestic water supply for the Eldridge Ranch. Smaller watersheds showed a higher potential for increased sediment and flooding based on the size of the watershed and extent and location of burn severity. Those areas that have the highest potential for flooding and increased sediment include Muncy Creek, Grand Deposit, and Red Hills Pass/Spring Valley. This is due to the fact that high percentages of these watersheds have been burnt and these watersheds have higher percentages of moderate and high burn severity. There are some values at risk in and below these watersheds including, roads, a water line, and a ranch. The Humboldt-Toiyabe National Forest GIS data shows 46.3 miles of intermittent channels and 6.6 miles of perennial channels within the burn area. Precipitation in the burn area averages 10-25 inches per year, and predominately comes in the form of summer thunderstorms occurring between July and September with rarer occurrences into October. Winter rain and snow occurs between November and April. Stream channels in the burn area have the potential to flash flood due to the steep, rocky nature of the associated watersheds.

Values at risk have been identified both on and downstream of NFS lands. These are identified in the risk determination table below.

| Color Scheme Legend | |
|---------------------|---|
| | Risk Level |
| | Very High |
| | High |
| | Intermediate (Where Treatments Are Recommended) |

Lower Spring Valley Creek (160600080700)

| Value (Life/Property/Resources) | Value At Risk | Probability of Damage or Loss | Magnitude of Consequences | Risk |
|------------------------------------|--|----------------------------------|------------------------------|--------------|
| Resources | Arch Site – Cemetery | Unlikely | Minor | Very Low |
| Life | Muncy Creek Road | Possible | Major | High |
| Property | Muncy Creek Road | Very Likely | Moderate | Very High |
| Property | Domestic Water Supply | Likely | Moderate | High |
| Property | 8in Irrigation line coming out of Muncy ck | Likely | Moderate | High |
| Resource | Muncy Creek Riparian Area | Likely | Moderate | High |
| Life | Mine Adits | Possible | Major | High |
| Life | Muncy Creek Trail FS Trail 19071 | Unlikely | Moderate | Low |
| Property | Muncy Creek Trail FS Trail 19071 | Unlikely | Minor | Very Low |
| Property | Kalamazoo Creek Irrigation | Unlikely | Major | Intermediate |
| Life | Kalamazoo Creek Road (FS RD 427) | Unlikely | Moderate | Low |
| Life | Muncy Ranch | Unlikely | Moderate | Low |
| Property | Muncy Ranch | Unlikely | Moderate | Low |
| Property | Kalamazoo Creek Road (FS RD 427) | Unlikely | Minor | Very Low |

Red Hills Pass – Spring Valley Creek (160600080508)

| Value (Life/Property/Resources) | Value At Risk | Probability of Damage or Loss | Magnitude of Consequences | Risk |
|------------------------------------|---------------------------------|----------------------------------|------------------------------|-----------|
| Life | Grand Deposit Road | Likely | Major | Very High |
| Property | Grand Deposit Road | Likely | moderate | High |
| Life | Mine Adits | Possible | Major | High |
| Resources | Arch Site – Grand Deposit | Likely | Moderate | High |
| Resources | Arch Site – North Grand Deposit | Likely | Minor | Low |

Snow Bank Creek (160600080507)

| Value (Life/Property/Resources) | Value At Risk | Probability of Damage or | Magnitude of Consequences | Risk |
|------------------------------------|---------------|-----------------------------|------------------------------|------|
|------------------------------------|---------------|-----------------------------|------------------------------|------|

| | | | | |
|-------------|--|-------------|--|--|
| | | Loss | | |
| none | | | | |

All Watersheds

| Value (Life/Property/Resources) | Value At Risk | Probability of Damage or Loss | Magnitude of Consequences | Risk |
|--|---------------------------------------|--|--------------------------------------|------------------|
| Life | Nevada Hwy 893 | Unlikely | Moderate | Low |
| Property | Nevada Hwy 893 | Unlikely | Minor | Very Low |
| Resources | Range Productivity | Unlikely | Minor | Very Low |
| Resources | Soil Productivity | Very Likely | Moderate | Very High |
| Resources | Native Vegetation Recovery | Possible | Minor – localized and recoverable | Low |
| Resources | Water Quality and Quantity | Likely | Moderate | High |

- B. Emergency Treatment Objectives (narrative):** Install gates and signs on two roads where there is threat to human health and safety. Mulch soil on the fire to protect soil productivity water quality, forest users, road systems, and downstream values through coarse wood mulch application treatment. The possible treatment areas will be in the watersheds that have values within that are high or very high risk of post fire runoff events. Inhibit access into the vertical shafts, drifts and adits that the fire has made much more accessible due to fire and now have an increased risk to safety of the public on NFS lands within the burn area. Reduce anticipated increased runoff on non-system and system roads to protect downstream values and to protect FS property.
- C. Probability of Completing Treatment Prior to Damaging Storm or Event:** Land 80%
Channel na% Roads/Trails 80% Protection/Safety 80%

D. Probability of Treatment Success

| | Years after Treatment | | |
|-------------------------------|------------------------------|----------|----------|
| | 1 | 3 | 5 |
| Land | 80 | 80 | 80 |
| | | | |
| Channel | na | na | na |
| | | | |
| Roads/Trails on fs | 90 | 90 | 90 |
| | | | |
| Protection/Safety | 90 | 90 | 90 |
| | | | |

- E. Cost of No-Action (Including Loss):** Much of potential loss on NF lands is non-monetary values. These include soil and water resources, human health and life. There is also a risk

to loss of FS road prisms and road crossings both system and nonsystem roads. There is a potential loss to values off NF lands that include human health and safety, road systems, private property including buildings and equipment, **domestic water system**, agricultural irrigation systems, and agricultural fields. Post flood cleaning of roads, channel crossings, water inlets and other property is also an anticipated cost to bring the infrastructure to functioning condition following any post fire events. The potential monetary loss may range from \$150,000-\$400,000 depending on impacts to all lands.

- F. Cost of Selected Alternative (Including Loss):** The selected alternative is expected to reduce risks within the first year. The probability of treatment success is 80-90%. The proposed treatment costs are \$336,347 to address the high and very high BAER values at risk. The proposed treatments are to reduce risks to values that have and do not have available monetary values of loss estimates.

G. Skills Represented on Burned-Area Survey Team:

| | | | |
|---|--|--|---|
| <input checked="" type="checkbox"/> Hydrology | <input checked="" type="checkbox"/> Soils | <input type="checkbox"/> Geology | <input checked="" type="checkbox"/> Range |
| <input type="checkbox"/> Forestry | <input checked="" type="checkbox"/> Wildlife | <input checked="" type="checkbox"/> Fire Mgmt. | <input checked="" type="checkbox"/> Engineering |
| <input type="checkbox"/> Contracting | <input type="checkbox"/> Ecology | <input 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 |

Team Leader: Robin J Wignall **Email:** rjwignall@fs.fed.us **Phone:** 775-778-6122
FAX: 775-778-6167

- H. Treatment Narrative:** (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: In order to prevent sedimentation and soil erosion and to retain soil productivity approximately 2,183 acres will be aerially mulched with 5 tons/acre of coarse wood mulch. This treatment will reduce downstream flows. In addition to protecting soil and water values from post fire events it will reduce risks to FS property (roads) and off forest values. Wood mulch was chosen due to the prevailing wind speeds in the area and the over all slopes of the treatment units. Treatment polygons are both high and moderate burn severity where mulch will have an effect within the subwatershed at reducing energy from rainfall impact and overland flow. The mulch is to be supplied from a BLM Stewardship restoration project where PJ is being mulched. Costs of the mulch and delivery to the treatment staging area is \$5/ton for material and \$22,000 for delivery. The costs for aerial application is estimated at \$108/ac. Total estimated costs for the wood mulching treatment is \$144/ac. This treatment is an example of efficient use of restoration projects, products from restoration treatments, and coordination between land management agencies.

Channel Treatments: no inchannel treatments are proposed.

Roads and Trail Treatments: To reduce the risk of someone being on either of the narrow canyon bottom roads within the fire area (Muncy and Grand Deposit Rds) two gates (forest owned) will be installed, along with hazard signing (falling rock and debris and flash flood hazard next one mile). Additionally **five** armored low water crossings and two rip rapped

leadoff ditches are proposed on the Muncy Ck Road in order to prevent the road from capturing the stream flow and to limit the damage to downstream resource if it does capture flow. The Muncy Ck road is a non system road but is the only access to the source area for the culinary water diversion and the eight-inch irrigation diversion. The road is also expected to contribute significant flows due to the additional runoff from the fire without mitigation at channel crossings.

The culinary waterline is buried in the centerline of the road including in the stream crossings. During the initial assessment the exact location of the waterline was not known by the District or water right owner. The waterline was subsequently located. The low water crossings will have to be modified in order to protect the pipeline from being damaged during maintenance work and use of the road.

Protection/Safety Treatments: There are 16 known abandoned mine features located within the North Schell Fire area. Of these, five sites are considered to be increased post fire threats to BAER values at risks of public health and safety. These sites are adjacent to Main Muncy Creek drainage at the end of an ATV road accessed through Grand Deposit. The waste rock dumps associated with four of the mine features are readily visible from the main road leading into main Muncy Creek drainage due to the fire removing all brush that was obscuring them. These features pose a significant risk to the public users of NF lands due to the now, highly visible waste rock dumps and adit locations. All of these sites are/were on a list for closure. The fire has increased the priority of the need for closure. The AML program will contribute to the reducing post fire threats by providing technical assistance in completing the risk reduction. All 16 sites have been considered for the minimal necessary to reduce post fire risks or risks elevated due to the fire. The five proposed are those sites at highest risk. The options of signing and temporary fencing were considered. However, the cost to bring temporary fence materials to a site and then later removing the temporary fencing was greater than the closures described below that are longer term in effectiveness. The intent is to mitigate the increased additional safety hazards posed by these features due to and following wildfire. Steel gates/grates for Muncy 1, 2, 4 and 5 will be fabricated on site using two-inch square steel tube cut to fit and anchored to bedrock with 1-inch diameter rebar pegs. A polyurethane foam plug will be fabricated at Muncy 3 by installing a false bulkhead inside the working and filling the remaining hole with expanding foam. These features consist of three vertical workings (one shaft and two declines), and a partially collapsed adit. The vertical component and instability around the portal within these workings presents a serious safety hazard to the visiting public. The fifth working is a shaft that is located at the end of a 4WD ATV road, about 0.6 miles from the Grand Deposit, a prominent historic mining town depicted on the Kalamazoo Map. Physical data for these workings are provided below. The site number refers to the locations shown on the attached map.

| Feature # | Site # (see map) | Type | UTMs | Dimensions | Closure method/logistics |
|-----------|------------------|--------------------------|---------------------|-------------------------|--------------------------|
| Muncy 1 | 8817 | Decline | 709721E 4386111N | 6' w x 6' h x 150' deep | Steel gate (heli) |
| Muncy 2 | 8266 | Adit with interior winze | 709435E 4386660N | 4' w x 7' h x 10'0 deep | Steel gate (heli) |

| | | | | | |
|---------|------|-------|---------------------|-----------------------------|----------------------------------|
| Muncy 3 | 8266 | Adit | 709361E 4386681N | 4' w x 4' h x 50' long | Polyurethane foam plug (heli) |
| Muncy 4 | 8266 | Shaft | 709372E 4386710N | 10' w x 12' w x 75' deep | Steel grate (heli) |
| Muncy 5 | 8924 | Shaft | 709813E 4388943N | 5' w x 5' w x 60' deep | Steel grate (ATVs) |

- I. 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.)

No monitoring is proposed.

Part VI – Emergency Stabilization Treatments and Source of Funds Initial Request

| 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 | | | | | | | | | |
| wood mulch | tons | 5 | 10915 | \$54,575 | \$0 | | \$0 | \$0 | \$54,575 |
| wood mulch delivery | job | 22000 | 1 | \$22,000 | | | | | |
| helicopter time | hrs | 1300 | 122 | \$158,600 | \$0 | | \$0 | \$0 | \$158,600 |
| helicopter mobilization | each | 30000 | 1 | \$30,000 | \$0 | | \$0 | \$0 | \$30,000 |
| <i>Insert new items above this line!</i> | | | | \$0 | \$0 | | \$0 | \$0 | \$0 |
| Subtotal Land Treatments | | | | \$265,175 | \$0 | | \$0 | \$0 | \$243,175 |
| B. Channel Treatments | | | | | | | | | |
| none | | | | \$0 | \$0 | | \$0 | \$0 | \$0 |
| <i>Insert new items above this line!</i> | | | | \$0 | \$0 | | \$0 | \$0 | \$0 |
| Subtotal Channel Treat. | | | | \$0 | \$0 | | \$0 | \$0 | \$0 |
| C. Road and Trails | | | | | | | | | |
| gates w/signs | each | 3320 | | \$0 | \$6,640 | | \$0 | \$0 | \$6,640 |
| low water crossings | each | 1000 | 5 | \$5,000 | \$0 | | \$0 | \$0 | \$5,000 |
| lead off ditches w/rip rap | each | 520 | 2 | \$1,040 | \$0 | | \$0 | \$0 | \$1,040 |
| mobilization | each | 7000 | 1 | \$7,000 | \$0 | | \$0 | \$0 | \$7,000 |
| equipment w/operator | each | 42148 | 1 | \$42,148 | \$0 | | \$0 | \$0 | \$42,148 |
| <i>Insert new items above this line!</i> | | | | \$0 | \$0 | | \$0 | \$0 | \$0 |
| Subtotal Road & Trails | | | | \$55,188 | \$6,640 | | \$0 | \$0 | \$61,828 |
| D. Protection/Safety | | | | | | | | | |
| travel (days) | 8 | 123 | | \$984 | | | | | |
| Steel, foam, supplies | multiple | | | \$4,000 | \$0 | | \$0 | \$0 | \$4,000 |
| heli work | hours | 2 | | \$3,000 | \$0 | | \$0 | \$0 | \$3,000 |
| labor (days) | 8 | 1000 | | \$8,000 | \$0 | | \$0 | \$0 | \$8,000 |
| <i>Insert new items above this line!</i> | | | | \$15,984 | \$0 | | \$0 | \$0 | \$15,000 |
| Subtotal Structures | | | | | | | | | |
| E. BAER Evaluation | | | | --- | | | \$0 | \$0 | \$0 |
| | | | | --- | \$0 | | \$0 | \$0 | \$0 |
| <i>Insert new items above this line!</i> | | | | --- | \$0 | | \$0 | \$0 | \$0 |
| Subtotal Evaluation | | | | | | | | | |
| F. Monitoring | | | | \$0 | \$0 | | \$0 | \$0 | \$0 |
| none | | | | \$0 | \$0 | | \$0 | \$0 | \$0 |
| <i>Insert new items above this line!</i> | | | | \$0 | \$0 | | \$0 | \$0 | \$0 |
| Subtotal Monitoring | | | | | | | | | |
| | | | | \$336,347 | \$6,640 | | \$0 | \$0 | \$320,003 |
| G. Totals | | | | | | | | | |
| Previously approved | | | | \$336,347 | | | | | |
| Total for this request | | | | \$0 | | | | | |

PART VII - APPROVALS

Interim 1 Approvals:

/s/Christie Kalkowski (for)
REBECCA S. NOURSE

Date November 6, 2012

Forest Supervisor (signature)

/s/ Harv Forsgren

Regional Forester (signature)

Date

11/9/12



