

Date of Report: July 23, 2012

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
 ☐ 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: Ash Creek and Taylor Creek B. Fire Number: MT- CNF - 000030
C. State: Montana D. County: Powder River
E. Region: Northern (1) F. Forest: Custer
G. District: Ashland H. Fire Incident Job Code: P842007
I. Date Fire Started: 06/25/2012 J. Date Fire Contained: 7/12/2012
K. Suppression Cost: TOTAL: \$12,782,569
L. Fire Suppression Damages Repaired with Suppression Funds
1. Fireline waterbarred (miles): Handline 5; Dozerline - 475
2. Fireline seeded (miles): 0
3. Other (identify): 0
M. Watershed Numbers:

Ash & Taylor Fires HUC6 #	Ash & Taylor Fires HUC6 names
100901020703	Liscom Creek
101000030511	Greenleaf Creek
100901020505	Tongue River-Bringoff Creek
100901021102	Lower Little Pumpkin Creek
100901020604	Lower Beaver Creek
100901020603	Middle Beaver Creek

Ash & Taylor Fires HUC6 #	Ash & Taylor Fires HUC6 names
100901020602	Ash Creek
100901020504	Tongue River-Colbert Coulee
100901020601	Upper Beaver Creek
100901021101	Upper Little Pumpkin Creek
100901021003	Pumpkin Creek-Fiftyfour Creek
100901020503	Reservation Creek
100901020501	Tongue River-Double E Creek
100901020304	East Fork Otter Creek
100901020502	Stebbins Creek
100901020410	Logging Creek
100901020303	Home Creek
100901020411	Tongue River-Walking Horse Coulee
100901021002	Pumpkin Creek-Doonan Gulch
100901020305	Otter Creek-Newell Creek
100901020409	Tongue River-King Creek
100901020302	Threemile Creek
100901020210	Otter Creek-Brian Creek
100901020208	Elk Creek
100901020206	Lyon Creek
100902070206	Bloom Creek
100901020205	Taylor Creek
100901020204	Indian Creek
100901010803	Lee Creek

N. Burned acres by Ownership

Ownership	Ash Creek Fire	Taylor Creek Fire	Boyce Fire	Total Acres
Private	108,996	7,835	172	117,003
State	8,854	0	0	8,854
Northern Cheyenne	42,493	0	0	42,493
BLM	906	102	0	1,008
Forest Service	88,465	54,192	556	143,213
Total Acres	249,561	62,129	728	312,418

O. VegetationTypes: Ponderosa pine, juniper, and grassland ecotypes.

P. Dominant Soils: Dominant parent materials are slope alluvium and colluvium over residuum derived from softly consolidated interbedded silt, clay and sandy shales. Dominant soils are classified at the family level as Clayey/fine-silty/loamy/loamy skeletal over fragmental, frigid Typic Ustorthents/Haplustolls/Argiborolls with channery loam to silt/clay loam surface textures. Surface rock fragments range from 10 to 30 percent and vary in size from gravels to channers.

Q. Geologic Types: Tongue River Member of Fort Union Formation (Tftr)—Yellowish orange sandstone, sandy and silty carbonaceous shale, and coal.

R. Miles of Stream Channels by flow regime:

FIRE	PERENNIAL	INTERMITTENT/EPHEMERAL	TOTAL
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FIRE	PERENNIAL	INTERMITTENT/EPHEMERAL	TOTAL
ASH CREEK-NFS	2.1	309.3	311.4
TAYLOR CREEK- NFS	0.0	188.5	188.5
BOYCE-NFS	0.0	2.5	2.5
TOTAL	2.1	500.3	502.4

S. Transportation System (NFS only):

Open Road miles

Fire Name	Sum of Miles
Ash Creek Fire	98.58
Other Public Roads	13.07
Roads Open to All Vehicles, Yearlong	10.35
Roads Open to Highway Legal Vehicles Only, Yearlong	33.51
State or US Highway	41.65
Taylor Creek Fire	23.12
Other Public Roads	14.93
Roads Open to Highway Legal Vehicles Only, Yearlong	8.20
Total	121.70

Open Motorized Trail miles by fire name

Fire Name	Sum of Miles
Ash Creek Fire	84.06
Trail Special Designation, Yearlong	71.49
Trails Open to Vehicles 50 inches or Less in Width, Yearlong	12.58
Boyce Fire	0.27
Trail Special Designation, Yearlong	0.27
Taylor Creek Fire	64.91
Trail Special Designation, Seasonal	2.44
Trail Special Designation, Yearlong	62.47
Grand Total	149.25

Administrative Use routes by fire name

Row Labels	Sum of Miles
Ash Creek	59.04
ADMIN	59.04
Taylor Creek	11.57
ADMIN	11.57
Grand Total	70.61

PART III - WATERSHED CONDITION

A. Burn Severity (NFS acres ONLY):

Fire	Unclassified	Unburned	Low Severity (Forest and Non-Forest)	Moderate Severity	High Severity
Ash Creek		10235	49858	16451	11227
Taylor Creek	3000	5000	33915	10945	1088
Boyce			556		
Burned NFS Acres by Vegetation Type		Ash Creek Fire Acres (%)	Taylor Fork Fire Acres (%)	Boyce Fire Acres (%)	
Sparse Vegetation		450 (1%)	423 (1%)		
Grassland - Dry		41,813 (47%)	35,552 (66%)	555 (100%)	
Grassland - Moist		2,201 (2%)	115 (T)		
Shrub - Moist		2,844 (3%)	1,369 (3%)		
Shrub - Dry		1,491 (2%)	81 (T)	1 (T)	
Ponderosa Pine		39,015 (44%)	16,482 (30%)		
Green Ash		636 (1%)	168 (T)		
Water		15 (T)	3 (T)		
Total		88,465	54,193	556	

B. Water-Repellent Soil (acres): Ash Creek Fire: moderate to strong and shallow to deep: Ash Creek Fire 67,500 acres; Taylor Creek Fire 31,900 acres.

C. Soil Erosion Hazard Rating (acres)

(low) Ash Ck 15,300 acres, Taylor Ck 19,250 acres

(moderate) Ash Ck 61,200 acres, Taylor Ck 24,750 acres

(high) Ash Ck 6,300 acres, Taylor Ck 7,150 acres

D. Erosion Potential: 4.5 tons/acre Ash Ck, 4.0 tons/acre TaylorCreek Fire (ERMiTT results for moderate severity)

E. Sediment Potential: 575 tons cubic yards / square mile (25% of surface erosion delivered)

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years): 1-5

B. Design Chance of Success, (percent): 80

C. Equivalent Design Recurrence Interval, (years): 5

D. Design Storm Duration, (hours/minutes): 6 hour/30 minutes

E. Design Storm Magnitude, (inches): 1.4 inches/0.8 inches

F. Design Flow, (cubic feet / second/ square mile): 3.5 cfs/mi²

G. Estimated Reduction in Infiltration, (percent): 28

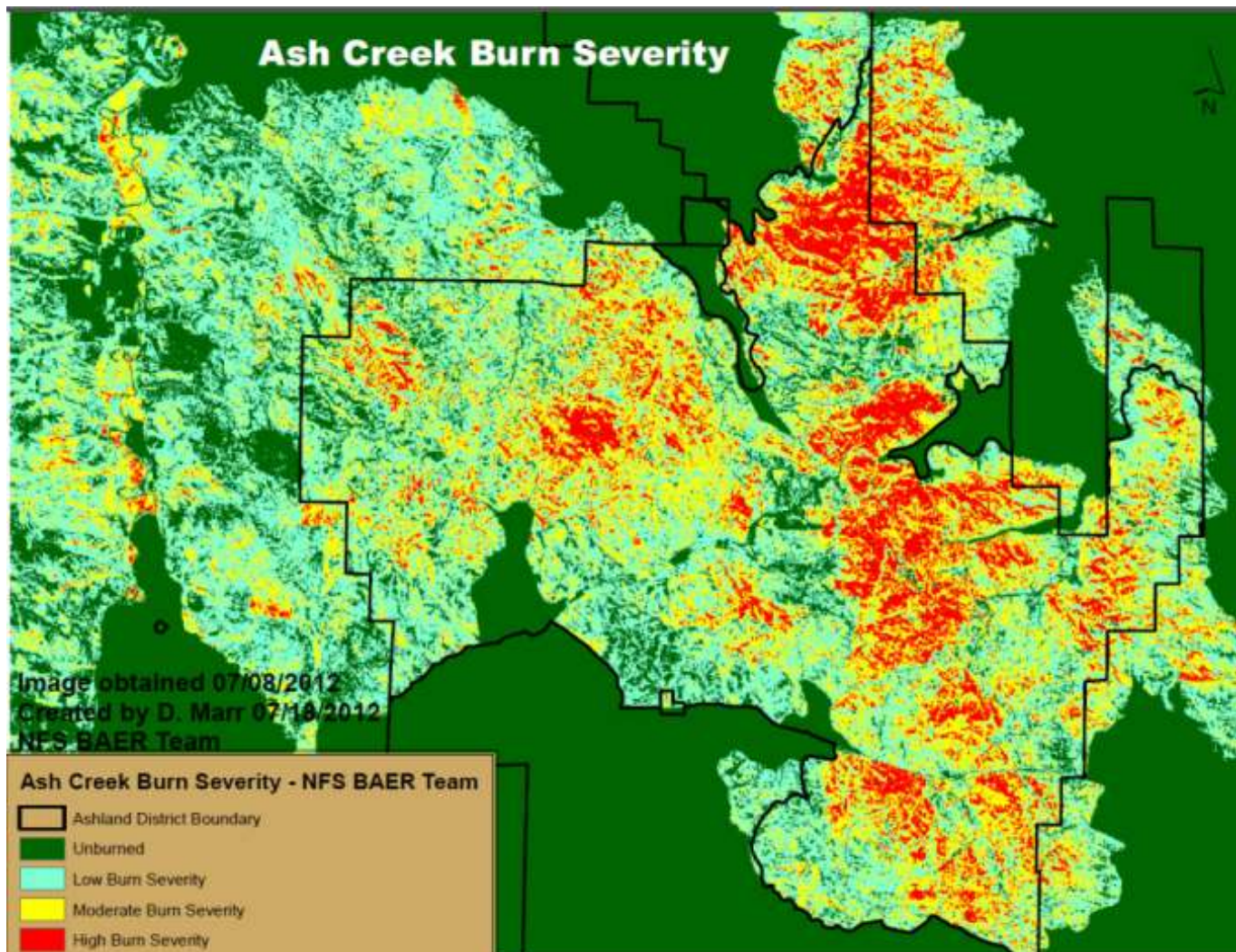
H. Adjusted Design Flow, (cfs per square mile): 61 cfs/mi² (These are general figures representing the entire burned area, past post fire measurements indicate considerably higher post fire runoff is possible (Parrett et.al. 2003 USGS WRIR 03-4319).

PART V - SUMMARY OF ANALYSIS

A. Critical Values/Resources and Threats:

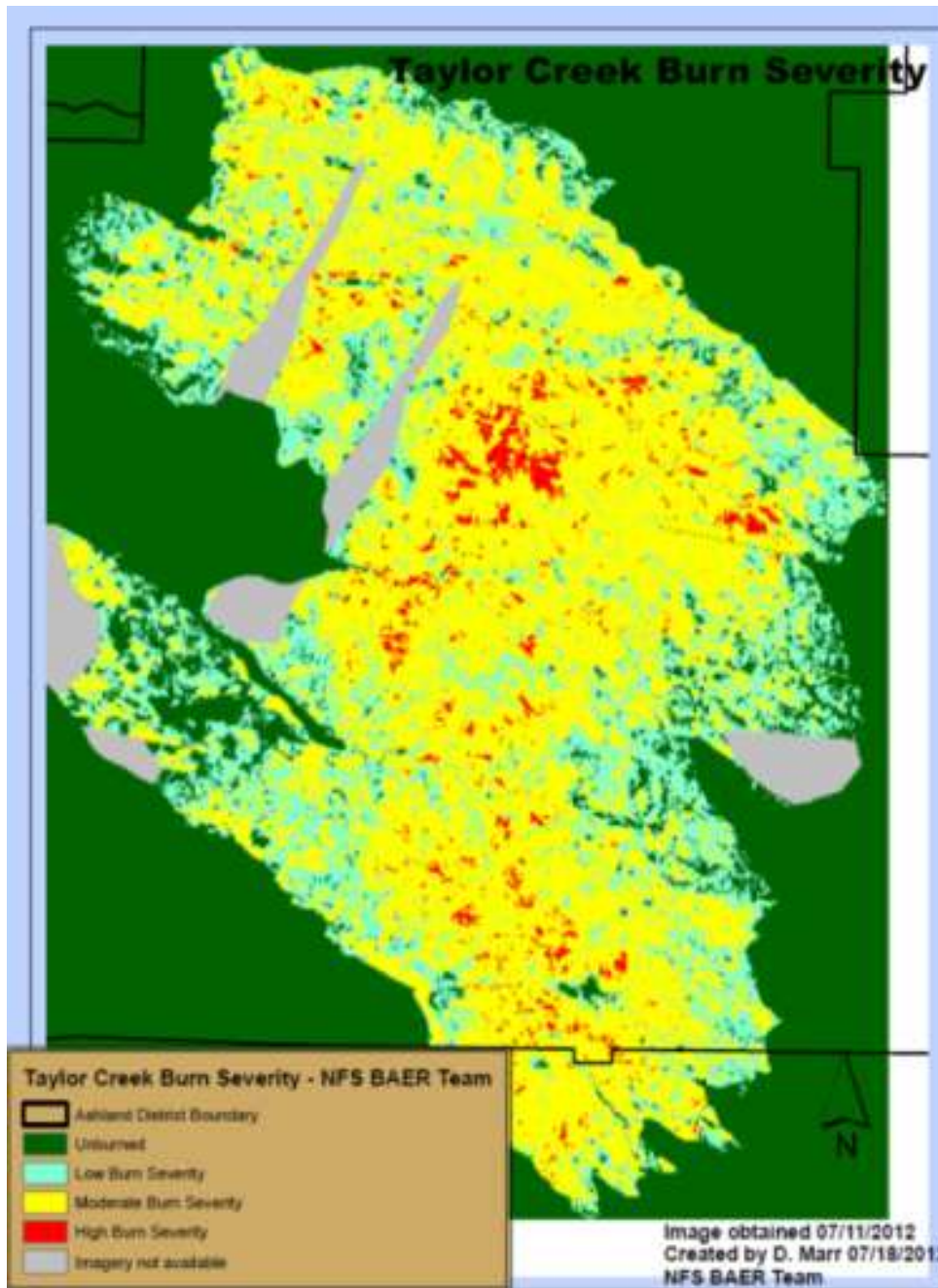
Summary of Watershed Response

On the Ashland Ranger District the winter of 2011/2012 was very dry without the typical June rains, resulting in extremely dry fuel conditions. Much of the Taylor Creek and Ash Creek fires occurred under severe burning conditions (temperatures over 100 degrees, 30-50 mph winds, and relative humidity <10%). The Ash Creek and Taylor Creek fires were massive in size (312,000 acres) with extensive areas of high burn intensity, particularly on portions of National Forest which had the highest concentrations of Ponderosa pine.



The Ash Creek Fire had substantial areas of high severity burn on the National Forest (eastern) portion of the fire within the Ashland District boundary. The fire burned very quickly through non-forested areas with substantial areas of mosaic non-burn and most of the red areas in the map above are high burn intensity with moderate burn severity. However the Ponderosa pine stands, which had higher fuel loadings, generally

burned much hotter, particularly on north facing slopes. These areas have the majority of the post fire values at risk that can be addressed by the Burned Area Emergency Response (BAER) authorities.



The Taylor Creek fire also was extremely fast moving with a preponderance of moderate burn severity areas. Like the Ash Creek fire, the concentrated areas of Ponderosa pine burned with high intensity/severity with localized areas with values at risk – primarily roads and cultural resources on the National Forest. In both the Ash Creek and Taylor Creek fires, downslope and downstream areas of concern on private land were judged by the NRCS staff as minimal.

With the loss of ground cover from burning and water repellent (hydrophobic) conditions found throughout the Ash and Taylor Creek fire areas there is a risk of post-fire erosion from a short duration-high intensity rainstorm in the next several years. Areas within the moderate intensity burn are of greatest extent and could have up to 6.1 tons ac^{-1} of potential erosion, a six-fold increase over background erosion rates. The lack of canopy cover and exposure of bare soil could exaggerate the potential erosion in these areas. Grasslands comprise a substantial area within fire perimeters, particularly on private land. While most grassland vegetation (grass, forbs, sagebrush) was consumed, fires in these areas burned quickly and

did minimal soil heating. Burned severity across grasslands was determined to be low with only a few scattered areas of moderate or high severity where pockets of heavy fuel were present.

Moderate severity with moderate to high intensity fire occurred across the majority of the burned timberlands. Hydrophobic soils exist throughout the complex. Severity and depth vary by fire and burn severity. Tributary headwaters are generally steep to very steep. Significant hydrologic response from high intensity rain events is anticipated in all small tributary drainages that burned under these conditions. Excessive overland flow is likely with concentrated flow developing in these tributary channels. The Ashland area has a documented potential of producing robust storm flow response to wildfires. Parrett (2003), in a study of runoff response following fires in 2000 found significant discharges in 2001 and 2002. A 3.1 mi^2 drainage near Ashland, Montana, a <2 year recurrence interval 15 minute storm of $0.29''$ created >500 year recurrence interval runoff event. A second 15 minute intervals storm in a nearby watershed was $0.86''$ or a 25 year recurrence interval.

This storm also yielded >500 year recurrence intervals runoff from a 14 mi² watershed. Smaller watersheds tended to yield the most per unit area, one small watershed (0.1 to 0.2 mi²) may have discharged equivalent to as much as 6500 cfs/mi²- considerably more than a 500 year recurrence interval. These small normally dry, channels with ephemeral flow regimes when burned may produce flood flows with sufficient magnitude to down cut through deep colluvium and transport sediment to valley bottoms downslope. Debris torrents can be anticipated from these channels due to bulking of floodwaters with eroded soils, channel bed scour, and organic debris. Because summer convectional thunder storms generally are short duration and generally less than 5 miles in size, flood flows will diminish as burned tributary channels enter higher order channels downstream.

Fire intensity was generally high enough to scorch the entire crown of most trees that burned with moderate to high intensity. It is anticipated that high mortality will occur in the Ponderosa pine timber stands in both the Ash Creek and Taylor Creek fires. In these areas vegetative recovery will be slow and therefore post-fire hydrologic response is expected to last five or more years. Smaller tributary drainages that burned with moderate to high severity will be the most likely produce localized flood discharge levels that may exceed capacities of culverts located down gradient. Significant flood flows into Otter Creek, Beaver Creek, or the Tongue River are not anticipated since considerable, inefficient low gradient channels buffer discharge surges below the Forest boundary. The 728 acre Boyce Fire (556 on NF) was a grassland fire and no BAER values at risk (those values appropriate for BAER (*emergency*) funding) were identified.



High intensity burn Ponderosa burn area in the Ash Creek fire (*note the high density of stems, had fire played a more natural role only 40 to 60 stems per acre might have been present rather than many hundreds*). A majority of the high intensity burn on the Ash Creek fire was on National Forest lands. The soil burn severity in these areas was judged to be predominantly moderate with pockets of high severity burn. Road segments and cultural resource areas with these heavily burned areas comprise the majority of the Values at Risk – predominantly roads and localized cultural resource sites.



Portions of Ash Creek and larger areas of the Taylor Creek fires had substantial areas of moderate burn intensity as illustrated at left by the burned Ponderosa pine areas with needle retention. These areas were usually rated as low burn severity. The non-forested areas in the photo are burned grasslands with low burn intensity (due to limited fuels) and low severity. The moderate burn severity areas had a few identified Values at Risk or identified treatment needs. No treatments were identified in low burn severity areas.

Values at Risk:

Risks were assigned based on Interim Directive No. **2520-2010-1**.

The BAER interdisciplinary team identified issues that result from fire effects within the Ash Creek and Taylor Creek fires. The primary watershed effects from the fires include a potential reduction in infiltration, due to water repellency, with the resulting increase in potential runoff. Increased runoff, especially where the vegetation and surface duff layer has been burned will result in increased potential for higher peak flows, soil erosion, and sedimentation, particularly on the National Forest portion of the Ash Creek Fire. Protection of life and property were given high priority. After examination of the fire area the BAER team, in consultation with other specialists, identified the following values at risk. The following post-fire effects and identified values at risk were identified and addressed where possible with BAER treatment proposals:

- Road System:** Both Ash Creek and Taylor fires have 242 and 100 miles of system roads respectively. These roads provide the transportation network needed to provide Forest management objectives and access to private lands. Historically, intense burned areas have resulted in substantial damage to National Forest roads on the Ashland District. The Ash Creek fire and to a less degree the Taylor Creek fire have considerable areas of National Forest system roads in high burn intensity areas. These roads are vulnerable to accelerated erosion from increased overland flow from burn areas, excessive ditch erosion, loss of road fill, filling of drain structures, and damage or washing out of road culverts. Road segments were identified which have the most potential post-fire road surface drainage problems and/or under-sized culverts unable to handle post-fire stream flows as a result of the increased runoff. Proposed treatments are primarily for storm proofing techniques to handle the wildfire design storm flows.
- Heritage/Cultural Resources:** Over 500 previously recorded sites are located within the fire perimeter of the Ash Creek and Taylor Creek fires, most of which were burned over to varying degrees. Site types include prehistoric lithic scatter, rock art, sites associated with the Civilian Conservation Corps, and historic homesteads. Of these burned cultural resource sites, one site is on the National Register of Historic Places and ten others are likely candidates to be added to this Register. The greatest loss has occurred to the historic homesteads found throughout the wildfire as most of the structures were completely consumed. The majority of the sub-drainages above many of these sites have burned. With anticipated increased watershed flows for these post fire sub-drainages, the likelihood of detrimental impacts to these sites is high which could result in permanent loss.

- **Electronic Facility Under Special Use Permits and Developed Recreation sites.** Damage to the Home Creek electronic sites, electronic site access, power-line infrastructure, Whitetail Cultural site and Administrative Site/Cabin, and Holiday Campground and Cultural site, are all BAER Values at Risk found on National Forest System lands. The Home Butte Electronic Site houses repeater equipment for several emergency responder cooperators including 911 Services through Powder River County Sheriff and Rosebud County Sheriff. Other cooperators with communication equipment on the site include BLM, USFS, DNRC, Powder River TV, State Highway, Tongue River Electric, Mid-Rivers Telephone, Range Telephone, and FBI. Some of the repeaters and equipment were damaged or destroyed by the fire. Cooperators frequently access the site (at least twice a week under normal circumstances) and predicted to have more frequent access to repair/replace equipment affected by the fire. Keeping these emergency lines of communication open and safe to maintenance workers is of a critical nature. The largest emergency access/safety issues include road washouts and hazard trees.
- **Soil Productivity:** High intensity rainfall during the first several years following the Ash Creek and Taylor Creek fires will accelerate soil erosion. The loss of a major portion of the topsoil could significantly reduce soil productivity of those sites. In addition, pre-fire populations of noxious weeds are anticipated to significantly increase as a result of the fire and potentially impact soil productivity. While soil productivity is an important, it is not by itself a treatable BAER Value at Risk. Therefore, no specific treatments have been proposed to mitigate impacts to soil productivity from the fires.
- **Water Quality:** Increased sediment and nutrient yields are anticipated from portions of watersheds that burned at moderate or greater severity. Some populations of aquatics may continue be impacted particularly in Beaver Creek from the Ash Creek fire and Otter Creek from both the Ash Creek and Taylor Creek fires. While water quality is very important, due to a lack of downstream values likely to be adversely affected, no stand-alone treatments such as broad scale mulching and seeding have been proposed to mitigate impacts. However, many of the requested road treatments to protect infrastructure will reduce risks of erosion and impacts to water quality.
- **Potential Loss of Native Vegetation and Ecological Integrity due to Weed Infestation and Spread** For most noxious weed species identified in the fire complex, disturbed sites and dry potential vegetation types are the most at risk from invasion and spread. Disturbed areas would be roads, gravel pits, dispersed recreation sites, livestock spring developments and where ground disturbing fire suppression actions occurred (dozer lines, hand lines, helispots, safety zones, and drop points). Heavy sedge (*Carex. grvida* var. *grvida*) occurs in five eastern Montana counties. The closest known populations (2) are within the Ash Creek burn area near the Cook Mountain Divide creating a potential for spread through the fire area. Weed assessment and treatment of fire induced weed spread is requested.
- **Potential Loss of Native Vegetation Recovery and Soil Stabilization without Livestock Deferment** Fires can be a devastating event, but at the same time, fire can provide many benefits to rangeland. Managing rangeland after fire can mean the difference between rangeland improvement or rangeland damage. The ability of rangelands to recover and produce forage following the fire depends on three factors – moisture conditions, time of burning, and management in the following years. One cannot control the first two factors, but livestock deferment of about 5,500 cow/calf pairs and 2,200 yearlings until late in the 2013 grazing season will help rangelands recover and soil to stabilize.

In accordance with the revised Forest Service manual, the risk matrix below, Exhibit 2 of Interim Directive No.: 2520-2010-1, was used to evaluate the Risk Level for each value identified during the Ash Creek and Taylor Creek fires BAER assessment. Only treatments that had a risk of Intermediate or above are recommended for BAER authorized treatments.

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

For the Ash Creek and Taylor Creek fires the risk levels by resource included soils, roads, weeds/sensitive plants, electronic site, recreation sites, and cultural resources. Only roads, weeds/sensitive plants, electronic site, campground, and cultural resources had risk levels of intermediate or greater and therefore are the only resources recommended for BAER funded treatments. Administrative action will be taken for livestock deferment and BAER funds are not requested for this action.

Probability of Damage or Loss	Magnitude of Consequences		
	Major	Moderate	Minor
	RISK		
Very Likely	Very High Home Butte electronic site	Very High	Low
Likely	Very High roads cultural resources, Holiday campground,	High weeds/sensitive plants	Low
Possible	High	Intermediate soil productivity	Low fisheries
Unlikely	Intermediate	Low water quality	Very Low

B. Emergency Treatment Objectives:

- Roads - Mitigate effects of changed post-fire watershed responses (runoff, erosion, and deposition) by stormproofing selected road areas, and protect human life and safety at specific locations where Forest roads and stream crossings are at risk of damage or failure.
- Provide for safety and facility/resource protection from hazard trees at Home Butte electronic site, White Tail administrative/cultural Cabin site, Holiday Campground/cultural site, and in concentrated work areas for BAER road treatments.
- Weeds and native vegetation recovery - Reduce the risk of expansion of existing infestations of noxious weeds and allow burned plant communities to recover more rapidly.
- Mitigate effects of changed post-fire watershed response on cultural resources.
- Mitigate effects of changed post-fire watershed response on watershed condition.

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

Land 90 % Channel na % Roads/Trails 90 % Protection/Safety 95 %

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land (weeds)	50	70	90
Land (site protection)	95	95	95
Channel	na	na	na
Roads/Trails	95	85	75
Protection/Safety	90	85	80

E. Cost of No-Action (Including Loss): \$5,870,200

F. Cost of Selected Alternative: \$1,122,340

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 type="checkbox"/> Wildlife	<input type="checkbox"/> Fire Mgmt.	<input checked="" 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

Team Leader: Mark Story

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Core Team Members:

- Dave Marr – Soil Scientist
- Dave Callery – Hydrologist
- Andy Efta – Hydrologist
- Wayne Green – Hydrologist
- Mark Story - Hydrologist
- Thomas Keck – Soil Scientist
- Jason Silvertooth – Soil Technician
- Nate Ward – Hydro/Soils Technician
- Dave Shimek – Engineer
- Mary Smith – Engineer
- Andy Wilber – Engineer Technician
- Mark Staples – Engineer Technician
- Megan Dawson – GIS/Range Specialist
- Halcyon LaPoint – Heritage
- Mike Bergstrom – Heritage
- Pat Raley – Heritage
- Ryan Melin- Range Specialist
- Kim Reid – Range/Botany/Noxious Weeds
- Scott Studiner, Range Specialist
- Jodie Canfield – Public Relations
- Steve Becker – NRCS Montana State Engineer
- Corey Swenson – NRCS, Range Management Specialist
- Dawn Doran – BLM, Range Specialist

H. Treatment Narrative:

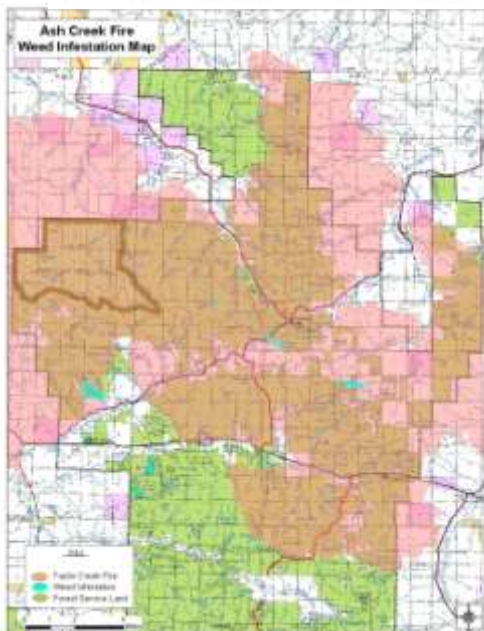
Land Treatments

Weed Treatments: The emergency to the resource caused by the fire is of a high priority, especially in those areas which have highly invasive species concentrations prior to the burn. About 300 gross acres of the Ash Creek Fire is predominately infested with spotted knapweed, Russian knapweed and St. Johnswort and 855 gross acres of the Taylor Creek Fire is predominately infested with spotted knapweed and leafy spurge. Even though weeds existed in pre-fire conditions, the seed banks in the soils associated with those infestations have long term viability aspects that will take advantage of post-fire conditions. Although the estimated net infested acreage is small in the context of the gross fire area, the entire 143,213 NFS acre Fire Complex area provides a seed bed where weed seeds can become established from several spread vectors and remain viable in the soil for years. Weed seed viability can last up to 20 years for spotted knapweed which can produce up to 40,000 seeds per plant; up to 10 years for St. Johnswort which can produce up to 500 seeds per plant; up to 10 years for spotted knapweed which can produce up to 1,200 seeds per plant; and up to 8 years for leafy spurge which produces up to 4000 pounds seed per acre and has a substantial rhizomatous root system.



Weed Infestations within the Taylor Creek Fire (cyan blue within brown burn area). The Taylor Creek Fire weeds are predominantly leafy spurge and spotted knapweed.

over 400 miles of dozer suppression lines were built in the Ash and Taylor Creek fires. 171 miles occurred on NFS lands and are considered prime weed beds, especially where there are known seed beds and infestations being in the area and suppression activities possibly moving seed source around suppression lines. Weed wash stations were established in Ashland with the Type 1 and 2 teams, however, a few days of initial attack activities did not have this preventative measure which makes some of the fire area more vulnerable to new weed seed sources.



The fires burned grassland and forest land, and eliminated natural competition for invaders. The fire-caused disturbance created perfect habitat for noxious weed invasion and expansion. If emergency mitigation activities are not implemented, this problem will very likely expand exponentially and will require extensive future resources to manage.

Recommended land treatments to mitigate the emergency are weed detection, herbicide weed treatment, and livestock deferment from burned areas during recovery of native vegetation. Proposed assessments treatments where needed will follow Forest Service regulatory requirements and protocols in accordance with existing 1986 Custer Forest Plan and 2006 Custer National Forest Weed Management EIS NEPA decisions.

BAER team vegetation experts assessed areas at risk from invasion and potential seed sources into these areas. Locations were identified for continued assessment to determine where treatment within one year of

fire containment will be needed to protect vulnerable vegetation resources. These areas will be the first priority for detection assessment and potential future noxious weed treatment. The second priority for detection assessment will be the remainder of the burned area.

Cultural Resource Treatments:

Post-burn overview of stone circle along Indian Creek drainage



At least 480 cultural resources, representing a wide range of cultural uses, are located within or adjacent to the fire perimeters that could potentially be affected by wildfire. Prehistoric site types include lithic scatters, cairns, petroglyphs, pictographs, rock shelters, stone quarries and stone rings. Historic sites types include homesteads, sawmills, fire lookouts (Phillips Butte, Diamond Butte, Liscom Butte), ditches, former schoolhouse locations (Home Creek), historic roads (Beaver Creek, Selway, Whitetail), trash dumps, corrals, and whiskey stills. Of particular concern and interest is the number and type of cultural resources associated with the Civilian Conservation Corps (CCC) that could be affected by the three wildfires. All significant (NRHP eligible), priority assets, potentially eligible and

unevaluated sites or portions of sites within the high severity burned area were carried forward for the consideration of effects in the recommended BAER treatments. Seventeen cultural resource sites were found to warrant immediate BAER treatment, including ten NRHP eligible sites. Recommended BAER treatments include burned tree removal and seeding of high severity burn areas. The table below describes cultural sites considered “at Risk” and recommended BAER treatment. No sites were located in the Boyce Creek Fire. Proposed Heritage resource treatments are listed in Appendix A.

Road Treatments: BAER funds are appropriate for treatment of anticipated fire erosion events on roads but not to improve roads to standards over pre-fire conditions. Road treatments will include Road #4772 , #4409 Cook Mtn Divide, #4463, #4773 Coal Creek, #4776, #4432K, #4133 Beaver Creek, #41334, #4425 Cabin Ck, #44601, #4778 Schoolhouse Draw, #4785 Camps Pass, #47731 Fred Isaacs Rd, #47696, #4434 Griffin Coulee, #4427, #4703 Lemonade Rd, #4769 Beaver-Stacey, #41334, #4450, #4776D, #44501, #4777 Suicide Pass, and #42123. The objectives of the road treatments are to stormproof the road investment from accelerated erosion, sediment transport, and sediment deposition on travel routes and reduce the sediment transfer from the routes while maintaining access to the Forest for administrative, private lands access, and public use. Road treatment units and costs are listed in Appendix B with treatment details in Appendix C.

Wildfire accelerated surface flows down roads are probable and if not treated will cause significant surface erosion and failure in localized areas. The NF roads in the fires road templates are typically out sloped, but a few have ditched sections with culverts. Vehicle travel during wet periods is a significant safety issue due to the slippery nature of the soil. Without the treatments, overland flow and soil erosion will damage both the roads as well as transfer additional sediment load into the aquatic system. It is likely that many of the routes will become impassible within the next year without treatment. Treatment of hazard trees will provide for a safe working environment for the rehab crews during contract administration. Only specific roads are targeted for hazard tree treatments and focused on erosion prevention not road standard improvement.

The majority of the stream crossings are proposed to be armored fords. The fords are cost effective and will provide protection to the road during the runoff events while at the same time not compromising runoff and

sediment conveyance or aquatic organism passage. Fords are much easier to clean and maintain than culverts after wildfire deposition events. However, 7 proposed culvert replacement upgrades are proposed, where fords are not appropriate to reduce the risk that stream flows will overtop the roads and damage the road and or culvert.

The Ash Creek Fire (within perimeter) has 241.68 miles of motorized routes of which only 67.4 miles are being proposed for stabilization treatments. The BAER treatments are focused on storm proofing the most important routes associated with the transportation system and in the priority watershed areas. Within the Taylor Creek Fire perimeter there are 99.6 miles of motorized routes of which only 12.8 miles are being proposed for stabilization treatments.



The treatments for the roads consist of a variety of storm proofing techniques including blading the roads and restoring drainage, constructing armored drainage dips and sags, limited seeding on 3 roads where slopes are extreme and the burn was intense, hazard tree removal to provide for safety during BAER contract administration, low water crossing reconstruction, and upsizing culverts. Armoring drainage dips and sags is essential due to the highly erosive nature of the soil in the Ash Creek and Taylor Creek fires. Armoring will be completed in selected segments with a local shale material that is inexpensive but provides protection against rutting and reduces sediment movement. The photo to the left is an example of a previously installed concrete jersey barrier which handled stormflow runoff on the Ash Creek fire during a

July 5 event near the end of the active burning. These type of structures are economical and avoid the bedload blockage of culvert issue. To the extent possible, armored fords rather than culverts were used in the BAER design for the Ash Creek and Taylor Creek fires.

Protection and Safety Treatments: The Ash Creek Fire burned around one electronic site (and associated infrastructure) and two developed recreation/cultural sites inside the fire perimeter. The Home Creek Electronic Site has repeater equipment for several emergency responder cooperators including 911 Services through Powder River County Sheriff and Rosebud County Sheriff. Other cooperators with communication equipment on the site include BLM, USFS, DNRC, Powder River TV, State Highway, Tongue River Electric, Mid-Rivers Telephone, Range Telephone, and FBI. Some of the repeaters and equipment were damaged or destroyed by the fire. Cooperators frequently access the site (at least twice a week under normal circumstances) and are predicted to more frequently access it to repair/replace equipment affected by the fire. The access is through the Suicide Road which runs approximately 6 miles within the fire perimeter with 3.1 miles particularly exposed to hazard trees. The power line that services the electronic site runs through mostly open areas, but goes through some burned timber stands with imminent hazard trees. Keeping these emergency lines of communication open and safe to maintenance workers is critical.

The developed sites affected by the fire include Holiday Campground and Whitetail Administrative Site / Cabin. Both sites are considered cultural priority assets as they were built by the CCC. Whitetail Cabin is used as both an administrative site and rental cabin and Holiday Campground is an accessible developed site. Both sites have many surrounding trees within falling distance that were affected by fire.



Access road to the Home Creek Electronic site after the Ash Creek fire. The access road and electronic site have a substantial number of hazard trees likely to fall over the access road and at the electronic sites. 930 hazard trees are in imminent danger of falling on this access road as well as 210 trees at the electronics site.



Holiday Campground and Cultural site. The Fire Complex left approximately 112 imminent high risk burned trees within falling distance of Holiday Campground and Whitetail Cabin site where fire intensity was considered moderate. This 2500-8 proposes to fund all of the hazard tree removal at these sites with BAER funds since both sites pose a substantial hazard to Forest Service administrative workers and the general public.

I. Monitoring Narrative:

Heritage Resources: Funding is needed to monitor the treatment effectiveness of the 13 heritage resource BAER treatment sites detailed in Appendix A. The monitoring will focus on seeding effectiveness and associated vegetative recovery at the sites. The monitoring presence will also discourage illicit collection and vandalism.

Storm Patrol/Road Closure Effectiveness: Storm patrols will identify road problems such as plugged culverts, washed out roads, and hazard tree blocking of the road to the Home Butte Electronic site. The patrols will take appropriate measures to clear, clean, and block roads that have received damage. Storm patrol personnel will also determine whether any damage requires heavy equipment. Road closures will be monitored to determine if vehicle trespass is occurring and what additional measures can be implemented to further restrict access. Total cost estimate = 20 days x \$270/day = \$5,400.

Part VI – Emergency Stabilization Treatments and Source of Funds

A. Land Treatments	Units	Unit Cost	# of Units	BAER \$	Other\$
Weed detection & herbicide treatment	AC	\$147	905	\$133,000	
Livestock Deferment - No Cost	JOB	0	0	\$0	
Cultural Resource Site Hazard Tree Removal and seeding – 13 sites Detailed descriptions in Appendix A	Site	\$800	13	\$10,400	

