BURNED-AREA REPORT
(Reference FSH 2509.13)

PART I - TYPE OF REQUEST

A. Type of Report

[**X**] 1. Funding request for estimated emergency stabilization funds
[ ] 2. Accomplishment Report
[ ] 3. No Treatment Recommendation

B. Type of Action

[**X**] 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: **Motorway North Complex** B. Fire Number: **ID-NCF-000859**

C. State: **Idaho** D. County: **Clearwater & Idaho**

E. Region: **01 – Northern Rockies** F. Forest: **17 – Clearwater-Nez Pearce**

G. District: **Lochsa/North Fork** H. Fire Incident Job Code: **P1J1QL-0117**

I. Date Fire Started: **August 14, 2015** J. Date Fire Contained: **Est. Oct. 31, 2015**

K. Suppression Cost: **$16,351,732** (estimate from 09/16/2015)

L. Fire Suppression Damages Repaired with Suppression Funds
1. Fireline waterbarred (miles): 0
2. Fireline seeded (miles): 0
3. Other (identify):

M. Watershed Number: (As of 09/26/2015 adjusted BARC data)

Subwatershed Name (HUC6)	Total HUC6 Acres	Acres in Fire Perimeter	Acres Unburned	Acres of Low Severity	Acres of Moderate Severity	Acres of High Severity
Canyon Creek (170603030706)	12,576	31	22	8	1	0
Eldorado Creek (170603060203)	27,199	1,526	1,186	260	60	20
French Creek (170603070601)	16,877	1,347	256	808	265	18
Hemlock Creek (170603070505)	21,421	2,217	468	1,055	546	148

Subwatershed Name (HUC6)	Total HUC6 Acres	Acres in Fire Perimeter	Acres Unburned	Acres of Low Severity	Acres of Moderate Severity	Acres of High Severity
Hungery Creek (170603030602)	22,677	7,425	662	3,769	2,401	592
Little Weitas Creek (170603070503)	19,463	513	9	431	74	0
Middle Creek (170603070504)	17,502	481	163	244	71	3
Musselshell Creek (170603060202)	35,333	696	495	180	22	0
Upper Lolo Creek (170603060201)	26,817	3,618	847	1,991	729	51
Upper Orofino Creek (170603060401)	27,944	453	69	306	78	1
Total		18,308	4,178	9,051	4,246	833

N. Total Acres Burned: (As of 09/26/2015 adjusted BARC data)
NFS - 18,308 acres

Fire Name	Total Acres	Acres Unburned	Acres of Low Severity	Acres of Moderate Severity	Acres of High Severity
Four Bit	1,557	1,208	268	61	20
Green	1,078	30	952	97	0
Musselshell	833	601	210	22	0
Pete Forks	7,975	915	3,898	2,562	599
Snowy Summit	6,866	1,425	3,723	1,504	213
Total	18,308	4,178	9,051	4,246	833

O. Vegetation Types: Vegetation in this geographic area consists of mixed coniferous forest of Douglas fir, grand fir, western larch, hemlock, Engelmann spruce, lodgepole pine and western red cedar.

P. Dominant Soils: Surface soil textures in the Motorway complex were dominantly ashy silt loams. Pre-fire organic horizons (duff) typically range in thickness from one quarter to three inches. These soils are considered to have low to moderate erodibility due to high post-fire structural integrity and abundance of live roots.

Q. Geologic Types: Dominantly Mount Mazama volcanic ash mantles overlying alluvium derived from granite.

R. Miles of Stream Channels by Order or Class:
National Forest
1st order 23.5 miles, 2nd order 2.6 miles

S. Transportation System (miles)
Roads: 7 miles Maintenance Level 1
20 miles Maintenance Level 2
11 miles Maintenance Level 3
17 miles Non-Motorized Trails
5 miles Motorized Trails

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 9,051 low 4,246 moderate 833 high (4,178 unburned)

B. Water-Repellent Soil (acres): 5,079

C. Soil Erosion Hazard Rating (acres):

Erosion Hazard Class	Inherent Erosion Hazard (Acres)
Low	16,392
Moderate	224
Severe	1,696

D. Erosion Potential: Very Low - 0.2 tons/acre (2nd year sediment delivery for high burn severity)

E. Sediment Potential: 171 cubic yards/square mile (average of first two years)

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period (years): 2-5 years

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

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

D. Design Storm Duration (hours): 4 hour

E. Design Storm Magnitude (inches): 4.34 inches

F. Design Flow (cubic feet / second / square mile): 139 cfs/mi^2

G. Estimated Reduction in Infiltration (percent): 15-20%

H. Adjusted Design Flow (cfs per square mile): 156 cfs/mi^2

PART V - SUMMARY OF ANALYSIS

Background:

The Motorway Complex Fire was started on August 14, 2015 and was 90% contained on September 24, 2015. The burned area is within the Lochsa and North Fork Ranger Districts on the Nez Pearce-Clearwater National Forest. The Motorway North BAER team was assigned to the Four Bit, Green, Musselshell, Pete Forks and Snowy Summit fires.

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

A list of critical values was discussed with Lochsa/North Fork RD staff and the BAER team on September 24, 2015. The BAER team subsequently evaluated this list of values through field

assessment and associated analysis to determine the critical values (Interim Directive No. 2520-2014-1 – 2523.1 – Exhibit 01) that may be treated within the BAER program. The risk (Interim Directive No. 2520-2014-1 – 2523.1 – Exhibit 02) to these critical values has been assessed by the BAER team and is described below. A list of treatment numbers has been included below each critical value description to ensure tracking between values and treatments.

1. Human Life and Safety (HLS)
   a. High risk to **forest visitors and Forest Service employees** due to the increased threat of falling trees, rocks, and other debris. *(Treatment: T2)*

      Risk Assessment: Elevated threat to human health and safety from falling trees, rocks and debris on numerous forest roads within and adjacent to the fire perimeters.
      Probability of Damage or Loss: Possible – Numerous snags will have potential risk to public safety.
      Magnitude of Consequence: Major– Loss of life or injury to humans.
      Risk Level: High

2. Property (P):
   a. High risk to **road and trail infrastructure** due to an increased threat of damage expected to these forest investments from increased runoff, erosion and deposition. (*Treatments: T4, T5, T6*)

      Due to fire effects, watersheds within the burn perimeter are likely to generate higher stormflows in the first few years following the fire. Larger flow events in part are a function of increased surface runoff from bare hillslopes. Furthermore, burned and exposed soils are more susceptible to erosion, entrainment and transport to stream channels. This combination of increased runoff and greater susceptibility to erosion threatens stream water quality as well as transportation infrastructure. Transportation infrastructure is a widespread value at risk of damage from post-fire erosion and elevated peak flows below the fire, including roads, trails and culverts. There are 38 miles of roads and 22 miles of trails within or immediately downslope of the burn perimeter.

      Roads: Within the Motorway North Fire, forest roads 104, 535, and 5172 have the most potential for post fire runoff. These roads serve as major access paths for the Nee-Mee-Poo Trail, the Lewis and Clark Trail, the Lolo Motorway, and the Hemlock Butte Lookout and communication site.

      Trails: There are several recreation and trail resources (developed campgrounds, primitive campsites, toilets, trailheads, and trail) within and adjacent to the Motorway and associated fires. These resources are primarily interpretive panels and trails associated with the Lolo Trail National Historic Landmark. The Nee-Mee-Poo Trail 40 and Lewis and Clark Trail 11 are the primary trails of interest in the Landmark. There are approximately 4 miles of seven trails within high and moderate severity burn.

Trail	Burn Severity		Total
	High	Moderate	
CAMP MOOSE HORN B	0.0	0.1	0.2
DAN LEE RIDGE		0.3	0.3
FOOTROT CORRALS	0.1	0.2	0.3
GASS CREEK	0.6	0.8	1.4
HEMLOCK BYPASS	0.0	0.2	0.3
LEWIS AND CLARK		0.4	0.4
NEE-ME-POO	0.0	1.0	1.0
Totals	**0.8**	**3.2**	**3.9**

Risk Assessment: Threats to Forest Service roads trails and associated structure.
Probability of Damage or Loss: Likely – High potential of road and trail drainage failure due to post-fire flows.
Magnitude of Consequence: Moderate – Risk to public safety due to loss infrastructure, Major - loss of FS infrastructure
Risk Level: High

3. Natural Resources (NR):
   a. Very High risk to **native plant diversity** due to the threat from the spread of noxious weeds and invasive plant species. Known noxious weed and invasive populations exist within and immediately adjacent to the burned area. Most populations to date occur along existing road systems and riparian corridors. *(Treatment: T1)*

      Roads, trails and fire lines within and adjacent to the Motorway North Complex Fires are primary corridors for weed dispersal and the warm/dry habitats that are moderate to highly susceptible to new weed invasion have been burned. Most of the previously identified weed infested sites within the fire were either burned or occur adjacent to burned areas. The susceptible habitats within the fire contain known infestations of spotted knapweed, Orange hawkweed, Yellow hawkweed, and Canada thistle. Small spot infestations of these noxious weeds are scattered along forest roads which run through the fire perimeter. Other discrete or small populations were identified within drop points and trailheads throughout the fire complex. Spotted knapweed, Orange hawkweed, Yellow hawkweed, and Canada thistle are invasive weeds that can readily out-compete native plants and dominate disturbed sites.

      Fire intensities were generally Low to Moderate, with High intensity burns occurring in pockets on steep slopes and areas of diseased/dead trees. Most grasses and shrubs in or near infested sites should regenerate because roots and crowns remained intact. However, highly susceptible habitats, existing infestations and exposed mineral soils along roads, trails, and campgrounds greatly increase the risk of invasive weed spread as a result of fire disturbance. The risk of weed expansion has dramatically increased within the Motorway fire due to the interaction of the weed expansion factors and poses a serious threat to ecosystem health.

      Risk Assessment: Threats to native plant communities due to the establishment or spread of noxious weeds.

Probability of Damage or Loss: Very Likely - Based on moderate and high burn severity and proximity to known weed infestations.
Magnitude of Consequence: Major – Loss of native plant communities and spread of noxious weeds.
Risk Level: Very High

4. Cultural and Heritage Resources (CHR):
   a. Very High risk to **eligible or potentially eligible cultural resources** due to the threat of previously hidden artifacts becoming exposed and susceptible to looting. There are numerous eligible or potentially eligible cultural resources within the burned area. (*Treatment: T3*)
   b. Very High risk to **eligible or potentially eligible cultural resources** due to the increased threat from erosion, falling trees, or falling debris causing irreversible damage to these sites. (*Treatment: T3*)
   Due to the fire, National Historic Trails/Sites are exposed to elevated erosion potential and exposure of cultural resources.

   Risk Assessment: Threats to cultural resource sites.
   Probability of Damage or Loss: Likely – High potential of damage to cultural resource trails/sites due to post-fire erosion.
   Magnitude of Consequence: Major - loss of significant cultural resources.
   Risk Level: Very High

B. Emergency Treatment Objectives:
The goal of the burned area emergency rehabilitation is to:

- Protect or minimize damage to National Forest System investments within the burned area. Minimize damage to key system travel (roads and trails) routes within and adjacent to the fire boundary.
- Protect or mitigate potential post-fire impacts to significant cultural resources within or downstream from the burned area.
- Control expected invasion of noxious weeds within and adjacent to the area where soils/vegetation was disturbed as a result of suppression activities.
- Warn users of Forest roads and trails of hazards present in the burned area.

In accordance with the revised Forest Service manual, the risk matrix below, Exhibit 2 of Interim Directive No.: 2520-2014-1 was used to evaluate the Risk Level for each value identified during the Wash Fire BAER assessment. Only treatments directly addressing FS Values at Risk with a rating of High or above are being requested for BAER authorized treatments.

Probability of Damage or Loss	**Magnitude of Consequences**		
	Major	Moderate	Minor
	RISK		
Very Likely	**Very High - Native Veg**	**Very High**	**Low**
Likely	**Very High – Roads/Trails Cultural Resources**	**High**	**Low**
Possible	**High - Health and Safety**	**Intermediate**	**Low**
Unlikely	**Intermediate**	**Low**	**Very Low**

C. Probability of Completing Treatment Prior to Damaging Storm or Event:
Land 70% Channel -- % Roads/Trails 70% Protection/Safety 90%

D. Probability of Treatment Success

Treatment	Years after Treatment		
	1	3	5
Land	80	70	--
Channel	--	--	--
Roads/Trails	70	80	90
Protection/Safety	60	60	60

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

Resource/Value Affected (Potential)	Cost
Loss of 8 miles of road that could affected by moderate/high severity post fire runoff ($40,000 per/mile)	$320,000
Loss of 22 miles of trail that could affected by moderate/high severity post fire runoff ($14,000 per/mile)	$308,000
Increase 450 acres of noxious weeds ($400 per acre for treatment)	$180,000
Total	$808,000
Possible loss of life/injury from additional danger of hazard trees	Cannot be valued.
Possible degradation of National Historic Trails/Sites	Cannot be valued.

F. Cost of Selected Alternative (Including Loss):

Resource/Value Affected (Potential)	Treatment Cost Including Loss	Total
Loss of 8 miles of road that could affected by moderate/high severity post fire runoff ($40,000 per/mile)	$19,798 for proposed treatment plus $320,000 for potential loss.	$339,798
Loss of 4 miles of trail that could affected by moderate/high severity post fire runoff ($14,000 per/mile)	$21,225 for proposed treatment plus $56,000 for potential loss.	$77,225
Increase 450 acres of noxious weeds ($400 per acre for treatment)	$14,700 for proposed treatment plus $180,000 for potential loss.	$194,700
Total		$961,298
Possible loss of life/injury from additional danger of hazard trees	Cannot be valued.	
Possible degradation of National Historic Trails/Sites	Cannot be valued.	

G. Skills Represented on Burned-Area Survey Team:

[✓] Hydrology	[✓] Soils	[ ] Geology	[ ] Range	[ ] HAZMAT/Mineral
[ ] Forestry	[ ] Wildlife	[ ] Fire Mgmt.	[✓] Engineering	[✓] Safety
[ ] Contracting	[ ] Ecology	[✓] Botany	[✓] Archaeology	[ ]
[✓] Fisheries	[ ] Research	[✓] GIS	[ ] Landscape Arch	

Team Leader: Rich Jaros

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Team Members:

Mark Muir	Hydrologist
Eric Crook	Hydrologist
Chandra Neils	Soil Scientist
Derek Milner	Soil Scientist
Jake Dodds	Engineer
Joan Louie	GIS Specialist
Mark Madsen	Botanist
John Warofka	Botanist
Jacob Doyle	Botanist
Matthew Hintzman	Archeologist
Randy Boedy	Archeologist
Karen Smith	Fish Biologist
Heather Berg	Recreation/Trails
Kevin Korbel	Safety

H. Treatment Narrative:

These treatments were developed by each of the respective resource groups as part of a specification sheet that helped guide narrative and cost considerations. Each treatment proposal was then captured within this document. The team leader has communicated with BAER Coordinators at forest and regional levels to ensure consistency with BAER authority.

Land Treatments:

T1 - Early Detection & Rapid Response

General Description of Treatment: Invasive plants and weed assessments will be conducted in FY2016 for Early Detection and Rapid Response (EDRR) on any new infestation located within the fire perimeter. Treatments will occur at proper phenology of each species to ensure maximum control.

Because noxious weeds are scattered in small patches throughout the burn area, there is a high risk for new infestations within the fire perimeter to become established due to the disturbance caused by the wildfire and the suppression equipment used to fight the fire.

Suitable Sites: Assess areas that have a high potential for weed/invasive species establishment. Priority acres for EDRR are as follows:

1. Spot treat spotted knapweed along Forest Service Roads 535, 103, 5039, 5042, 500 & 104 within the burn. (39 acres)
2. Spot treat small infestations of Orange & Yellow hawkweed along Forest Roads 535 & 103 leading into the burn. (4 acres)
3. Spot treat spotted knapweed & Canada thistle at drop point 50. (2 acres)

Design/Construction Specifications:

- Inventory of roads, dozer lines, drop points, camps, for both current and new invader weed populations, and monitoring of weed control methods should be initiated to determine potential for weed spread and effectiveness of treatments.
- Treat satellite infestations of spotted knapweed along Forest Roads 535, 103 5039, 5042, 500 &104 within the burned area. The knapweed population along the road system is contributing a seed source and the road system is acting as a spread corridor for further expansion into the burned areas.
- Treat small infestations of Orange & Yellow hawkweed on Forest Roads 535 &103 leading into the burn.
- Treat spotted knapweed & Canada thistle at Drop Point 50 which is a main access point for 3 connecting roads and will likely see heavy equipment from rehabilitation in 2016 and beyond.
- Monitor weed populations within and adjacent to the fire to determine if the combination of fire disturbance and susceptible habitat facilitates weed spread or increases weed densities, along with post treatment effectiveness monitoring.

DIRECT COSTS

Average Treatment Cost (includes prep and pre-treatment flagging of sites): Labor $250.00 per acre
Average Chemical/Personal Protection Equipment Cost: $50.00 per acre
Implementation Monitoring of Treatment: at $400 per day (two person crew).

TOTAL Estimated Costs

Estimated treatment cost: $300.00/acre X 45 acres	=	$13,500.00
Weed Monitoring 3 days X $400/day	=	$1,200.00
Total		**$14,700.00**

Purpose of Treatment: This treatment is necessary to prevent the establishment and to control the spread of new noxious weeds and non-native invasive species in the burned area.

Protection/Safety Treatments:

T2 – Safety Warning Signs

General Description: This treatment is for the installation of burned area warning signs.

Burned area signs warn the public identifying of the possible dangers associated with a burned area on major entry points into the burned area and recreational areas. It shall contain language specifying items to be aware of when entering a burn area such as falling trees and limbs, rolling rocks, and flash floods.

Suitable Sites:

Road locations on FS lands for burned area warning signs on major entry points are:

- Forest Road 535 west of the Snow Summit Fire

- Forest Road 535 south of the Snow Summit Fire
- Forest Road 535 south of the Mussellshell Fire
- Forest Road 500 north of the Pete Forks Fire
- Forest Road 500 south of the Pete Forks Fire
- Forest Road 500 South of the Pete Forks Fire
- Forest Road 103 at Junction with Forest Road 104

Addition signage needs at recreation sites, trailheads and along trails have been identified. There are 18 identified locations for these signs.

Detailed Design/Construction Specifications:
Burned Area warning signs along the roads shall be specified by the Lochsa/North Fork District and SO Engineering Staff to be the minimum necessary for safety considerations.

Examples of signs are:
BURNED AREA
Potential Hazards Include:
Loose Rock, Falling Trees and Limbs, Flash Flooding and Debris Flows
(Where needed additional language for abandoned mine area will be added)

PERSONNEL SERVICES: (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item): Do not include contract personnel costs here (see contractor services below).	**COST / ITEM**
GS-09 (for Sign Installation) @ $250/day X 15 days =	$3,750
GS-12 (for project review and inspection) @ $350/day X 2 days =	$700
TOTAL PERSONNEL SERVICE COST	**$4,450**
MATERIALS AND SUPPLIES (Item @ Cost/Each X Quantity X #Fiscal Years = Cost/Item):	
Burned Area Warning Signs, Roads/Trails, 25 @ $200/each	$5,000
Posts, Bolts and Installation Supplies, $250	$1,000
TOTAL MATERIALS AND SUPPLY COST	**$6,000**
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X #Fiscal Years = Cost/Item):	
Fleet Vehicle Costs $0.33/mileage X 500 miles	$165
TOTAL TRAVEL COST	**$165**
TOTAL COST	**$10,615**

Purpose of Treatment: The purpose of the Burned Area signs is to provide safety to the motorists and forest visitors of upcoming dangers and/or objects.

T3 – Cultural Resource Storm Patrol

General Description: Patrol and monitor sites susceptible to looting, erosion, runoff, and flash flooding. There are numerous (11 sites and national historical trails) cultural resources in the Motorway North Fire area at risk from looting and erosional loss. It is anticipated that vegetative regrowth will begin to mitigate visibility and stability of the exposed sites after winter 2016/2017.

Suitable Sites: The patrols should first focus on the sites that receive the most traffic, are of more value, and/or are prone to storm damage. Cost of patrols is $400.00 per site. Not listed in any order of preference, these include the following:

- 10IH159: Prehistoric lithic scatter, burned moderate
- 10IH160: Historic dump burned moderate
- 10IH1466: Culturally modified trees burned moderate to high
- 10IH2053: Pre/historic camp burned low
- 10IH2145: Depression era ERA camp burned low to moderate

- 10IH2233: Prehistoric/mid-20th century camp burned low to moderate
- 10IH553: Lewis and Clark camp site, meadow edges partially burned moderate
- 10CW405: Drainage ditch burned low, less than 1 mile
- 10CW1154: Lolo Motorway burned low to high, ~9 miles
- 01050001481: Nee-Mee-Poo trail burned low to high, for ~6 miles
- 01050001394: Bird-Truax Trail burned low to high for ~6 miles

Purpose of Treatment: With vegetation burned off over large parts of the incident, on-site monitoring by archaeologists is necessary to determine if active site erosion is taking place.

Road Treatments:

T4 – Restoring Drainage Function (Roads)

General Description: The goal is to restore drainage function to roads to allow increased post fire runoff that encounters the road to exit the roadway prism without damaging the roadway surface.

1) At various locations, road drainage has been compromised by the gradual creation of berms on the outside edges of roads or rutting that channels water down the road rather than allowing it to escape. As a result, water that encounters the road is channeled down the road, causing further damage including rutting and possible washout.
2) Some of the existing open top culverts (cross drains) have filled with sediment allowing water to continue flowing down the roadway rather than transporting it off, causing further damage including rutting and possible washout.
3) Some of the existing traditional culverts inlets are partially filled with sediment and/or debris. Removing the sediment/debris prevents additional blockage. A fully plugged culvert will overtop during flooding. This causes damage to the road and often leads to failure of adjacent roadway culverts as roadside ditches divert the overflow water to them.
4) One of the traditional HDPE culverts was melted and failed during the fire. The culvert needs to be replaced to prevent damage to the road from anticipated increased post fire runoff.

Suitable Sites: Treatment locations shall be as staked in the field. Road treatments are proposed along approximately 9 miles of maintenance level 2 to 4 roads:

Road Number	Name	Maintenance Level	Miles
103	Lolo Weitas	4	0.4
104	Pierce Lochsa	2	3.7
535	Hemlock	2	0.4
535-A	Hemlock Butte Lookout	2	0.3
547	Hemlock Ridge	3	3.8

Design/Construction Specifications: As needed, outslope road, remove outside berms, repair/re-establish roadside ditch, create lead-off ditches, create intercepting dips, replace open top culverts, clean culverts, replace melted HDPE culvert.

TREATMENT	UNIT	QUANTITY	PRICE	TOTAL
Mobilization	Lump Sum	1	$3,000	$3,000
Intercepting Dip	Each	38	$43	$1,634
Lead Off Ditch (3)	LS	1	$400	$400
Clean Ditch	LF	15	$15	$225
Open Top Culvert Replacement w/ Dip	Each	7	$150	$1,050
Clean Culvert (6-18", 1-24")	Each	6	$200	$1,200
Replace 18" HDPE Culvert with 24' CMP	Each	1	$2,000	$2,000
Design	Lump Sum	1	$951	$951
Contract Administration	Lump Sum	1	$746	$746
			Total	**$11,206**

Purpose of Treatment: The purpose of this treatment is to allow increased post fire runoff to flow over a road without damaging the road surface, while providing a drivable surface.

T5 – Road Storm Patrol

General Description: The patrols are used to identify those road problems such as plugged culverts and washed out roads and to clear, clean, and/or block those roads that have received damage. The storm patrollers shall have access to at least a backhoe and dump truck that can be used when a drainage culvert is plugged or soon to be plugged, and to repair roads which are exhibiting severe surface erosion.

Suitable Sites: The patrols should first focus on those roads that receive the most traffic, are of more value to the transportation system, and/or have high-risk structures that are prone to storm damage. Not listed in any order of preference, these roads include the following:

- Forest Road 101
- Forest Road 103
- Forest Road 104
- Forest Road 500
- Forest Road 535
- Forest Road 535A
- Forest Road 547

Design/Construction Specifications:

1. FS personnel will direct the work.
2. Immediately upon receiving heavy rain and during significant spring snowmelt the FS will send out patrols to identify road hazard conditions – obstructions such as rocks, sediment, washouts, and plugged culverts, so the problems can be corrected before they worsen or jeopardize forest road users.
3. The road patrols shall bring in heavy equipment necessary to mechanically remove any obstructions from the roads and culvert inlets and catch basins where necessary. All excess material and debris removed from the drainage system shall be placed outside of the bank-full stream channel where it cannot re-enter the stream.

PERSONNEL SERVICES: (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item): Do not include contract personnel costs here (see contractor services below).	COST / ITEM
2 – GS 11 @ $300/day X 5 patrol days =	$3,000
2- WG 10 Operators @ $300/day X 5 patrol days	$3,000
TOTAL PERSONNEL SERVICE COST	**$6,000**
EQUIPMENT PURCHASE, LEASE AND/OR RENT (Item @ Cost/Hour X # of Hours X #Fiscal Years = Cost/Item): Note: Purchases require written justification that demonstrates cost benefits over leasing or renting.	
1 backhoes @ $18/hour x 24 hours =	$432
1 Grader @ $35/hour x 24 hours =	$840
Pickups for storm patrols, 2 @ $0.33/mile mileage X 2000 miles =	$1,320
TOTAL EQUIPMENT PURCHASE, LEASE OR RENTAL COST	**$2,592**

Purpose of Treatment: Roads within the Motorway North Complex Fire contain drainage structures that cross primarily intermittent streams located in watersheds that have a moderate burn severity. These streams now have the potential for increased runoff. These increases in flows pose a threat to the existing crossings which may result in plugging culverts or exceeding their maximum flow capacity. If these flows plug drainage structures, the result will likely be additional erosion and debris further down the drainage due to the failures of the fill slopes of the roads.

T6 – Restoring Drainage Function (Trails)

General Description: This proposal will treat portions of the above system trails which are at high risk to damage from the additional runoff and erosion caused by post-fire conditions. The threats are from increased surface flow and upland slope erosion that will occur within the fire area. This flow will cause increased sediment loads on existing drainage structures, the need for new drainage structures, slough of back-slopes, and deterioration of fill-slopes. Safe travel and access for BAER rehab crews, as well as public safety will also be addressed.

Factors taken into consideration when prescribing trail treatments include: burn intensity, burn severity, soil type and structure, trail grade, side slope, topography, vegetative cover, watersheds, proximity to anadromous fish habitat, current trail use, and expected use.

Suitable Sites: Treatment locations shall be as designated in the field. The proposed treatment is located on the following seven trails: Camp Moose Horn, Dan Lee Ridge, Footrot corrals, Gass creek, Hemlock bypass, Lewis and Clark, and Nee-Mee-Poo.

Design/Construction Specifications: As needed, cleaning of drainage structures, replacement of damaged drainage structures, installation of new drainage structures where previously not required due to presence of vegetation, spot retreading, extended retreading, replacement of burnt turnpikes, hazard tree and downed tree removal, filling burnt stump and root holes in and under tread surface, crib walls for stabilization of tread, and posting visitor warning signs at access points.

TREATMENT	Unit	Unit Cost	Units Needed	Cost
Outsloping (Mod Severity)	mile	600	3.15	$1,890
Clean Trail Drain Structures	each	30	156	$4,680
Replace Drain Structures	each	30	142	$4,260
Install Drainage Structures	each	60	105	$6,300
Outsloping (High Severity)	mile	1,300	0.75	$975
Spot hazard tree removal	mile	800	3.9	$3,120
			Total	$21,225

Purpose of Treatment: The purpose of this treatment is to allow increased post fire runoff to flow over a trail without damaging the tread, while providing a durable surface.

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.)

Early Detection / Rapid Response Treatment Effectiveness Monitoring: Follow-up monitoring with program funds will occur in 2nd & 3rd years as needed if new or expanded weed populations are discovered during the 1st year BAER treatments. Costs included in treatment cost.

Road Treatment Effectiveness Monitoring: Monitoring will be conducted by district personnel and/or members of the Forest Engineering staff. Monitoring will consist of visiting the site after high intensity thunderstorms and/or after spring run off to ensure the drainage work is functioning as designed.

Part VI – Emergency Stabilization Treatments and Source of Funds

Initial Request

			NFS Lands		
		Unit	# of		Other
Line Items	Units	Cost	Units	BAER $	$
A. Land Treatments					
T1-Early Detection & Rapid Response	acres	327	45	$14,700	$0
Insert new items above this line!				$0	$0
Subtotal Land Treatments				$14,700	$0
B. Channel Treatments					
				$0	$0
Insert new items above this line!				$0	$0
Subtotal Channel Treatments				$0	$0
C. Road and Trails					
T4-Restore Drainage (Roads)	each	11,206	1	$11,206	$0
T5-Road Storm Patrol	each	8,592	1	$8,592	$0
T6-Restore Drainage (Trails)	mile	5,306	4	$21,225	$0
				$0	$0
				$0	$0
				$0	$0
				$0	$0
				$0	$0
Insert new items above this line!				$0	$0
Subtotal Road and Trails				$41,023	$0
D. Protection/Safety					
T2-Warning Signs	each	425	25	$10,615	$0
T3-Cultural Resource Patrol	sites	400	11	$4,400	$0
				$0	$0
				$0	$0
				$0	$0
Insert new items above this line!				$0	$0
Subtotal Protection/Safety				$15,015	$0
E. BAER Evaluation					
Initial Assessment	Report	$24,498	1	---	$24,498.33
Insert new items above this line!				---	$0
Subtotal Evaluation				---	$24,498
F. Monitoring					
				$0	$0
Insert new items above this line!				$0	$0
Subtotal Monitoring				$0	$0
G. Totals				$70,738	$24,498
Previously approved					
Total for this request				**$70,738**	

PART VII - APPROVALS

1. _____ _____
   Forest Supervisor (signature) Date

2. _____ _____
   Regional Forester (signature) Date