Date of Report and Type: Initial 11/07/2017

BURNED-AREA REPORT

(Reference FSH 2509.13)

PART I - TYPE OF REQUEST

A.	Туре	of	Rep	ort
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- □ 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: Crucifixion Creek

B. Fire Number: MT-HLF-005086

C. State: Montana

D. County: Pondera

E. Region:01 - Northern

- F. Forest: 15-Helena-Lewis and Clark
- G. District: Spotted Bear and Rocky Mountain
- H. Fire Incident Job Code: P1K9K (0115)

I. Date Fire Started 08/11/2017

J. Date Fire Contained: 10/18/2017

- K. Suppression Cost: \$607,612
- L. Fire Suppression Damages Repaired with Suppression Funds (estimates):
 - 1. Dozer Fireline repaired (miles): None completed yet
 - 2. Excavator Fireline repaired (miles): None completed yet
 - 3. Other (identify):

M. Watershed Numbers:

HUC #	Watershed Name	Total Acres	Acres Burned	% of Watershed Burned
100302010201	North Badger Cr	38,364	10,844	28
100302010103	Upper South Fork Two Medicine River	22,839	78	<1
100302010202	Lonesome Cr-Badger Cr	20,896	248	1

N. Total Acres Burned:

Table 2: Total Acres Burned by Ownership

a by connoiding		
ACRES		
11,012		
0		
0		
0		
0		

- **O. Vegetation Types:** Douglas fir, lodgepole pine, sub alpine spruce, and areas of grassland/sagebrush vegetative communities.
- P. Dominant Soils: The dominate soils are classified at the family level as Typic/Andic/Cryochrepts with surface textures of cobbly/very gravelly sandy loams/loams. Surface rock ranges in cover from 15 to 70 percent and in size from gravels to cobbles. The high elevation and steep slopes across much of the fire has bare bedrock with soils developing on protected aspects and lower elevations. The landtypes within the designated wilderness have been mapped, but data is not currently available. Soil types and attributes in this analysis were inferred from adjacent Land Type Association units (LTA) and the Lewis and Clark National Forest Soil Survey Data (SSURGO).

Table 3. Dominant soil map units within the Crucifixion Fire.

Landtype	Map unit name	Acres in Burn	Percent of Burn	Hydrologic Soil Group	Soil Material Erodibility**
18	Lithic Cryorthents	857	8	-) Š
22	Andic Cryochrepts	763	7	-	-
24	Glossic Cryochrepts	596	5	-	-
25	Andic Cryochrepts	853	8	2	-
71	Typic and Andic Cryochrepts	652	6	2	-
171	Typic Cryoborolls-Andic Cryochrepts	>1	>1	-) = :
172	Typic Cryoborolls-Andic Cryochrepts	783	7	-	1,41
181	Typic Cryochrepts-rockland	65	1	-	-
182	Rockland-Typic Cryochrepts	1301	12	*	(=)
200	Fluvents and Borolls	2	>1	_	
201	Aquepts and Aquolls	162	1	2	-
202	Rockland	2192	20	2	¥
25B	Andic Cryochrepts	262	2	_	848
25C	Andic Cryochrepts	2390	22	2	-
	Total	10877*	100%		Not the latest

^{*}acreage discrepancy results of rounding during analysis.

- **Q. Geologic Types**: Geology across the Crucifixion Fire is limestone, sandstone, and shale. Landforms are mountain high relief ridges and with slopes averaging 35 to 60 percent.
- R. Miles of Stream Channels by Order or Class:

Table 4: Miles of Stream Channels by Order or Class

STREAM TYPE MILES OF STREAM
PERRENIAL 25
INTERMITTENT/EPHEMERAL 21

S. Transportation System:

Trails: National Forest (miles): 17.2 **Roads:** National Forest (miles): 0

Other (miles): 0 Other (miles):)0

^{**} LTA Hazard Rating - Nesser 1998

PART III - WATERSHED CONDITION

A. Burn Intensity (acres):

Table 5: Burn intensity Acres by Ownership

Soil Burn intensity	NFS	BLM	State	Private	Total	% within the Fire Perimeter
Low	952	A 1 1 1 1 1 1			938	9
Moderate	3,234				3,287	30
High	4,376				4,387	40
Unburned	2,329				2,386	21
Total	11,012				11,012	100

- **B.** Water-Repellent Soil (acres): 4,376 (High) + 3,234 (Moderate) = 7,610
- C. Soil Erosion Hazard Rating: Burned acreage with available data: 7,873 acres slight; 3,287 acres moderate; 4,387 acres severe
- **D. Erosion Potential** (tons/acre): 8.4 tons/acre for the first two years following the fire.
- E. Sediment Potential(cubic yards/square mile):

The sediment delivery potential based on the ERMiT reports higher values than what historic flows show in the area based on past monitoring of wildland fires (Skyland, Elbow Pass, Red Shale, for example). The history of fire in this area is common and the geology, soils, vegetation seem to be able to handle pulses of sediment delivery with normal variation post wildland fire events.

Burn Intensity	Potential Erosion Hazard (ton/acre)		
	Year 1 Year 2		
Low	7.67	1.99	
High	16.69 7.28		

PART IV - HYDROLOGIC DESIGN FACTORS

- A. Estimated Vegetative Recovery Period (years):1-3 grass, 20-25 shrubs, 20-50 conifers
- B. Design Chance of Success (percent): 80
- C. Equivalent Design Recurrence Interval (years): 5
- D. Design Storm Duration (hours): 6 hr.
- E. Design Storm Magnitude (inches): .5 in
- F. Design Flow (cubic feet / second/ square mile): 5 cfs/mi²
- G. Estimated Reduction in Infiltration (percent): 30
- H. Adjusted Design Flow (cfs per square mile): 70 cfs/mi²

PART V - SUMMARY OF ANALYSIS

Introduction/Background:

The Crucifixion Creek Fire was a lightning caused ignition that was first detected on August 10, 2017. The fire burned approximately 11,012 acres and was contained on October 5, 2017. The burned area is located along the northern southern parts of the Badger-Two Medicine are of the Rocky Mountain Ranger Districts of the Helena-Lewis and Clark National Forest, approximately 40 Miles northwest Choteau, MT. The intensity map

shows that approximately 70% of the burned area experienced high or moderate burn intensity. The rest of the areas within the fire perimeter were either low burn intensity or unburned. Increased post fire soil erosion and runoff are likely to occur within and downstream of the moderate and high burn intensity areas and may result in localized flooding, scouring and/or deposition of materials.

Long duration (6+ hour), high intensity storms are the precipitation events of primary concern. Based on historic precipitation patterns, these types of events are likely to occur in the spring months following the fire. The risk of flooding and erosional events has increased as a result of the fire, creating hazardous conditions within and downstream of the burned area.

Recovery of pre-fire slope stability and watershed hydrologic response is dependent on many factors and typically occurs within 3-5 years following the fire. Recovery of high burn intensity areas is slower because little or no vegetative ground cover remains, the potential for needle cast is low, and soils may be impacted by fire effects.

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

Intermediate

A list of values important to the Helena-Lewis and Clark National Forest was compiled by the BAER team during the assessment kickoff meeting. The risk (FSM 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.

I able 6: Critical Value N	/latrix				
Probability of Magnitude of Consequences					
Damage or Loss	Major	Moderate	Minor		
		RISK			
Very Likely	Very High (trails)	Very High	Low		
Likely	Very High	High	Low		
Possible	High (weeds)	Intermediate	Low		

1. Human Life and Safety (HLS):

a. Very high risk to travelers along routes (trails) within and downstream of the burn scar due to an increased threat of flooding and debris flows from contiguous areas of high and moderate burn severity in watershed source areas. The probability of damage or loss is likely and the magnitude of consequences is major. (Treatments: T02)

Low

Very Low

b. Very high risk to travelers and trail workers along routes (trails) within and downslope from hillslopes burned at a moderate to high severity due to an increased threat of falling trees, rocks, and other debris. The probability of damage or loss is likely and the magnitude of consequences is major. (Treatments: T02)

2. Property (P):

Unlikely

a. Very high risk to trail infrastructure throughout the burn scar due to an increased post-fire watershed response to precipitation and runoff events that is expected to result in the loss of control of water, overwhelming of existing drainage features and erosion of the trail prism. The burned area contains approximately 17.2 miles of trails at risk. The probability of damage or loss is likely and the magnitude of consequences is major where the trail crosses below or through areas burned at high and moderate severity. (Treatments: T02)

3. Natural Resources (NR):

a. High risk to native plant communities due to the threat from the spread of noxious weeds and invasive plant species. Known noxious weed and invasive plant populations (spotted knapweed, Dalmatian toadflax, yellow toadflax, Canada thistle, musk thistle, bull thistle,

common mullen, St. Johnswort and houndstongue) exist within and immediately adjacent to the burned area. The highest risk species to spread include spotted knapweed and Dalmation toadflax. The probability of damage or loss is likely and the magnitude of consequences is moderate. Treatments (T01)

- b. Intermediate risk to bull trout habitat downstream due to potential sedimentation. The probability of damage or loss is possible and the magnitude of consequences is low to moderate. No treatment is recommended at this time.
- c. Intermediate risk to soil productivity and hydrologic function due to the threat of increased erosion and watershed response to precipitation events on areas that experienced moderate and high burn intensity. The loss of ground cover and presence of hydrophobic soils will result in increased soil erosion during runoff producing events. The probability of damage or loss is possible and the magnitude of consequences is moderate. BAER treatments are not recommended.
- d. Intermediate risk to Lynx habitat throughout the burn scar due to the consumption of multiforest structure and subsequent loss of habitat. The probability of damage or loss is possible and the magnitude of consequences is moderate. BAER treatments are not recommended.

4. Cultural and Heritage Resources:

a. The area has very little previous survey coverage and the known heritage sites are along National Forest System Trails. During fire suppression, the Badger Guard Station (24PN0013) was wrapped with fire protection wrap and a sprinkler system was laid out. These timely preventative actions resulted in the saving of the historic administrative cabin. There are a total of seven known heritage sites within or adjacent to the burn area. None of these sites rate very high on the BAER risk rating table and no erosion control treatment is recommended for any of these seven sites.

5. Other non-BAER Values:

a. There are numerous NFS values that are not BAER Critical Values in addition to non-NFS values potentially at risk from post-fire threats originating primarily on NFS lands. Treatments for these other values have not been identified. Activities to address the non-BAER Critical Values on NFS lands can be considered for discretionary program funding. It is recommended the non-NFS values potentially threatened by post-fire conditions be communicated to the appropriate parties through interagency coordination.

B. Emergency Treatment Objectives:

Protect or minimize damage to NFS investments in trail infrastructure by installing drainage features capable of withstanding potential increased stream flows and/or debris flows and stabilized trail tread at the risk of collapse due to increase runoff. Minimize damage to key NFS travel routes.

Protect or mitigate potential post-fire impacts to critical natural resources within the burned area. Implement treatments that minimize threats to native and naturalized ecosystems by minimizing the potential for expansion of non-native invasive species (NNIS) into the most susceptible otherwise pristine natural communities that burned within high and moderate severity.

Evaluate authorized BAER treatments and existing infrastructure to determine effectiveness in post-fire flow conditions. Monitor weeds for effectiveness of BAER treatments and to identify need for future treatments.

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

Land 80% Roads/Trails 70% Channel N/A Protection/Safety 80%

D. Probability of Treatment Success

Table 7: Probability of Treatment Success

	1 year after treatment	3 years after treatment	5 years after treatment
Land	85	85	90
Channel	N/A	N/A	N/A
Roads/Trails	80	90	90
Protection/Safety	90	80	70

- **E. Cost of No-Action (Including Loss):** (Replacement cost of trails = \$15,000*9.47 miles) + (Weeds non-BAER treatment weeds = 3*\$21,189) = \$205,617
- **F. Cost of Selected Alternative (Including Loss):** (Trails treatment = \$55,860) + (Trails loss = .3*\$55,860) + (Weeds BAER treatment cost = \$21,189) + (Implementation coordination/consultation = \$1,380) = **\$95,187**

G. S	Skills	Represented	no t	Burned-Area	Survey	Team:
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	□ Botany	□ Ecology	Economist	
	□ Forestry	⊠ GIS		□ Range
□ Recreation	Soils	oxtimes Team Lead	☐ Wildlife	

Team Leader: Wayne Green **Email:**wgreen@fs.fed.us

Phone: 406-791-7740

Forest BAER Coordinator: Wayne Green

Email:wgreen@fs.fed.us

Phone: 406-791-7740

Core Team Members:

Table 8: BAER Team Members by Skill

Skill	Team Member Name
Team Lead(s)	Wayne Green
Archaeology	Mark Bodily
Range/Weeds	Jason Oltrogge
Engineering	Jacob Noland
Fisheries	George Likness
GIS	Kelsey McCartney
Hydrology	Kate Condon
Recreation	lan Bardwell
Soils	Jonathan LeBlanc

H. Treatment Narrative:

(Describe the emergency treatments, where and how they will be applied, and what they are intended to do. This information helps to determine qualifying treatments for the appropriate funding authorities. For seeding treatments, include species, application rates and species selection rationale.)

Land Treatments:

T01 – Early Detection and Rapid Response

General Description:

Invasive plants and weed assessments will be conducted in FY2018 for Early Detection and Rapid Response (EDRR) on any new infestation within areas burned at high and moderate burn severity. Treatments will occur at proper phenology of each species to ensure maximum control.

Because noxious weeds are scattered 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. There are known infestations of spotted knapweed, Dalmatian toadflax, yellow toadflax, Canada thistle, musk thistle, bull thistle, common mullen, St. Johnswort and houndstongue within the burn perimeter.

Assess 37 acres of Forest Service land within the Crucifixion Creek Fire for new infestations of noxious weeds (20 foot either side of high and moderate burn trails). Invasive and noxious weed assessments from FY2017 will establish baseline data to be tracked through the Rocky Mountain Front Ranger Districts GIS databases and will be used to determine the priority, amount and intensity of control for new infestations of noxious weeds located within the burn area for FY2018. Spotted knapweed, Dalmatian toadflax and yellow toadflax are the primary species of concern most likely to spread in the burn.

The priority areas proposed for noxious weed/invasive species monitoring and EDRR are very susceptible to invasion due to fire suppression activities and existing populations of noxious weeds are now adjacent to non-infested areas that are devoid of surface vegetation. A program of early detection and rapid response to control new infestations is cost effective because it helps to prevent new weed and invasive species invasions from becoming large and too expensive to control.

Location/Suitable Sites:

Assess areas that have a high potential for weed/invasive species establishment. Critical areas include trails that cross moderate to high burn severity. The locations of highest concern are adjacent areas to trails where weeds may move from these vectors onto bared soil areas within the fire perimeter.

Treatment will occur on 82 acres of inventoried noxious weeds that are within the area of high to moderate burn intensity and 35.5 acres of linear features that were disturbed by suppression resources.

Design/Construction Specifications:

Conduct short-term monitoring in FY2018 using early detection and rapid response (EDRR) assessment/monitoring of noxious weed plant species infestations within the burned area. Monitoring will be done with crews able to treat infestations located during monitoring.

Inventory/assessment, map new noxious weed infestations within burned area using GPS technology and upload into the Helena-Lewis & Clark NF GIS Noxious Weeds database.

Chemical treatments using pack horse and backpack spray units will be used on any noxious weeds located within the fire on public lands.

Purpose of Treatment:

This treatment is necessary to prevent the establishment and to control the spread of new noxious weeds species into the burned area. EDRR will be used to prevent new noxious weed infestations from becoming established and to ensure the natural recovery of the native perennial grasses and forbs is not affected by the establishment of noxious weeds. This treatment will also ensure the ecological indicators (Soil Stability, Hydrologic Function, and Biotic Integrity) are functioning

properly during the natural recovery period on lands administered by the FS. Chemical treatment of new noxious weed infestations will reduce the likelihood of their spread to disturbed areas and help to preserve natural vegetation community services such as high quality wildlife habitat within the burn.

The fire is a disturbance that provides a receptive avenue for the spread of noxious weeds. Noxious weeds and non-native invasive species are a concern for biodiversity within natural vegetation communities. Weed invasion is a potentially threatening process leading to competition that decreases native vegetation regrowth and modifies the habitat these plant communities provide. Native plant species within these plant communities likely to be at greatest risk from weed invasion are those which occupy weed-prone habitats that have experienced moderate to high burn severity. This treatment mitigates this risk by allowing for an early means of detecting new noxious weed occurrences and a quick response for control.

Table 9: T01 - Weeds EDRR Treatment Types and Cost

TREATMENT DESCRIPTION	TARGET WEED SPECIES	PRESCRIPTION	ESTIMATED ACRES	COST PER ACRE	COST	TIMING
EDRR - SUPPRESSION IMPACTS	spotted knapweed, Dalmatian toadflax and yellow toadflax	Monitor resources. Treat target weeds species upon detection	37	\$120 – Includes: IDIQ contract for inventory and misc treatments. Pack horses and packer	\$4,440	FY18
EDRR – IN HIGH PRIORTY NATURAL COMMUNITIES	spotted knapweed, Dalmatian toadflax and yellow toadflax	Herbicide application by contract crew on moderate and high SBS sites where weeds are known to be present in minor amounts	82	\$155.00 – Includes: IDIQ costs plus chemicals	\$12,710	FY18

Channel Treatments:

Roads and Trail Treatments:

T02 - Trail Drainage Restoration /Tread Stabilization

General Description:

Treatment would provide immediate protection to the trail system. Trails may capture increased surface runoff caused by the lack of effective ground cover to inhibit excessive flow. Flows will intercept system trails and cause severe tread erosion and initiation of soil rutting adjacent to the trails. The trail system would be improved to withstand increased runoff, protecting property, workers and users.

Location/Suitable Sites:

Trails located within the fire perimeter include impacted for a total of 17.2 miles. Of the miles impacted, 9.3 miles are within the moderate to high burn intensity and would be treated. Trails to be treated would be limited to those in high to moderate burn intensity on slopes 15% or greater. The managed uses for these trail systems are Hiker and Pack and Saddle. Priority trails to be worked on include those that are within or below moderate to high burn severity slopes and those with

sustained steep grades that have inadequate drainage. Refer to BAER Treatment Map for specific locations

Design/Construction Specifications:

Install waterbars depending on steepness of trail in areas of moderate or high intensity:

- 50 per mile on high to moderate burn intensity slopes >30%
- 25 per mile on high to moderate burn intensity slopes 15 to 30%
- 10 per mile on moderate to high burn intensity slopes 0-15%

Install waterbars in sections of trail that have continuous gradient for a length of greater than 50 feet and are either insloped (cupped) or show evidence of routing water (rills, gullies).

Construct tread retention structures where necessary and downslope of burnt slopes that lost stabilizing vegetation.

Mitigate hazards from rocks and trees within the trail route that restrict safe access and movement at work sites. If the area poses a large safety risk then the work will be delayed until safety risk is stabilized.

Purpose of Treatment:

Trails within the Crucifixion Creek Fire to be treated are located within and downslope of moderate to high burn severity slopes. Predicted increased runoff due to water repellant soils and lack of effective ground cover will be intercepted and captured by trails, leading to severe trail tread erosion that will render the trails unusable or dangerous to use. Hikers and stock parties are the primary users. Additional hazards caused by the fire such as hazard trees and rock fall will create unsafe conditions at trail access points and worksites along the trails to workers.

The fire has burned adjacent slopes above and along the trail routes that will result in runoff that will damage the system substantially enough to prevent future use of the trails. The increased erosional risk to trails can be mitigated with drainage structures, tread stabilization, and scheduled drainage maintenance. The treatments directly mitigate these increased threats in that adequate trail tread drainage will pass accelerated erosional runoff off the tread and prevent tread erosion, and firegenerated hazards such as hazard trees and rock fall will be removed in and around trail work sites.

These treatments would prevent unacceptable erosion and loss of trail investment and minimize contribution of trail derived sediment to streams. Treatments ensure drainage structures are sufficient to divert water effectively given increased runoff and increased sediment movement. Treatments will protect property and watershed values. Treatment will prevent injury and lower risk to workers and users.

Table 10:T02 - Trail Stabilization Cost Estimate

TREATMENT	UNIT	UNIT COST	# OF UNIT	TOTAL COST
TRAIL STABILIZATION	Mile	\$3,651	15.3	\$55,860
HAZARD TREE MITIGATION AT WORKSITES	Mile	\$1,000	5	\$5,000

Protection/Safety Treatments: None proposed

BAER Evaluation

T03 - Implementation Coordination

Associated activities obligated under ID-FSM2520-2017-1 need to be considered in the BAER funding request when emergency response actions are authorized. These are accumulated tasks above the normal program of work and generally not accounted for in out-year program planning. Because implementation of approved BAER response actions trigger these required tasks and the unit's allocated budget does not account for these obligations, BAER funding is the appropriate authorization to ensure this coordination and consultation is completed.

Table 11: T03-Coordination and Consultation Cost Estimate

TREATMENT	UNIT	UNIT COST	# OF UNIT	TOTAL COST	
IMPLEMENTATION TRACKING & REPORTING FOREST BAER COORDINATOR (GS-12)	Days	450	4	\$1,800	

I. Monitoring Narrative:

T01-Early Detection Rapid Response: Treatment sites will be evaluated annually for the next three years to ensure control methods are meeting resource objectives and to inventory for new invaders. Weed specialist/technicians will visit chemically treated sites after treatment; this is especially important for weed populations that are sprayed to ensure efficacy of herbicide application. Initiate follow-up treatments if additional non-native species or new infestations are discovered. Control will be considered successful upon determination that all noxious weeds have been controlled have not spread beyond their pre-fire locations.

T02-Trail Drainage Reconstruction: The drainage improvements will be inspected throughout the year after implementation to monitor the effectiveness of water run-off and the trail drainage condition.

T03-Implementation Coordination: Forest BAER Coordinator will file annual accomplishment report.

PART VI - EMERGENCY STABILIZATION TREATMENTS AND SOURCE OF FUNDS

		Unit	# of		Other	# of	Fed	# of	Non Fed	Total
Line Items	Units	Cost	Units	BAER \$	\$	units	\$	Units	\$	\$
A. Land Treatments									,	
T01- Detection and survey	Acres	120	37	\$4,440	\$0		\$0		\$0	\$4,440
T01-EDRR	Acres	155	82	\$12,710	\$0		\$0		\$0	\$12,710
Insert new items above this line!				\$0	\$0		\$0		\$0	\$0
Subtotal Land Treatments				\$17,150	\$0		\$0		\$0	\$17,150
B. Channel Treatments										
Insert new items above this	linei			\$0	\$0		\$0		\$0	\$0
Subtotal Channel Treatment	s			\$0	\$0		\$0		\$0	\$0
C. Road and Trails								10		
T02-Trail Drainage	Miles	3,651	15	\$55,860	\$0		\$0		\$0	\$55,860
T02-Hazard Tree Mitigation	Miles	1,000	5	\$5,000	\$0		\$0		\$0	\$5,000
insert new items above this				\$0	\$0		\$0		\$0	\$0
Subtotal Road and Trails				\$60,860	\$0		\$0		\$0	\$60,860
D. Protection/Safety										
Insert new items above this	line!			\$0	\$0		\$0		\$0	\$0
Subtotal Protection/Safety				\$0	\$0		\$0		\$0	\$0
E. BAER Evaluation										
Initial Assessment	Report	\$27,292			\$0		\$0		\$0	\$0
T03-Implementation Coordin	ation/Inter	\$450	4	\$1,800	\$0		\$0		\$0	\$0
Insert new items above this					\$0		\$0		\$0	\$0
Subtotal Evaluation				\$1,800	\$0		\$0		\$0	\$(
F. Monitoring										
Insert new items above this	line!			\$0	\$0		\$0		\$0	\$1
Subtotal Monitoring				\$C	\$0		\$0		\$0	\$0
G. Totals				\$79,810	\$0		\$0		\$0	\$78,010
Previously approved				7.5,515	7					-
Total for this request				\$79,810						

PART VII - APPROVALS

1. 1/17/17	<i>J</i> 2017
Forest Supervisor	Date
2. PaneMMake	11/20/2017
Leanne Marten, Region 1 Regional Forester	Date

