

Date of Report:

BURNED-AREA REPORT
(Reference FSH 2509.13)**PART I - TYPE OF REQUEST**

A. Type of Report

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

B. Type of Action

- ☒ 1. Initial Request (Best estimate of funds needed to complete eligible rehabilitation measures)
☐ 2. Interim Report
 ☐ 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 DESCRIPTIONA. Fire Name: WilleyB. Fire Number: MT-MCD-250C. State: MontanaD. County: Powder RiverE. Region: 01F. Forest: CusterG. District: AshlandH. Date Fire Started: August 13, 2003I. Date Fire Controlled: UnknownJ. Suppression Cost: \$1.2 Million (estimated)

K. Fire Suppression Damages Repaired with Suppression Funds

1. Fireline waterbarred (miles): 10
2. Fireline seeded (miles):
3. Other (identify):

L. Watershed Number: 1009010204M. Total Acres Burned: 5,284NFS Acres(**5025**) Other Federal (**0**) State (**0**) Private (**260**)N. Vegetation Types: Ponderosa Pine, Juniper, and Grassland

O. Dominant Soils: Entisols (67%), Rock Outcrop (11%) and Mollisols (14%)

P. Geologic Types: Sedimentary Limestones, shales and sandstones

Q. Miles of Stream Channels by Order or Class:

Intermittant: 18 miles

Perennial: 0 miles

R. Transportation System

Trails: miles Roads: 5.5 miles

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 4948 (unburned/low/moderate/mosaic) 126 (moderate) 210 (high)

B. Water-Repellent Soil (acres): 0

C. Soil Erosion Hazard Rating (acres):
 (low) 5158 (moderate) 210 (high)

D. Erosion Potential: 2 tons/acre

E. Sediment Potential: 1395 cubic yards / square mile

PART IV - HYDROLOGIC DESIGN FACTORS

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

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

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

D. Design Storm Duration, (hours): NA

E. Design Storm Magnitude, (inches): NA

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

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

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

PART V - SUMMARY OF ANALYSIS

A. Describe Watershed Emergency:

The Willey Fire is located approximately 20 miles southeast of Ashland, Montana within the Otter Creek drainage. The fire is bordered by Tenmile Creek on the north and Fifteenmile Creek on the south. Otter Creek is

a tributary to the Tongue River and was listed as a 303(d) stream prior to the creditable data policy for listing. There are no perennial streams within the burned area.

The landscapes are rough, broken, deeply dissected upland plains, consisting of steep buttes, that have exposed shale, broken slopes with walled drainageways, tabular divides, ridges and knobs. It is drained by branching drainageways that are gullied at the headwaters.

The two most predominant soil series mapped in the area are classified as shallow Ustic Torriorthents and Typic Ustorthents. These two soils comprise approximately 27% and 22% of the fire area. These soils are well drained and are moderately permeable. Runoff is medium to rapid depending on slope. The erosion hazard is moderate where protected but is severe when vegetation is removed. These soils have low fertility and low soil organic matter. Rock outcrop make up around (11%) of the fire area. Other soils in the fire area include Mollisols, Aridisols, and Alfisols. (Soil Survey of Powder River Area Montana, USDA Soil Conservation Service, 1971)

The probability of increased erosion and sedimentation is greater as a result of the fire but threats to human health and safety are minimal. The majority of runoff and erosion are most likely to come as a result of intense short duration summer thunderstorms. Precipitation expected to occur in the near future includes snow with some rain showers. Long term soil productivity is most likely not seriously compromised by this fire.

Burn Severity

The majority of the burned area is a mosaic of low and moderate severity with areas of unburned. However, high severity burned areas are present within the within the Dam Creek Watershed and above the Cloudburst Reservoir. A distinctive area of moderate severity was also identified within the Cloudburst Reservoir watershed.

Water Quality

Several intermittent and ephemeral drainages were burned. Water quality will be reduced due to the fire; this may include increases in organic carbons, ash, and sediment. These increases will likely be measurable within the sub-watersheds as well as within Tenmile and Fifteenmile Creeks.

Small Reservoirs/Impoundments

Cloud Burst Reservoir, Two Buck Reservoir, Dam Creek Reservoir, Fifteenmile Reservoir No.1, and Fifteenmile Reservoir No. 2 were evaluated in the field. The impoundments are unarmored native fill material that completed block the waterway. The storage capacities of all the reservoirs appear to be sufficient enough to control the expected storm runoffs, with the exception of Cloudburst Reservoir. The risk of the impoundment breaching is moderate. The stream drains into Tenmile Creek approximately 2,900 ft downstream of the impoundment. There are no structures located downstream from the impoundment and no emergency issue was identified. The storage capacity of Cloudburst has been reduced due to past sedimentation, but no emergency rehabilitation needs were identified.

Fifteen Mile Road

Forest Service Road (FSR) 4094 is located within the valley bottom of Fifteenmile Creek. There are six intermittent stream crossings that have a mosaic of low/moderate severity burned area upstream of the road. The low point on the road crossing is located at the stream crossing and there is a very low potential for stream capture or diversion in the event of culvert plugging. There is a low risk that the road may be overtopped by stormflows, but there are no emergency rehabilitation needs.

B. Emergency Treatment Objectives:

1. Treat existing known populations of noxious weeds.
2. Monitor spread of noxious weeds into and across the burn area and treat as necessary.

3. Monitor heritage resource sites within and adjacent to the burn for damage from erosion or sedimentation.
4. Monitor roads and water impoundment structures for damage from increased runoff and erosion.

C. Probability of Completing Treatment Prior to First Major Damage-Producing Storm:

Land NA % Channel NA % Roads NA % Other 95 %

D. Probability of Treatment Success

| | Years after Treatment | | |
|---------|-----------------------|-----|-----|
| | 1 | 3 | 5 |
| Land | N/A | N/A | N/A |
| Channel | N/A | N/A | N/A |
| Roads | N/A | N/A | N/A |
| Other | N/A | N/A | N/A |

E. Cost of No-Action (Including Loss):

F. Cost of Selected Alternative (Including Loss): \$15,250

G. Skills Represented on Burned-Area Survey Team:

☒ Hydrology ☒ Soils ☐ Geology ☐ Range
☒ Forestry ☐ Wildlife ☐ Fire Mgmt. ☐ Engineering
☐ Contracting ☐ Ecology ☐ Botany ☒ Archaeology
☐ Fisheries ☐ Research ☐ Landscape Arch ☒ GIS

Team Leader: John Lane, Soil Scientist, Custer National Forest

Email: jrlane@fs.fed.us

Phone: 406-657-6200

FAX: 406-657-6222

H. **Treatment Narrative:**

Land Treatments:

Apply immediate herbicide control treatments on known noxious weed infestations. Identified sites have been ground-truthed and pose a threat for establishment, seed set, and spread into vulnerable areas. **Begin treatment as soon as possible and continue through the fall and into the spring.**

Channel Treatments:

No channel treatments are proposed.

Roads and Trail Treatments:

No road and trail treatments are proposed.

Structures:

No structural treatments are proposed.

H. Monitoring Narrative:

Through the use of a GS-7 seasonal employee for five days, monitor the spread of noxious weeds during the 2004 growing season. The estimated cost is \$1000. If monitoring indicates the fire has resulted in an accelerated spread of noxious weeds into and across the burn area, develop a treatment plan, modify the Burned Area Report, and submit it for funding.

Through the use of a GS-9 Range Specialist monitor Cloudburst Reservoir's storage capacity, especially following significant precipitation events. The potential for breaching during intense thunderstorm stormflows does exist; the potential increases as Cloudburst's storage capacity continues to decrease due to sedimentation. Sedimentation in Cloudburst is expected to increase during the next three years as the burned area recovers.

It is also recommended that the district examine the maintenance needs of FSR 4094 following significant precipitation events. Culverts at the intermittent stream crossings have the potential to become plugged by sediment and debris following precipitation events.

Through the use of a GS-9 archaeologist for 2 days and GS-12 archaeologist for 2 days, monitor heritage sites to determine if any erosion or sedimentation has resulted in significant effects on the sites. Monitoring includes consultation time with the Crow Agency and Montana SHPO. If monitoring indicates the fire has resulted in accelerated erosion and sedimentation that is negatively impacting the heritate sites of concern, develop a treatment plan, modify the Burned Area Report, and submit if for funding.

Part VI – Emergency Rehabilitation Treatments and Source of Funds by Land Ownership

| Line Items | Units | Unit Cost | NFS Lands | | Other \$ | Other Lands | | | All Total \$ |
|-----------------------------------|-------|-----------|------------|-----------------|----------|-------------|------------|-----------------------|-----------------|
| | | | # of Units | WFSU SULT \$ | | # of units | Fed \$ | # of Units Non Fed \$ | |
| A. Land Treatments | | | | | | | | | |
| Control Noxious Weeds | Job | 1000 | 1 | \$1,000 | | | \$0 | \$0 | \$1,000 |
| | | | | \$0 | | | \$0 | | |
| | | | | \$0 | | | \$0 | \$0 | \$0 |
| | | | | \$0 | | | \$0 | \$0 | \$0 |
| <i>Subtotal Land Treatments</i> | | | | \$1,000 | | | \$0 | \$0 | \$1,000 |
| B. Channel Treatments | | | | | | | | | |
| | | | | \$0 | | | \$0 | \$0 | \$0 |
| | | | | \$0 | | | \$0 | \$0 | \$0 |
| | | | | \$0 | | | \$0 | \$0 | \$0 |
| | | | | \$0 | | | \$0 | \$0 | \$0 |
| <i>Subtotal Channel Treat.</i> | | | | \$0 | | | \$0 | \$0 | \$0 |
| C. Road and Trails | | | | | | | | | |
| | | | | \$0 | | | \$0 | \$0 | \$0 |
| | | | | \$0 | | | \$0 | \$0 | \$0 |
| | | | | \$0 | | | \$0 | \$0 | \$0 |
| | | | | \$0 | | | \$0 | \$0 | \$0 |
| <i>Subtotal Road & Trails</i> | | | | \$0 | | | \$0 | \$0 | \$0 |
| D. Structures | | | | | | | | | |
| | | | | \$0 | | | \$0 | \$0 | \$0 |
| | | | | \$0 | | | \$0 | \$0 | \$0 |
| | | | | \$0 | | | \$0 | \$0 | \$0 |
| | | | | \$0 | | | \$0 | \$0 | \$0 |
| <i>Subtotal Structures</i> | | | | \$0 | | | \$0 | \$0 | \$0 |
| E. BAER Evaluation | | | | | | | | | |
| Team cost | | | | \$6,500 | | | \$0 | \$0 | \$6,500 |
| | | | | \$0 | | | \$0 | \$0 | \$0 |
| | | | | | | | | | |
| G. Monitoring Cost | | | | \$3,000 | | | \$0 | \$0 | \$3,000 |
| | | | | | | | | | |
| H. Totals | | | | \$10,500 | | | \$0 | \$0 | \$10,500 |
| | | | | | | | | | |

PART VII - APPROVALS

1. _____
Forest Supervisor (signature)

August 25, 2003
Date

2. _____
Regional Forester (signature)

Date