

Date of Report: 10/01/2015

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: Tunk Block Fire B. Fire Number: WA-NES-001219
C. State: Washington D. County: Okanogan
E. Region: Pacific Northwest (R6) F. Forest: Okanogan-Wenatchee NF
G. District: Tonasket RD H. Fire Incident Job Code: PNJ16A (1502)
I. Date Fire Started: 08/14/2015 J. Date Fire Contained: est. 09/30/2015 as of 09/24/2015
K. Suppression Cost: \$0.2 million as of 0/2/1/2015
L. Fire Suppression Damages Repaired with Suppression Funds
 1. Fireline waterbarred (miles): 117
 2. Fireline seeded (miles): 0
 3. Other (identify): 0

M. Watershed Number:

5 th Field HUC	6 th Field HUC	6 th Field HUC Acres	% of 6 th Field HUC Burned	% of 6 th Field HUC Burned on NFS land
West Fork Sanpoil River	Aeneas Creek	16,857	4%	3%
	Upper Lost Creek	34,697	29%	1%
Bonaparte Creek	Lower Bonaparte Creek	33,121	34%	4%
	Peony Creek	20,140	17%	14%
Tunk Creek-Okanogan River	Tamarack Spring	10,115	99%	7%
	Upper Tunk Creek	24,927	76%	7%
	Chewiliken Creek	16,890	87%	8%

N. Total Acres Burned: 166,000

NFS Acres(8,600) Other Federal (84,200) State (15,700) Private (57,500)

O. Vegetation Types: Ponderosa Pine Forest, Mixed Conifer Forest, Montane Meadows, Riparian Wet Meadows, Cottonwood-Alder Riparian Forest

P. Dominant Soils: Manley-Devore Complex (223), 15-35 percent slopes ; Nevine-Merkel Complex (263), 15-35 percent slopes ; Louploup-Stepstone Complex (220), 15-35 percent slopes ; Stepstone-Torboy Complex (347), 0-15 percent slopes

Q. Geologic Types: Granitic and Gneissic bedrock formations, Metamorphic Schist bedrock formations, Rhyolitic and Andesitic bedrock formations, Eolian volcanic ash, Alluvial glacial till and outwash

R. Miles of Stream Channels by Order or Class:

Stream	Miles of Stream within Burned Area	Miles of Stream on NFS Land within Burned Area
Perennial	83.5	3.8
Intermittent	4.5	1.3

S. Transportation System (on NFS land only):

Trails: 0 miles Roads: 44.3 miles

Road Maintenance Level	Miles of NFS Road within Burned Area
1	15.4
2	10.1
3	5.6
4	0
5	0
Unclassified	13.2

Human Life and Safety; Property	Non-system Trail (Non-motorized)	Peony Creek	Low	Post-fire watershed conditions threaten the life and safety of visitors using Forest Service trails and trail infrastructure within and downstream of the fire perimeter. Trails are downslope of high/moderate severity burned areas increasing the risk from debris flows, increased runoff, and rill/gully erosion from over-steepened slopes during storm events. These events can plug culverts, erode roadbeds, and trap the public behind damaged areas. There is also an increased risk from burned hazard trees and rockfall.
Natural Resources	Native or naturalized communities on NFS lands where invasive species or noxious weeds are absent or present in only minor amounts	Upper Tunk Creek	All High	Field reviews indicate that there is a substantial risk of noxious weed invasion along roads, handlines, and dozerlines used during fire suppression activities. This threat is due to the likelihood that some noxious weed seeds were brought into the area by fire equipment and suppression activity within known noxious weed locations within the burn. The slow natural regeneration following moderate to high burn severity also leaves some areas at risk. Known noxious and invasive weed populations are expected to aggressively compete with native species for space and nutrients in burned areas.
		Tamarack Spring		
		Chewiliken Creek		
		Lower Bonaparte Creek		
		Aeneas Creek		
		Peony Creek		
Natural Resources	Soil productivity and hydrologic function on NFS lands	Upper Tunk Creek	All High	Risk of accelerated erosion is very high because the forest canopy and effective ground cover have been denuded by moderate to high intensity fire. Soils are also very erodible and some are on steep slopes. A 2 or 5-year rainstorm event occurring within several years after the fire will greatly increase the potential for topsoil loss, including the ash from the burned plant litter and duff, and reduce the soil productivity of these sites for decades.
		Tamarack Spring		
		Chewiliken Creek		
		Lower Bonaparte Creek		
		Aeneas Creek		
		Peony Creek		

B. Emergency Treatment Objectives:

The primary objectives of the emergency BAER treatments are to:

- Reduce threats of changed post-fire hillslope hazards on human life and safety, particularly where Forest roads are at risk of increased rates of falling rocks and trees that present a hazard to users (visitors and employees).
- Reduce threats of post-fire watershed response (e.g. increased erosion and runoff) on the NFS road system.
- Reduce threats of post-fire watershed response on the Forest Service system trails.
- Reduce threats of post-fire watershed response and erosion potential on hillslopes above Forest Service system roads and on Forest Service system roads themselves.
- Control expected invasion of noxious weeds within the area, especially along and adjacent to Forest roads and dozer lines used by fire equipment and in existing populations within the fire boundary.
- Reduce threats of changed post-fire visibility and access to cultural resources that could lead to vandalism, theft, or damage.
- Identify appropriate monitoring activities that estimate the effectiveness of emergency stabilization treatments and identify necessary maintenance and continuation of other approved BAER activities.

PART III - WATERSHED CONDITION

- A. Burn Severity on NFS land (acres): 1 456 (very low/unburned) 3 812 (low) 2 419 (moderate) 950 (high)
- B. Water-Repellent Soil (acres): 2,400
- C. Soil Erosion Hazard Rating (acres): 360 (low) 3 354 (moderate) 157 (high)
- D. Erosion Potential: 5.6 tons/acre
- E. Sediment Potential: 337 cubic yards / square mile

PART IV - HYDROLOGIC DESIGN FACTORS

- A. Estimated Vegetative Recovery Period, (years): 1-5
- B. Design Chance of Success, (percent): 95%
- C. Equivalent Design Recurrence Interval, (years): 25
- D. Design Storm Duration, (hours): 3 Hours
- E. Design Storm Magnitude, (inches): 1.5"
- F. Design Flow, (cubic feet / second/ square mile): 58 cfs/sq. mi.
- G. Estimated Reduction in Infiltration, (percent): 40%
- H. Adjusted Design Flow, (cfs per square mile): 75 cfs/sq. mi.

PART V - SUMMARY OF ANALYSIS

Background: The Tunk Block Fire, located near the town of Omak, was reported on August 14, 2015. The final acreage of the fire is about 166,000 acres on the Okanogan-Wenatchee National Forest, the Colville Indian Reservation, Bureau of Land Management, Washington State land, and private land.

A. Describe Critical Values/Resources and Threats:

Critical Value	Value at Risk	Subwatershed with Value	Risk	Threat Description
Human Life and Safety; Property	Roads	Upper Tunk Creek	Very High - Human Life and Safety; High - Property	Post-fire watershed conditions threaten the life and safety of visitors using Forest Service roads and road infrastructure within and downstream of the fire perimeter. Roads are downslope of high/moderate severity burned areas increasing the risk from debris flows, increased runoff, and rill/gully erosion from over-steepened slopes during storm events. These events can plug culverts erode roadbeds, and trap the public behind damaged areas. There is also an increased risk from burned hazard trees and rockfall.
		Chewiliken Creek	High - Human Life and Safety; Very High - Property	
		Lower Bonaparte Creek	Low	
		Aeneas Creek	Low	
		Peony Creek	High - Human Life and Safety; Very High - Property	

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

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

D. Probability of Treatment Success

Treatment Type	Years After Treatment		
	1	3	5
Land (Noxious Weed EDRR)	70	80	80
Roads (Drainage Stabilization and Closure)	80	90	90
Protection/Safety (Hazard Tree Removal)	100	100	100
Protection/Safety (Storm Patrol)	100	100	100
Protection/Safety (Burned Area Warning Signs)	100	100	100
Protection/Safety (Drainage Stabilization and Closure)	80	90	90

E. Cost of No-Action (Including Loss): Refer to Values at Risk (VAR) spreadsheet for specific information

The VAR analysis summary identified that the total treatment cost is estimated at \$50,883 with an expected benefit of \$395,000. The summary implied minimum value of protecting non-market resource critical values is justified for the treatments proposed in this BAER assessment. The expected benefit/cost ratio is 7.8.

F. Cost of Selected Alternative (Including Loss): Refer to (VAR) spreadsheet for specific information

G. Skills Represented on Burned-Area Survey Team:

<input checked="" type="checkbox"/> Hydrology	<input checked="" type="checkbox"/> Soils	<input type="checkbox"/> Geology	<input type="checkbox"/> Range
<input type="checkbox"/> Forestry	<input checked="" 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 checked="" type="checkbox"/> GIS	<input type="checkbox"/> Landscape Arch

Team Leader: John Chatel, Pacific Northwest TES Program Manager

Email: jchatel@fs.fed.us

Phone: 503-808-2972

FAX: 503-808-2469

BAER Assessment Team Members

Team Leader (trainee) - William Amy, Wildlife Program Manager, Santa Fe NF

Team Leader (trainee) - Kate Meyer, Fisheries Biologist, Willamette NF

Soils - Eric Robertson, Forest Soil Scientist, Apache-Sitgreaves NF

Soils - Crystal Danheiser, Forester, Lassen NF

Soils (trainee) - Stacey Weems, Forest Soil Scientist, Uinta-Wasatch-Cache NF

Hydrology - Bill Goodman, East Zone Hydrologist, Fremont-Winema NF

Hydrology - John Rihs, Forest Hydrologist, Apache-Sitgreaves NF

Hydrology - Mike McConnell, North Zone Hydrologist, Gifford Pinchot NF

Engineering - Judy Kittson, District Engineer, South West Colorado BLM

Engineering - Shawn Robnett, Assistant Forest Engineer, Sawtooth NF

Engineering - Barbara Shanley, Civil Engineer, Lake Tahoe Basin

Heritage - Alicia Beat, Archeologist, Colville NF

GIS - Kim Vieira-Rainville, DRM GIS Analyst, R6

GIS - Lisa Brehm, Cartographic Technician, Ottawa NF

Recreation - Eric Amstad, Recreation Technician, Malheur NF

Recreation - Dave Lent, Facility Maintenance/Recreation, Colville NF

Botany - Tom Bates, Assistant Forest Botanist, Arapahoe/Roosevelt/Pawnee NF

H. Treatment Narrative:

LAND TREATMENTS

Noxious Weeds Early Detection Rapid Response

Purpose of Treatment: Prevention, combined with early detection and rapid response, is the most effective means of controlling noxious weeds and protecting native plant communities. Prevent establishment of new infestations, prevent spread of existing infestations, and prevent increase in weed density in existing infestations.

General Description: Field reviews by Forest Service BAER team indicate that there is a risk of noxious weed invasion. There are 12 species of non-native invasive plants (absinth wormwood, common St. Johnswort, Dalmatian toadflax, diffuse knapweed, hoary allysum, houndstongue, meadow hawkweed, plumeless thistle, orange hawkweed, oxeye daisy, sulphur cinquefoil, and tansy ragwort) documented within the burned area. Miles of dozerline and heavy fire suppression traffic travelling from areas of existing noxious weed infestations greatly increases the risk of introducing noxious weed seeds to adjacent native plant communities that were burned within the fire perimeter.

Location (Suitable Sites): Known and expected weed infestations within and directly adjacent to moderate to high severity burned areas on the Tunk Block Fire burned area on National Forest System lands. All mechanical and hand constructed control line (approx. 43 miles), drop points, heli-spots and heli-bases (approx. 1.25 acres).

Design/Construction Specifications:

- a) Select herbicide, application rate, and application timing based on specific weed being treated, and access to the location of the infestation. Consider TES (listed species) habitat and sensitivity when selecting appropriate herbicide.
- b) Conduct weed detection surveys to identify and remove newly discovered infestations adjacent to existing weed infestations.
- c) Conduct weed detection surveys and remove newly discovered infestations along dozer & hand lines, and inside and around noted polygons of high and moderate burn severity areas that are designated for reseeding.
- d) Treat areas with herbicides and mechanical practices.

ROADS AND TRAIL TREATMENTS

Road Drainage Stabilization and Closure

Purpose of Treatment: The severity of burn in some drainages, combined with road location, high likelihood of damage by heightened runoff and accelerated erosion has increased the risk to road infrastructure. Segments of roads within the Tunk Block Fire were noted to be vulnerable to this type of impact. For these segments, we observed existing culverts and drainage structures that are undersized and/or are insufficient for the expected increase in sediment and flows. Several culverts on the upper segment of Road 3010-200 were identified as being at high risk of being plugged and overtopped due to the expected increase in runoff and sediment. The burn also increased the risk of adjacent hazard trees falling across the road. The purpose of these treatments is to increase roadway stabilization to pass large flows and associated bedload and protect road template from increased flows and decrease the chances of washing road fill into adjacent drainage structures and flow channels. Road closure is recommended on roads where travel has been determined to be unsafe due to potential flooding and hazard trees.

General Description: Several road stabilization treatments have been prescribed for Forest Service roads located within the Tunk Block Fire that will be directly impacted by post fire events. These treatments are necessary to mitigate the predicted effects that will occur to the transportation infrastructure system.

Location (Suitable Sites): About 5 miles of ML 2 and ML 3 roads are located in moderate and high severity burn areas.

1. Road 3010-200 (ML 2) - will require four miles of ditches and culverts cleaning. This road is a high traffic road and is under contract for a timber sale. In one location on this road also has a higher potential of a culvert being plugged and overtopped. A culvert riser would be installed on the inlet and a rolling drain dip over the culvert to address this risk.

2. Road 3010-200 - Due to high risk of frequent drainage issues and abundance of hazard trees, we recommend closing this road and install two closure gates.
3. Road 3015 (ML 3) - Clean one mile of ditches and culverts.
4. Road 3015-175 (ML 1) - Remove two culverts and blocked entrance by installing rock and dirt berms.

Design/Construction Specifications:

Maintenance Level 2 and 3 Roads:

5. Rolling Drain Dips (with or without armor) – Construct rolling dips per Forest Service standards. Place rip rap across the roadway and on the fill slopes where potential runoff can occur if flow was to overtop the roadway from a plugged culvert or excessive runoff.
2. Ditch Cleaning – All drain ditches along the length of the roads at risk (high and moderate burn severity) shall have all existing silt and debris removed and either hauled away or spread out such that the material cannot reenter the drainage structure during a runoff event.
3. Remove Culverts - Culverts will be removed and have the excavated hole laid back to match the surrounding stream banks in order to pass the increased flows and debris that are anticipated from future storm events.
4. Culvert Cleaning – Remove any blockages from inlet, outlet and inside barrel. Straighten bent or replace inlets. Catchment-basins shall have all existing silt and debris removed and either hauled away or spread out such that the material cannot reenter the drainage structure during a runoff event. Install carsonite posts when necessary.

Maintenance Level 1 Roads: There are 15 miles of ML 1 roads within the fire perimeter. Some of these roads that are in a closed status may still have drainage structures at risk from plugging. A complete inventory of these roads did not occur during the rapid assessment. However, it is believed portions of these roads will need drainage treatments to be properly closed. We are proposing to remove 2 culverts and block the entrance to Road 3015-175 (ML 1) by installing rock and dirt berms.

1. Remove Culverts - Culverts will be removed and have the excavated hole laid back where needed to match the surrounding stream banks in order to pass the increased flows and debris that are anticipated from future storm events.
2. Block Entrances - Install rock and dirt berms on Level 1 roads that are currently in a storage status, but not closed. These roads are a high risk to flooding and erosion.

PROTECTION AND SAFETY TREATMENTS

Road Storm Patrols

Purpose of Treatment: The purpose of storm patrols is to evaluate the condition of roads for motorized access and to identify and implement additional work needed to maintain and/or repair damage to road surfaces and flow conveyance structures across roads in order to provide safe access across FS lands.

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 are or 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 any road receiving severe surface erosion.

District personnel will survey the roads within the fire perimeter after high-intensity rain-on-snow events or summer thunderstorms in 2016. Surveyors will inspect road surface condition, ditch erosion, rolling drain dip failure and culverts/inlet basins for capacity to accommodate runoff flows.

General Description: Roads within the Tunk Block Fire contain drainage structures that cross streams located in drainages that have areas of a large percentage of high burn severity. These channels now have the potential for increased runoff and debris flows which may result in plugging culverts or exceeding their maximum flow capacity. If these flows plug drainage structures, the result could be

massive erosion and debris torrents further down the drainage due to the failure of the fill slope.

Also, there is an immediate and future threat to travelers along these roads within the burned area due to the increased potential for rolling and falling rock from burned slopes and increased potential for flash floods and mudflows. With the loss of vegetation normal storm frequencies and magnitudes can more easily initiate rill and gully erosion on the slopes and it is likely that this runoff will cover the roads or cause washouts. These events make for hazardous access along steep slopes and put the safety of users at risk.

Location (Suitable Sites): The patrols should first focus on the Forest Service roads that receive the most traffic and are of more value to the transportation system. Due to the vast distance between each of the roads to be patrolled the team could also check where the highest rain intensities occurred when a storm passes through the fire area and concentrate their efforts on the areas receiving the most precipitation.

Design/Construction Specifications:

1. FS personnel will direct the work.
2. Immediately upon receiving heavy rain and/or 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 motor vehicle 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.
4. All excess material and debris removed from the drainage system shall be placed outside of bank-full channel where it cannot re-enter stream channels.

Burned Area Warning Signs

Purpose of Treatment: The purpose of "Burned Area Warning Signs" is to reduce the risks to human life and safety by warning motorists of existing threats while traveling the authorized routes within the areas susceptible to flooding, debris flows, hazards trees, and all other risks attributable to post fire events on the landscape.

General Description: This treatment is for installation of "Burned Area" warning signs, highway warning signs, and road closure signs.

Location (Suitable Sites): Locations for "Burned Area" warning signs will be located at points of entries by use of forest system roads into the burned areas. These locations are as follows (also refer to Treatment Map):

- Beginning of the fire perimeter each end along Road 3015 – 2 each
- Northbound Road 200 before intersection with Road 257 – 1 each
- Beginning of the eastern fire perimeter along Road 260 – 1 each
- Beginning of the fire perimeter along Road 3010-200 – 1 each
- Beginning of the fire perimeter along Road 3010-200 west of Road 200 – 1 each

Design/Construction Specifications: "Burned Area" warning signs along the roads shall measure, at a minimum, 30 inch by 36 inch and consist of 0.08" aluminum, sheeted in high intensity yellow with black letters, which is shown in the photo below. The "BURNED AREA" lettering shall be a minimum of 5 inches in height and all remaining lettering shall not be less than 3.5 inches in height.

Hazard Tree Removal

Purpose of Treatment: The purpose of removing identified hazards trees is to reduce the threat to workers installing road treatments and the public using high traffic roads (ML 3 and roads to private property inholdings).

General Description: Forest Service roads within the Tunk Block Fire that pass through areas where the severity of the burn is moderate and high are at risk of having burnt and dying trees fall over the roadway. These hazard trees pose a risk to motorists using these roads as well as workers implementing BAER treatments, especially during high wind events.

Location (Suitable Sites): All hazard trees on Level 3 roads and higher would be felled. Spot hazard trees will be felled on several high traffic Level 2 roads that will remain open to reduce risks. Spot hazard trees would also be removed on all Level 2 roads where drainage work would occur in extensive areas of high and moderate burn. If Level 2 roads are deemed needed for salvage then non-emergency

funds should be used to reduce hazard tree risks. If any remaining Level 2 roads are deemed high traffic roads and not needed for salvage then more extensive hazard tree removal should be implemented and an interim 2500-8 for these costs submitted. ML 1 roads are closed roads and will not be treated.

Design/Construction Specifications

1. FS personnel will prepare and administer the contract.
2. Estimated length of ML 3 roads in high to moderate severity burn areas total 1 mile, also 0.5 miles of spot treatment for ML 1 and ML 2 roads is required to provide safety for work on road stabilization.
3. Assume the removal of hazard trees within approximately 75 feet of the road centerline to calculate total acreage of area to cut and drop hazard trees = 28 acres.
4. Assuming only trees on slopes above the road need to be treated, estimate 50% of the 28 acres will need to be treated = 14 acres.

I. Monitoring Narrative:

** No monitoring funding is being requested. All of the monitoring below is already included in the previous treatments. Monitoring is only displayed here to better portray what is taking place.*

Road Treatments

Storm Patrols – Monitor the storm-patrol response time to ensure objectives are being met. Identify the type of storm event that mobilizes material.

Road Drainage – Monitoring shall be performed during while construction is in progress and re-inspected during "Storm Inspection and Response" periods.

Gate and Signs - MUTCD or Forest Service standards and will be periodically checked by the district to ensure they are still in place. Monitoring shall be performed during while construction is in progress and re-inspected during "Storm Inspection and Response" periods.

Hazard Trees - Monitor the hazard tree removal by taking note of the reduced number of trees seen falling across the roads each spring when the roads are drivable and after high winds events.

Part VI – Emergency Stabilization Treatments and Source of Funds

Interim #

			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										
Noxious Weeds EDRR	Acres	60	314	\$18,840						\$18,840
Insert new items above this line!										
Subtotal Land Treatments				\$18,840	\$0				\$0	\$18,840
B. Channel Treatments										
Insert new items above this line!										
Subtotal Channel Treat.				\$0	\$0				\$0	\$0
C. Road and Trails										
Road Drainage Stabilization (ML 3)	Miles	1880	1	\$1,880	\$0					\$1,880
Road Drainage Stabilization (ML 2)	Miles	2961	4	\$11,844	\$0					\$11,844
Road Drainage Stabilization (ML 1)	Miles	2345	1	\$2,345	\$0					\$2,345
Insert new items above this line!										
Subtotal Road & Trails				\$16,069	\$0				\$0	\$16,069
D. Protection/Safety										
Gate Closure (ML 2)	Each	3500	2	\$7,000	\$0					\$7,000
Berm Closure (ML 1)	Each	1000	1	\$1,000	\$0					\$1,000
Road Storm Patrol	Days	2055	4	\$8,220	\$0					\$8,220
Burned Area Warning Signs	Signs	527	6	\$3,162	\$0					\$3,162
Hazard Tree Removal	Acres	328	14	\$4,592	\$0					\$4,592
Insert new items above this line!										
Subtotal Protection/Safety				\$15,974	\$0				\$0	\$15,974
E. BAER Evaluation										
Insert new items above this line!										
Subtotal Evaluation				\$22,788	\$0				\$0	\$22,788
F. Monitoring										
Insert new items above this line!										
Subtotal Monitoring				\$0	\$0				\$0	\$0
G. Totals										
Previously approved				\$58,883	\$0				\$0	\$58,883
Total for this request				\$58,883						

PART VII - APPROVALS

1.


Forest Supervisor (signature)

Date

10/11/15

2.


Regional Forester (signature)

Date

10.15.15