

Date of Report: Sept. 9, 2011

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 DESCRIPTIONA. Fire Name: Diamond ComplexB. Fire Number: MT-MCD-000391C. State: MontanaD. County: Powder RiverE. Region: Northern (1)F. Forest: CusterG. District: AshlandH. Fire Incident Job Code: PDGB0C (1502)I. Date Fire Started: 08/22/2011J. Date Fire Contained: 09/05/2011K. Suppression Cost: TOTAL: \$48,000,000 (MILL 1.4M, LITTLE FORK 3.2M, MAVERICK 0.15M)

L. Fire Suppression Damages Repaired with Suppression Funds

1. Fireline waterbarred (miles): Handline - 1; Dozerline - 52
2. Fireline seeded (miles): 0
3. Other (identify): 0

M. Watershed Numbers: 100901020703, 100901020603, 100901020104, 100901020201, 100901020202, 100901020203, 100902070205, 100902070206

N. Mill Fire- Total Acres Burned: 6,885, NFS (6,313) Other Federal (0) State (330) Private (242)
Maverick Fire- Total Acres Burned: 11,147, NFS (3,920) BLM (4,394) State (158) Private (2,675)
Little Fire- Total Acres Burned: 34,309, NFS (2,662) BLM (6,130) State (1,769) Private (23,748)

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 subgroups include Ustic Torriorthents, Ustic Haplargids, Lithic Haploborolls, Typic Argiborolls, Typic Haploborolls, and Typic Ustorthents. Depths are mostly shallow to moderately deep. The dominant soils are classified at the family level as loamy/loamy skeletal to clayey 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: Interbedded silt, clay, and sandy shales.

R. Miles of Stream Channels by flow regime:

FIRE	PERENNIAL	INTERMITTENT/ EPHEMERAL	TOTAL
MILL- NFS	<1	25	25
MILL- NON NFS	0	4	4
MAVERICK- NFS	0	20	20
MAVERICK- NON NFS	0	33	33
LITTLE FORK- NFS	<1	11	11
LITTLE FORK- NON NFS	19	118	137
TOTAL	19	211	230

S. Transportation System (NFS only):

FIRE	Motorized Routes	Non- motorized Routes
MILL	13	0
MAVERICK	11	0
LITTLE FORK	9	0
TOTAL	32	0

PART III - WATERSHED CONDITION

A. Burn Severity (NFS acres ONLY):

FIRE	HIGH	MODERATE	LOW	UNBURNED	GRASSLAND (LOW)	TOTAL
MILL	108 (2%)	2184 (35%)	410 (6%)	532 (8%)	3079 (49%)	6313 (100%)
MAVERICK	21 (1%)	683 (17%)	524 (13%)	162 (4%)	2530 (65%)	3920 (100%)
LITTLE FORK	21 (1%)	653 (25%)	179 (7%)	92 (3%)	1718 (65%)	2662 (100%)
TOTAL	150 (1%)	3519 (27%)	1113 (9%)	787 (6%)	7326 (57%)	12895 (100%)

B. Water-Repellent Soil (acres): Mill Fire: moderate to strong and deep (2,292 ac.), Maverick Fire: moderate and shallow (704 ac.), Little Fork Fire: moderate to strong but shallow (674 ac.)

C. Soil Erosion Hazard Rating (acres):

1,168 (low) 2,319 (moderate) 8,825 (high)

D. Erosion Potential: 10.4 tons/acre (ERMiTT results for moderate severity)

E. Sediment Potential: 1,232 cubic yards / square mile (25% of surface erosion delivered)

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years):	<u>1-5</u>
B. Design Chance of Success, (percent):	<u>80</u>
C. Equivalent Design Recurrence Interval, (years):	<u>5</u>
D. Design Storm Duration, (hours):	<u>6 hour</u>
E. Design Storm Magnitude, (inches):	<u>1.4 inches</u>
F. Design Flow, (cubic feet / second/ square mile):	<u>5 cfs/mi²</u>
G. Estimated Reduction in Infiltration, (percent):	<u>61</u>
H. Adjusted Design Flow, (cfs per square mile):	<u>86 cfs/mi²</u>

PART V - SUMMARY OF ANALYSIS

A. Describe Critical Values/Resources and Threats:

NOTE: Threats and VAR's described below are for NFS land. Where available, information on non-NFS land is provided.

THREATS:

Across the Complex, the climate is arid with an annual average rainfall of 12 to 18 inches. Spring rain accounts for the majority of the annual precipitation and generally occurs between April and June. Convective summer thunderstorms can result in high intensity rain events on a semi-annual basis (0.5"- 2yr, 15 min., .96"- 5yr, 60 min).

Grasslands comprise the majority of the area within fire perimeters. While most grassland vegetation (grass, forbs, sagebrush) was consumed, ground fuels were minimal and the fire passed rapidly. Burned severity across all grasslands was determined to be low, with very minor, unmappable inclusions of moderate and high.

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. These normally dry, vegetated channels with ephemeral flow regimes will likely produce flood flows with sufficient magnitude to downcut through deep colluvium and transport sediment to valley bottoms downslope. However, flood flows are expected to diminish as burned tributary channels enter higher order channels down gradient. Debris torrents (mudflows) are not anticipated, but bulking of floodwaters from bedload and organic debris is highly probable.

Although fire intensity was generally low enough to limit the amount of crown consumed in timber stands, it was 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 these timber stands. However, since most crowns were not consumed, significant needle cast is anticipated across the complex. This will help reduce rainfall impact and may improve rainfall infiltration into soils, thereby reducing or dampening overland flows.

The Mill Fire had the most contiguous and dense timber stands of the Complex. Recent snow damaged and wind thrown trees added to excessive ground fuels. This resulted in the largest contiguous blocks of moderate and high severity burn. It also produced stronger and deeper hydrophobic effects to soils than the other fires.

Significant hydrologic response is more likely within Mill Fire tributary channels than the other fires. Vegetative recovery will be slow and therefore post-fire hydrologic response is expected to last for up to five years.

Timber stands within the Maverick Fire were smaller and surrounded by large open grasslands or smaller grassland meadows. Fuel loads did not appear to be excessive. This resulted in a much more mosaic burn pattern, leaving a significant amount of area unburned or with low severity impacts to the soil. However, areas of low severity burn still produced moderate to high intensity impacts and significant mortality of timber stands is anticipated. Hydrophobicity is generally weak or moderate, and shallow. Hydrologic response is anticipated in tributary drainages that burned with moderate severity and moderate to high intensity, but recovery should be rapid, within 1-2 years. Burn severity appears to shift to a higher level (more moderate and high severity acres) on BLM and private lands to the east, below the forest boundary.

The Little Fork Fire had similar vegetative characteristics as the Maverick Fire, but burned with higher intensity. This resulted in moderate severity impacts to the soil throughout most timber stands, although some large areas were unburned. Moderate to high intensity fire occurred throughout and significant mortality of timber stands is anticipated. Hydrophobicity was generally weak or moderate, and shallow. Hydrologic response is anticipated in tributary drainages that burned with moderate severity and moderate to high intensity, but recovery should be rapid, within 1-2 years. Similar conditions occur on lands below the forest boundary, although vegetation data suggests larger contiguous grassland areas exist further south into the headwaters of Otter Creek. Again, smaller tributary drainages that burned with moderate to high severity will likely produce flood discharge levels that may exceed capacities of culverts located down gradient, but significant flood flows in Otter Creek are not anticipated.

Values at Risk:

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

Mill Fire, Beaver-Liscom Road # 4767- Road Template

Resource values associated with this road include heritage, recreation, travel use by local landowners and forest personnel, and overall watershed condition. The road is considered the best example and most preserved CCC road on the District. The road retains its original route, has all seven of the original drainage crossings, and displays the remarkable design and stone work that characterizes the CCC workmanship. Little to no road reconstruction has been conducted on the road over the 70 years of use. This road is not adequately drained to capture post-fire overland flows that develop upslope. Excessive surface flows down the road template are probable and will likely cause significant surface erosion or failure in localized areas. Portions of the road are very steep (>10% grade) with outsloped drainage. The road is not ditched and currently has only two semi-functional rolling dips that will likely be damaged when driven over when wet. The fire will increase runoff upslope from the road and onto the road, vehicle travel during wet periods will be a significant safety issue. It is likely that this route will become impassible within the next year without treatment.

Risk Assessment – Threats to travelers on Forest Roads

Probability of Damage or Loss: Possible. Probability of vehicles sliding off fillslope.

Magnitude of Consequence: Moderate. Possible injury of both administrative users and Forest visitors.

Risk Level: **Intermediate**

Risk Assessment – Threats to Forest Roads

Probability of Damage or Loss: Very Likely. Probability of damage or failure of road prism.

Magnitude of Consequence: Moderate. Road may become impassable.

Risk Level: **Very High**

Risk Assessment – Threats to Heritage Resource

Probability of Damage or Loss: Very Likely. Probability of damage or failure of road prism.

Magnitude of Consequence: Moderate. Loss of eligibility for National Historic Registry.

Risk Level: **Very High**

Mill Fire, Beaver-Liscom Road # 4767- Road/stream crossing structures

The same resource values associated with the road template are also associated with seven CCC crossing structures. The steel culverts are 24" and 36" diameter and two of them are completely plugged (inlet/outlets buried). The other culverts have some level of deposition along the culvert length that reduces their capacity. Inlet and outlet basins are completely filled. Three of these crossings are located below tributaries with moderate/strong and deep hydrophobicity, moderate burn severity and moderate to high burn intensity. Post-fire overland flows are expected to develop and result in flood flows that are likely to approach existing culvert capacities (where culverts are present) and overtop structures where culverts are currently buried. It is likely that these structures will be damaged or fail and the route will become impassible within the next year without treatment. Post-fire flood discharge modeling suggests that capacities of three culverts may be exceeded. These culverts cannot be upsized due to the cultural values and therefore will require overflow structures installed to protect them in the event culvert capacities are indeed exceeded. Although it is unlikely that travelers would be present at the time a crossing fails, the consequence would be life threatening.

Risk Assessment – Threats to travelers on Forest Roads

Probability of Damage or Loss: Unlikely. Low probability of vehicles on crossings during flood event.

Magnitude of Consequence: Major. Possible injury or death of both administrative users and Forest visitors.

Risk Level: **Intermediate**

Risk Assessment – Threats to Forest Roads

Probability of Damage or Loss: Very Likely. Probability of damage or failure of road/stream crossing.

Magnitude of Consequence: Moderate. Road may become impassable.

Risk Level: **Very High**

Risk Assessment – Threats to Heritage Resource

Probability of Damage or Loss: Very Likely. Probability of damage or failure of road prism.

Magnitude of Consequence: Major. Loss of eligibility for National Register.

Risk Level: **Very High**

Maverick Fire, Road # 45021/45022, Little Fork Fire, Road #4032/40322/4503- Road Template

Resource values associated with these roads include recreation, travel use by forest personnel and overall watershed condition. These roads are not adequately drained and will capture post-fire overland flows that develop upslope. Excessive surface flows down the road templates are possible and are likely to cause significant surface erosion in localized areas. Portions of the road are steep and will pose increased public safety risk. It is likely that these routes will become impassible within the next year if no treatment occurs.

Risk Assessment – Threats to Forest Roads

Probability of Damage or Loss: Very Likely. Probability of damage or failure of road prism.

Magnitude of Consequence: Moderate. Excessive erosion and gully formation.

Risk Level: **Very High**

Diamond Complex- Native Plant community

Concern exists regarding the potential spread of noxious weeds in the Maverick Fire area of the Diamond Complex. There are limited weed concerns identified for the Mill or Little/Fork Fire from existing known infestations of isolated pockets of Canada thistle and hounds-tongue. However, wash stations were not available for suppression equipment working the Mill Fire and wash stations did not arrive for suppressions equipment used on the Maverick and Little/Fork fires until after most of the dozer line was completed. There are approximately 500 net acres of known noxious weed infestations in the Maverick Fire area. Leafy spurge occurs extensively in the area. Canada thistle and hounds-tongue is known to occur only sporadically in the area, with spotted knapweed known in adjacent areas. New infestations can easily occur along roads, or near dozer lines (approximately 1270 acres). These areas can be vectors for weed spread. The new seedbed the fire created is another vector for weed spread. This situation demands close monitoring for new weed species and infestations due to possible transport from suppression equipment.

Risk Assessment – Probability of damage or loss of the native plant community

Probability of Damage or Loss: Likely - Based on burn severity, miles of dozer line, and other suppression activities.

Magnitude of Consequence: Major – loss of native plants communities.

Risk Level: **Very High**

Little Fork Fire- Pre-historic lithic scatter

Site 24PR0633 is a prehistoric lithic scatter located on and below a small bench along Bridge Canyon. The fire burned over 12 ponderosa trees that will eventually uproot and destroy the integrity of the buried cultural deposits that make the site eligible for nomination to the NRHP. Erosion from loss of ground cover may further compromise the site. Felling the trees parallel to contour will help stabilize the slope and prevent erosion of the site surface.

Risk Assessment – Probability of damaging heritage resource

Probability of Damage or Loss : Very Likely

Magnitude of Consequence: Moderate - potential for damage to site

Risk Level: **Very High**

Mill Fire- Reservoir Spillway

The North Sartin Reservoir was constructed by the CCC and retains the original stone lined spillway characteristic of their work (T1S, R46E, S 23/24 section line). Ten trees that have grown within the spillway were burned and may fall over, potentially dislodging the rock and damaging the spillway. Although more than 50% of the drainage above the reservoir is outside the fire perimeter, the spillway will be destabilized for even normal runoff events without treatment.

Risk Assessment – Probability of damaging heritage resource

Probability of Damage or Loss : Possible

Magnitude of Consequence: Major - potential for damage to site and breach of reservoir

Risk Level: **Very High**

B. Emergency Treatment Objectives:

- Mill Fire Beaver-Liscom Road- Mitigate effects of changed post-fire watershed response on human life and safety where Forest roads and stream crossings are at risk of damage or failure.
- Mill Fire Beaver Liscom Road- Mitigate effects of changed post-fire watershed response on Forest roads and stream crossings that are at risk of damage or failure.
- Complex in general, but specific to existing infestations in Maverick Fire- Minimize the increased potential for the spread of invasive and noxious weeds.
- Mill and Little Fork Fires- Mitigate effects of changed post-fire watershed response on cultural resources.
- Complex in general, but specific to roads in Maverick and Little Fork Fires- Mitigate effects of changed post-fire watershed response on watershed condition.

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

Land 80 % Channel na % Roads/Trails 95 % Protection/Safety 95 %

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land (weeds)	85	75	65
Land (site protection)	95	95	95
Channel	na	na	na
Roads/Trails	95	85	75
Protection/Safety	na	na	na

E. Cost of No-Action (Including Loss): The cost to reconstruct FS roads within the complex is estimated at \$300,000. Loss of cultural resources is estimated at \$100,000, Loss of native vegetation and associated habitat is estimated at \$200,000. The total cost of the no-action is estimated to exceed \$600,000.

F. Cost of Selected Alternative: \$194,890

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 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 Nienow

Email: mnienow@fs.fed.us Phone: 406-657-6200

Core Team Members:

- Dave Marr – Soil Scientist
- Dave Callery – Hydrologist
- Laura Jungst – Hydrologist
- Dillon Martini – Soil Scientist
- Megan Dawson – GIS/Range Specialist
- Halcyon LaPoint – Heritage
- Mike Bergstrom – Heritage
- Ryan Melin- Range Specialist
- Kim Reid – Range/Botany/Noxious Weeds

H. Treatment Narrative:

Land Treatments:

Immediate Weed Control Treatments and Estimated Cost:

The following Table summarizes the estimated funding needed for herbicide weed control within the Fire during the fall regrowth in 2011 and the 2012 growing period. Weed treatment will concentrate on those areas of known weed infestations within fire perimeter and in the vicinity of the suppression lines, livestock spring developments and other areas outlined above under areas at risk. Immediate weed treatment is needed to prevent known weed infestations from quickly flourishing after the fire and creating large sources of weed seeds. These areas are high use public and administrative sites where people, vehicles and wildlife would serve as vectors of spread. It is critical that these areas be treated as soon as possible to prevent weed seed spread into newly burned and vulnerable areas. In addition to chemical weed treatment, burned areas will be deferred from livestock grazing (see Table 9 below) for one to two growing seasons or until vegetation has sufficiently recovered to provide healthy competition to weed species.

Estimated Immediate Weed Treatment Cost

Fire	Gross Ac Existing Infestations	Miles Dozer Suppression Lines on NFS Administered Lands	Gross Acre equivalent using 100' buffer each side from suppression line	Net Acre Conversion Factor Based on Estimated Density in Gross Area	Net Acres	Cost @ \$125/Ac for Herbicide and \$38.80/Ac for Bio Control
Existing Infestations						
Maverick	1000 Acres Herbicide			50%	500 Herbicide	\$62,500
	100 Acres Biological Release			50%	50 Biological Control (ten releases)	\$1940 ¹
Potential Infestation - Suppression Lines						
Mill		3.7 Mi Dozed System Road				
		5.8 Mi Dozed Motorized System Trail				
		2.6 Mi Dozed Adm Road				
		0.6 Mi Dozed Non-system Route				
		16.7 Mi Dozed Off Road				
Maverick		7.7 Mi Dozed Motorized System Trail				
		4.6 Mi Dozed Non-system Route				
		0.9 Mi Dozed Off Road				
Little/Fork		0.1 Mi Dozed System Road				
		3.0 Mi Dozed Motorized System Trail				
		0.2 Mi Dozed Adm Road				
		6.5 Mi Dozed Off Road				
Subtotal		52.4 Miles	1270 Ac²	15%	191	\$23,875
Total					741	\$88,315

A total of \$88,315 will be needed for treatment (during fall regrowth period of 2011 (if conditions warrant) and the growing season of 2012).

Heritage Site Stabilization:

Little Fork Fire- Pre-historic lithic scatter, Mill Fire- Reservoir spillway site protection:

Felling 12 trees parallel to contour is necessary to stabilize the slope and prevent erosion of the lithic scatter site surface. Felling and removing 20 burned deciduous trees from the spillway is necessary to maintain stability of the spillway for low to moderate levels of anticipated runoff. **Total cost = \$2,000**

Road and Trail Treatments:

Mill Fire, Beaver-Liscom Road # 4767- Road Template: Forty hardened rolling dips are necessary to provide sufficient road surface drainage under post-fire hydrologic conditions. Additional spot surfacing with 500 cy of

¹ Estimated cost for biological releases is based on 6 person days for preparation and release at \$1940 (see Table 6 for 6 person days plus fleet estimate)

² Based on 52.4 miles x 5280 ft/mile x 200 feet (100' centerline buffer) divided by 43,560 sq ft/acre = 1270 acres

aggregate along portions of the road that are outsloped adjacent to steep fillslopes is necessary to reduce safety issues related to vehicle travel under wet conditions. Cost estimate: 40 dips x \$935/dip = \$37,400, 500 cy x \$52/cy = \$26,000. **Total cost = \$63,400.**

Mill Fire, Beaver-Liscom Road # 4767- Road/stream crossing structures: Clean seven CCC culverts and excavate inlet and outlet basins to restore culvert capacity. Install hardened dips and spillways at three culvert locations that are most susceptible to overtopping during post-fire flood events. Cost estimate: 7 culverts x \$1000/culvert = \$7,000, 3 dip-spillways x \$2,600 = \$7,800. **Total cost = \$14,800.**

Maverick Fire, Road # 45021/45022, Little Fork Fire, Road #4032/40322/4503- Road Template: These routes are currently closed seasonally (9/1-12/1) for wildlife concerns. The District is considering extending the closure for the long-term either by administrative order, changing the maintenance level to 1 (storage) or removing the road from the system. Twenty three rolling dips/water bars would be installed along these routes to provide adequate long-term surface drainage regardless of the type and length of closure implemented. Since traffic will be restricted from these routes, hardening of the dips will not be necessary. A long-term closure will also require measures to ensure vehicle use does not occur. Therefore, where topographic features provide natural barriers, locations along the lower portion of these roads will be ripped, seeded and slashed. Cost estimate: 23 dips x \$550/dip = \$12,650, 1 mi. closure = \$5,000. **Total cost = \$17,650.**

I. Monitoring Narrative:

Storm Patrol/Road Closure Effectiveness: Storm patrols will identify road problems such as plugged culverts and washed out roads, and take appropriate measures to clear, clean, and block those roads that have received damage. 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 = 10 days x \$270/day = \$2,700**

Weed Monitoring Strategy and Estimated Cost:

BAER team vegetation experts assessed areas at risk from invasion and potential seed sources into these areas. These areas are identified for monitoring to determine where treatment will be needed to protect vulnerable vegetation resources. These areas will be the first priority for monitoring (and potential future noxious weed treatment). The second priority for monitoring will be the remainder of the burned area.

Phase I monitoring will involve inspections, first along all roads and dozer lines, then outward from roadsides and other known noxious weed infestations and disturbed sites beginning with 2011 fall regrowth and during the 2012 growing season. Phase II monitoring will continue throughout the fire area. Documentation of weed locations, by species, and other observations regarding density and spread will be recorded following the guidelines in TERRA database. If the Forest Service determines more rigorous monitoring is then needed to track particular infestations through time, a new design can be implemented in appropriate areas. The estimated cost for initial weed monitoring is found in the following Table.

Estimated Weed Monitoring Cost

Monitoring Phase	Resources Needed	Estimated Unit Cost	Estimated Total Cost
Phase I	6 Person Days 4-wheel Drive Pickup and 2 ATVs (150 miles) or comparable contract	\$300/person/day	\$1800
		.60/mile*	\$90
		\$300 FOR	\$50
Phase II	10Person Days 4-wheel Drive Pickup and 2 ATVs (600miles) or comparable contract	\$300/person/day	\$3000
		.60/mile*	\$360
		\$300 FOR^	\$75
Total Cost			\$5375
Cost / Unit	Unit: 16 persons days + fleet	\$335.94	\$5375

Part VI – Emergency Stabilization Treatments and Source of Funds

			NFS Lands				Other Lands			All
		Unit	# of		Other	# of	Fed	# of	Non Fed	Total
Line Items	Units	Cost	Units	BAER \$	\$	units	\$	Units	\$	\$
A. Land Treatments										
<i>Heritage site protection/stabilization</i>	<i>site</i>	<i>1000</i>	<i>2</i>	<i>\$2,000</i>	<i>\$0</i>					
<i>Weed herbicide treatment</i>	<i>acre</i>	<i>125</i>	<i>691</i>	<i>\$86,375</i>						
<i>Weed biological treatment</i>	<i>acre</i>	<i>39</i>	<i>50</i>	<i>\$1,940</i>						
<i>Weed detection</i>	<i>days</i>	<i>336</i>	<i>16</i>	<i>\$5,375</i>						
<i>Subtotal Land Treatments</i>				<i>\$95,690</i>	<i>\$0</i>		<i>\$0</i>		<i>\$0</i>	<i>\$95,690</i>
B. Channel Treatments										
<i>Subtotal Channel Treatments</i>				<i>\$0</i>	<i>\$0</i>		<i>\$0</i>		<i>\$0</i>	<i>\$0</i>
C. Road and Trails										
<i>Install hardened rolling dips- Beaver-Liscom Rd</i>	<i>each</i>	<i>935</i>	<i>40</i>	<i>\$37,400</i>						
<i>Apply spot surfacing where safety issues exist</i>	<i>cu.yd.</i>	<i>52</i>	<i>500</i>	<i>\$26,000</i>						
<i>CCC culvert cleaning and inlet excavation</i>	<i>each</i>	<i>1,000</i>	<i>7</i>	<i>\$7,000</i>						
<i>Construct hardened dip and spillway</i>	<i>each</i>	<i>2,600</i>	<i>3</i>	<i>\$7,800</i>						
<i>Install rolling dips on closed roads</i>	<i>each</i>	<i>550</i>	<i>23</i>	<i>\$12,650</i>						
<i>Road Closure</i>	<i>miles</i>	<i>5,000</i>	<i>1</i>	<i>\$5,000</i>						
<i>Subtotal Road & Trails</i>				<i>\$95,850</i>	<i>\$0</i>		<i>\$0</i>		<i>\$0</i>	<i>\$95,850</i>
D. Protection/Safety										
<i>Subtotal Protection/Safety</i>				<i>\$0</i>	<i>\$0</i>		<i>\$0</i>		<i>\$0</i>	<i>\$0</i>
E. BAER Evaluation										
<i>Assessment</i>				<i>\$0</i>	<i>\$34,452</i>		<i>\$0</i>		<i>\$0</i>	<i>\$34,452</i>
<i>Subtotal Evaluation</i>				<i>\$0</i>	<i>\$34,452</i>		<i>\$0</i>		<i>\$0</i>	<i>\$34,452</i>
F. Monitoring										
<i>Sensitive plant - weed monitoring</i>	<i>trips</i>	<i>325</i>	<i>2</i>	<i>\$650</i>						
<i>Storm patrol/road closure effectiveness</i>	<i>trips</i>	<i>270</i>	<i>10</i>	<i>\$2,700</i>						
				<i>\$0</i>			<i>\$0</i>		<i>\$0</i>	<i>\$0</i>
<i>Subtotal Monitoring</i>				<i>\$3,350</i>	<i>\$0</i>		<i>\$0</i>		<i>\$0</i>	<i>\$3,350</i>
G. Totals				<i>\$194,890</i>	<i>\$34,452</i>		<i>\$0</i>		<i>\$0</i>	<i>\$229,342</i>
Previously approved				<i>\$0</i>						
Total for this request				\$194,890						

PART VII - APPROVALS

1. /s/ Frederick W. Prange (for)
Forest Supervisor

September 9, 2011
Date

2. _____
Regional Forester

Date _____