SUPPRESSION REPAIR PLAN

Windy Rock Fire

Montana Department of Natural Resources
Bureau of Land Management – Missoula Field Office

Fire Number PNS7VK

Incident Number (2025-MT-SWS-256444)

9/9/2025

Prepared By:

Lea Tuttle Resource Advisor Date

Approved By:

9-9-2025

Brent Olson, Incident Commander Date

9-9-2025

Michael Albritton, Agency Administrator, Bureau of Land Management, Missoula Date

9-9-2025

Craig Hansen, Montana, Department of Natural Resources and Conservation Date

Introduction

This fire suppression repair plan will be used to guide repair of damage to landscape or landscape features resulting from fire suppression activities on the Windy Fire. Damages from fire suppression requiring repair occurred on land managed by the Bureau of Land Management Missoula Field Office (BLM), Department of Natural Resources and Conservation, Anaconda Unit (DNRC), and private lands. DNRC is the fire protection agency for BLM.

The intent of this fire suppression repair plan is to mitigate or eliminate resource damage that occurred to lands impacted by suppression activities on the Windy Rock Fire. This document includes agency responsibilities, repair objectives, guidelines, and specifications for suppression repair.

Responsibilities

This plan provides fire suppression repair standards for cost-effective and objective-focused implementation of repair work. This plan was prepared by Incident Resource Advisors (REAFs) from the BLM with review and approval from the DNRC Line Officer and BLM Line Officer and Agency Administrators.

The assigned DNRC Line Officer is responsible for plan implementation. Work will likely be completed by the Montana DNRC Anaconda Fire Unit. Approval of completed repair will be determined by the Incident Resource Advisors (REAFs) and/or the agency administrators.

Repair activities on BLM lands will be conducted under the authority of the Montana DNRC.

Costs incurred to repair fire suppression damages are charged directly to the Windy Rock Fire.

Implementation

Suppression repair and rehabilitation treatments and implementation are being tracked in Field Maps "2025 Windy Rock Suppression Repair Map" through the NIFC ArcGIS Online platform. For user access to the Windy Rock Fire Suppression Repair group requests may be sent to eheiselmann@blm.gov. In addition, a treatment implementation tracking spreadsheet is attached to this plan. It includes treatment locations, site specific repair plans, necessary equipment, and desired implementation timelines. Site specific maps will be provided to aid in field implementation by REAF's by 9/11/2025.

REAFs:

Lea Tuttle – Forest Service, lea.tuttle@usda.gov.

John Fothergill – Bureau of Land Management, jfothergill@blm.gov.

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Objectives

The following objectives will be met for all repair work completed on the Windy Rock Fire:

1. **Firefighter Safety** – Ensure all suppression repair work is done in a safe and efficient manner.
2. **Vegetation and Soils** – Avoid accelerated soil erosion and reestablish native vegetation to prevent accelerated soil erosion.
3. **Water Quality and Watershed Values** – Minimize sediment delivery into streams and/or drainages to maintain water quality. Restore drainage patterns by repairing disturbed soil conditions.
4. **Cultural Resources** – Protect any cultural resource sites that were impacted and repair areas where fire suppression activities exposed previously hidden values or destabilized slopes near sites.
5. **Threatened, Endangered, & Sensitive Species** – Minimize potential for impacts to Threatened, Endangered & Sensitive Species habitat. Return motorized access to pre-suppression status to protect habitat. (Grizzly bear, Canada lynx, Westslope cutthroat trout, western pearlshell mussel).
6. **Noxious Weeds** – Minimize noxious weed spread from suppression activities to protect native vegetation.
7. **Travel Management** – Restrict unintended/undesired motorized vehicle access that may have been created by the construction of evacuation and personnel lines. Provide for reestablishment of pre-incident road closures and reestablish administratively desired roadway widths/conditions to pre-disturbance widths/conditions.
8. **Cleanup** – Remove suppression related equipment, (debris, trash, signing, flagging) at facilities used by suppression personnel.
9. **Facilities** – Restore access roads, camps, equipment staging areas, helibases, helispots, retardant plants, and other sites to original pre-suppression condition.
10. **Wilderness Study Area and Backcountry Conservation Area** – Ensure actions taken during suppression repair help to retain the suitability for preservation of wilderness and do not impede wildlife dependent recreation.
11. **Cost Containment** – Ensure that treatments are feasible and costs are considered while developing and implementing fire suppression repair treatments.

Guidelines

Repair sites will be categorized by geographic area. The following guidelines will be followed during all repair activities:

1. Agency REAF(s) will be available during implementation of suppression repair.

2. Assessments will be ongoing. Additional sites will be mapped and repaired if discovered.

3. Equipment will be cleaned of plant material that could potentially contain noxious weed seeds.

4. All materials used in repair efforts will be certified noxious weed free (straw, seed, etc.) Weed free certification will be provided by the Bureau of Land Management, Boise Seed Warehouse and the CDA Forest Service Nursery upon purchase or delivery of materials.

5. Implementation monitoring will occur concurrently with completion of repair work. Any adjustments to prescriptions will be recommended to the Line Officers at BLM and DNRC.

6. Excavators with a 6 way blade and hydraulic thumb will be the preferred equipment to accomplish repair of dozer lines, safety zones, drop points, and to pull berms and redistribute side cast fills and woody debris. A combination of dozers and/or excavators may be utilized on moderate slopes as appropriate.

7. To ensure safety of personnel performing suppression repair work, an onsite analysis of hazards will be discussed and addressed at the start of each day during repair implementation.

8. Where seeding is necessary use the seed mixes specified in this plan.

9. No repair work shall commence at cultural sites without consultation with the BLM REAF or other applicable agency representative.

10. Where operations were established on private land additional repair request beyond those cited in this plan (as identified by the land owner), will be agreed to in writing by the DNRC Anaconda Fire Unit and landowner prior to repair.

11. Resource Advisors will provide guidance to prioritize repair in coordination with operations and Agency Administrators at BLM and DNRC.

12. The Resource Advisors, in coordination with the IMT will develop a paper repair map that will illustrate suppression activities with completed repairs highlighted in green. The yellow highlights (completed, needs inspected) will be completed daily by task force leaders, heavy equipment bosses or divisions. Green highlights (completed, inspected) will be completed by Resource Advisors.

Standards and Specific Repair Techniques

Machine created lines

The intent is to restore compacted and/or displaced soils to a condition that will infiltrate precipitation ***without the need of water bars***. Objective is to pull back berms (logs, topsoil, slash) onto the fireline to blend with adjacent undisturbed ground and leave a roughened surface to promote infiltration, erosion control, and recovery of existing native plants. Use tree boles as waterbars and do not excavate or use dirt berms as permanent or final waterbars. In instances where trees and slash have been removed from machine lines, material may need to be hauled back in to meet repair objectives or additional trees adjacent to the line may need to be felled and utilized. Provide additional drainage with water bars ***only where sufficient slash cover is not***

adequate or available to control surface runoff. Water bars should follow standard specifications stated below.

Fuel Breaks:
Several miles of fuel break were constructed along the Windy Rock Jeep Trail, road to Gobblers Knob in the WSA, and a few other locations. Most of this is in DIVA and DIVC. Most if not all of the material generated during the construction of the fuel breaks was moved to the "green" side of the control line. This slash is a mix of merchantable trees, non-merchantable trees, limbs, stumps, and small trees, and is all jack strawed.

Consolidate slash in landings or burn piles. If there is a large quantity of merchantable trees and they are a reasonable distance to approved landing, process and transport them to the approved landing. If the trees are not merchantable (rotten), or a small quantity of them, or an unreasonable distance to an approved landing, pile to burn. Use keyholes as needed outside of the WSA to accomplish both the processing and transport as well as the burn pile locations (work with REAF Ryder on locations). Pull back berms and materials (e.g., logs, topsoil, and available slash) onto the fireline to blend with the surrounding topography. Leave a roughened surface to promote infiltration, erosion control, and recovery of existing native plants. Place existing dead and down limbs and tops onto line as available. Ensure available slash and trees are evenly distributed across the line and to appear natural.

- Spread slash 5 10 tons per acre.
- Block motorized access with available logs, rocks, and slash.
- Distribute slash and trees to appear natural.
- Remove trash, equipment, and flagging from the area.
- Apply native seed mix where appropriate.

Skid trails, slash piles and landings (from fuel break construction):

- Scarify and cover skid trails and landings with slash (5-10 tons/acre).
- Seed in areas where bare ground is exposed, and no slash is available.
- Camouflage skid trails with large woody debris or rocks to limit off road travel.
- If possible, move slash piles away from live trees and creek and away from log decks. If necessary, remove live trees away from slash piles.
- Burn slash piles in the winter and seed in areas with appropriate seed mix.

Dozer machine line:
Restore disturbed soils to a condition that will infiltrate precipitation without the need of water bars.

- Pull back berms and materials (e.g., logs, topsoil, and available slash) onto the fireline to blend with the surrounding topography. Leave a roughened surface to promote infiltration, erosion control, and recovery of existing native plants.
- Place existing dead and down limbs and tops onto line as available. Ensure available slash and trees are evenly distributed across the line and to appear natural. Spread slash 5-10 tons per acre.
- Provide additional drainage with water bars where sufficient slash cover is inadequate to control surface runoff. Water bars will follow standard specifications. Trees and other large material may be used as water bars.

- Block motorized access with available logs, rocks, and slash. Distribute slash and trees to appear natural.
- Remove trash, equipment, and flagging from the area.
- Apply native seed mix where needed.

Dozer pushes, drop points, staging areas, parking area:

- Pull in berms and level divots where machines have disturbed soils. Place existing dead and down limbs and tops onto areas as available (5-10 tons/acre).
- Where heavy vehicle traffic has compacted soils, scarify or deep rip (2" – 6") the area as appropriate to reduce compaction and establish a sufficient seedbed.
- Ensure road ditch is returned to its original shape and function as to allow for proper drainage.
- Block off motorized access using large tree boles (compacted into soil) and/or frequent, large boulders if available.
- Seed all disturbed sites with native seed mix according to specifications
- Remove trash, equipment, and flagging from the area.

Hand Lines:

The intent is to restore compacted and/or displaced soils to a condition that will infiltrate precipitation ***without the need of water bars***. Pull berms into hand line and restore line to blend with the adjacent topography. Berms, available soil material, and organic matter should be pulled back onto the hand line. Scatter limbs and tops to obliterate evidence of the line as much as available. Construct water bars only where needed.

- Reposition litter and organics, top soil, and large woody debris onto disturbed areas. Scatter additional unused material to eliminate berms and debris piles along the fireline. Restore line to blend with adjacent topography and eliminate evidence of the line as much as practical.
- Construct water bars (see specifications below).
- Block off motorized access. Where available, use boulders and/or large woody debris.
- Remove all trash, equipment, and flagging.

Pumping, Drafting and Dip Sites:

- Remove all litter, trash, and flagging from fire suppression
- Restore all water sources that were used to supply hose lays, tenders, and engines during the suppression efforts to their pre-fire condition.
- Restore natural contour.
- Remove any dams or other devices used to pool water. Replace any logs, slash, rocks or boulders that were used to improve site.
- Seed repaired and disturbed areas with seed mix (see specifications below).
- Remove hazardous material containment pads, if used, and dispose of properly.

Dozer Bladed Access Roads

- Remove berms. Damaged drainage features (i.e. culverts, waterbars, rolling dips, cross drains, belt tops, ditches, etc.) will be cleaned and/or reconstructed.
- Reconstruct original drainage features and clean ditches.
- Reestablish ephemeral drainage at crossings.

- Reestablish original road widths (standard road width 12 feet).
- Blade road surfaces for safety and restore road and ditch shape as necessary.

General Access Roads

- All road improvement operations will be in agreement and coordination between the Line Officer at the Anaconda Fire Unit. After suppression is completed, repair needs on access roads will be determined by REAFs.
- All litter, trash, equipment, signs and flagging will be removed.

Fire Camps:

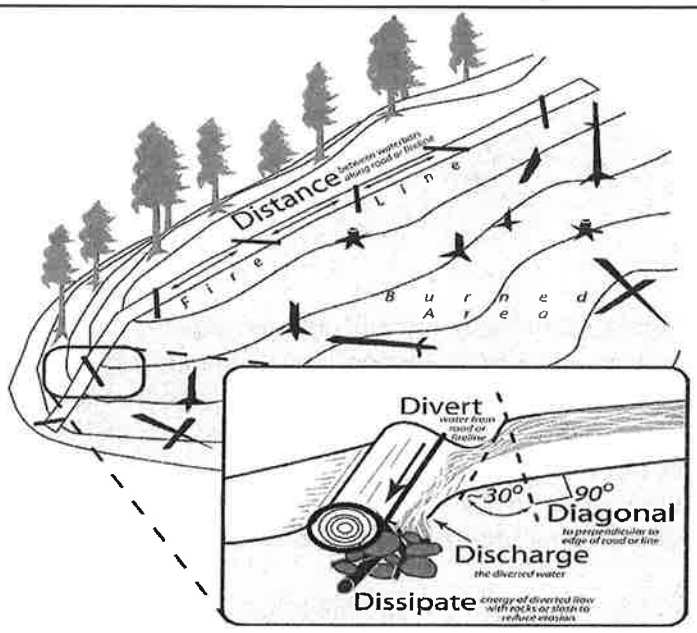
Complete site-specific suppression damaged repair with private landowner per the land use agreements.

Specifications for Fire Suppression Repair and Rehabilitation

Water Bars:

- Cut water bars diagonal to fire line at a downslope angle of approximately 30-45 degrees, decreasing angle as slope steepness increases.
- Locate water bars to take advantage of natural slope breaks where possible.
- Ensure that each water bar has a direct outlet (especially where berms are present) and drains into a vegetation or rock filter.
- Hand line water bars should be 8" deep and 12-18" high for the berm. If soil is loose, augment water bar with woody debris and/or rocks.

Waterbar Standards: The 5-D Fireline Waterbars



-Modify spacing to take best advantage of the terrain, rocks, roots, brush, and natural drainage. Avoid unstable terrain. Where feasible, waterbars should drain away from the burn and into brush or natural vegetation. No waterbars necessary on rolling grades that break slope at adequate frequency (similar to water bar spacing).

-These are broad standards subject to site-specific modification based on site-specific conditions. The goal is to minimize erosion; defer to what works best for each particular location.

Distance – Waterbars must break up the distance or length that the water can run unimpeded on the fireline. This will reduce the erosive power of local runoff.
Diagonal – Don't bully the flow, lead it. Waterbars built diagonally to the fireline lead the water off. A simple rule is to add 5 to the slope and build a waterbar at that many degrees from perpendicular.
Divert – Waterbars must handle all of the flow for as long as it's needed.

Discharge – Water should be diverted to flow off the line. A good waterbar should have an open outlet.
Dissipate – Good waterbars should dissipate the flow just below the outlet to exhaust its eroding power and encourage infiltration.

Fire Line Slope Waterbar Spacing (feet)

Line Gradient %	Water Bar Spacing or where designated
10-20%	100
20-30%	75
30-40%	50
40-50%	25
>50%	20

Road Grade Waterbar Spacing (feet)

Road Gradient %	Water Bar Spacing or where designated
0-3.9%	500
4-5.9%	250
6-9.9%	150
>10%	100

Seed Mix and Application:

Native seed mix is to be used for sites lacking sufficient replaced duff and organic matter, including some gated/closed roadways, dozer lines, safety zones, large fire-suppression-related disturbances, and other areas as specified in the Repair Map and tracking spreadsheet.

- Acquire seed from a reputable seed company. Land Managers can assist with finding appropriate seed from reputable native seed suppliers.
- In all cases, seed purchased will be certified free from weeds listed on the current "all States Noxious Weeds list". Species and/or Variety substitutions require Land Manager approval.
- Apply seed immediately following completion of repair activities (i.e. replacement of organics and debris and road grading activities). The preferred timing for seeding is from mid-September to mid-April.
- Broadcast seed with hand-operated seed spreader or where possible with a machine-mounted broadcast seeder.
- Seeds should be no more than ¼ to ½ inch deep. Minimum seeding rate 40 seeds/sq. ft. When seeding on crusted soils, harsh sites or in competition with noxious weeds, higher seeding rates (80+ seeds/sq. ft.) are recommended.

General calculations for seeding:
Methods for applying seed:
Hand seeding using front-pack seeder: Local units usually have hand seeders for use. Seeders must be adjusted/calibrated based on #/acre seeding rates of the specific seed mix that is used. It is helpful to have one person seeding, and another following with the bag of seed for resupply.

Windy Rock Seed Mix

Seed Mix		
Species	**Cultivar**	**Planned Rate (PLS/ac)**
wheatgrass, bluebunch	Anatone or Goldar	8
Western Wheatgrass		0.67
bluegrass, big	*Sherman*	2.67
Fescue, Idaho		6
wheatgrass, slender	*Pryor*	8
TOTAL		25.33

Windy Rock Meadow Seed Mix

Seed Mix		
Species	**Cultivar**	**Planned Rate (PLS/ac)**
wheatgrass, bluebunch	Anatone or Goldar	6
Fescue, Idaho		6
Fescue, rough		6
Rosy pussytoes *(Antenarria rosea)*		2
TOTAL		20

Appendix A: Detailed Repair Objectives

Division Alpha:

Dozer Lines WSA: All dozer lines not on an old two track in the WSA need full repair as would be done on any normal dozer line. Remove berms, scarify dozer line (2"-6") , pull back slash and disperse windrows. Use approximately 10 tons per acre of woody debris in forested areas to mimic the area surrounding the dozer lines.

If dozer line occurs in open grassy areas, remove berms, scarify dozer line (2'-6") and pull back any organic material (rocks, duff and down woody debris) back onto dozer line. Seed dozer line if understory is mostly grass, do not seed heavily forested areas. After dozer lines are repaired, signs will be installed by the local unit that indicate the status as a repaired line not a road.

Fuel Breaks WSA: Scarify disturbed area in fuel breaks and skid trails as needed. Scatter slash and down woody debris back over area similar to area surrounding fuel breaks. In areas where bunched logs have not been skidded, lop and scatter the logs across fuel break. Signs will be installed by the local unit that indicate the status as a repaired line not a road.

Slash From Fuel Breaks

H6 to H3:

All slash and logs will be either piled to burn or processed and transported to DP40 to complete repair (see log utilization specs in IAP and Suppression Repair Plan, coordinate with REAF Ryder). Additional equipment may be needed and should be ordered. A finished product is required as we implement this action.

H3 to the intersection of Windy Rock Jeep Trail Rd #2865 and Gobbler's Knob road #2867 (DP42):

As approved on 9/7/25 by Albritton AA, cleanup slash/logs created by fuel break implementation and improve line an additional 25 feet, process and haul logs to DP 40 (see log utilization specs in IAP and Suppression Repair Plan, coordinate with REAF Ryder). In order to complete this action keyholes will need to be created and improved on the east/green side of the road and **outside of WSA.** Keyholes are defined as openings of variable size which are adequate to efficiently pile slash (to be burned in the winter) and process/store logs which will be transported to DP 40.

Intersection of Windy Rock Jeep Trail Rd #2865 and Gobbler's Knob road #2867 #2867 (DP42) to Gobbler's Knob (west):

Division Alpha is approved to cleanup slash/logs created by fuel break implementation. Process and transport logs to DP 40 (see log utilization specs in IAP and Suppression Repair Plan, coordinate with REAF Ryder). Existing landings and keyholes should be utilized to pile slash that is not being processed and transported to DP40 (to be burned in the winter) and process slash/store logs which will be forwarded to DP 40. Keyholes are defined as openings of variable size which are adequate to efficiently pile slash (to be burned in the winter) and process/store logs which will be transported to DP 40. Cutting of keyholes is authorized in the WSA to accomplish this task, and must be coordinated with BLM REAF.

Division Alpha is not approved 9/9/25 to complete additional 25 foot fuel break at this time. AA Albritton will reevaluate this request at a later date.

Gobbler's Knob West to Mannix:

At locations agreed to by Division Alpha and REAF Ryder all material generated by fuel break will be piled in several locations (to be burned in the winter). There is about ¼ mile of fuel break that extends into the WSA away from the existing control line. This was clipped with a feller buncher and the trees are in bundles still, when a better route was selected for the control line. There are probably 40 bundles of trees. These bundles need to be scattered.

Other Site-Specific Repairs in WSA

Gobbler's Knob and Gobbler's Knob Safety Zone WSA:

Dozer lines occur in open grassy areas, remove berms, scarify dozer line (2'-6") and pull back any organic material (rocks, duff and down woody debris) back onto dozer line. Seed dozer with the Windy Rock Meadow Seed Mix. After dozer lines are repaired, signs will be installed by the local unit that indicate the status as a repaired line not a road and to not disturb revegetated area.

Landings, Drop Points, Safety Zones, Helispots WSA: Pull in berms, level divets from heavy equipment and scarify area (2-6"). Incorporate slash into landing to help stabilize soil. Scatter any remaining slash onto landing. Signs will be installed by the local unit that indicate the status as a repaired area and to not disturb the revegetated area.

Dozer Bladed Two Track WSA: Remove berms, reconstruct original drainage features. Seed area with native seed mix. Signs will be installed by the local unit that indicate the status as a repaired line not a road.

Access Roads WSA

After suppression is completed, repair needs on access roads, at drop points, spike camps, and other camping spots will be determined by BLM REAFs.

Division Charlie:

H6 Hansen Park

This area is approximately 3 acres and is in a sagebrush park. Remove berms, and level divets from heavy equipment and scarify area (2-6"). Incorporate some down woody debris and slash to stabilize soil and prevent soil erosion and runoff. Seed area with native seed mix. Block area with rocks or logs to prevent public from driving on area. Signs will be installed by the local unit that indicate the status as a repaired area and to not disturb the revegetated area.

Drop Point 40:

This area is approximately 3 acres and is in an old clearcut. Remove berms, and level divets from heavy equipment and scarify area (2-6"). Incorporate some down woody debris and slash to stabilize soil and prevent soil erosion and runoff. Seed area with native seed mix. Block area with

rocks or logs to prevent public from driving on area. Signs will be installed by the local unit that indicate the status as a repaired area and to not disturb the revegetated area

Division Kilo: Drop Point 21

This area is approximately 3 acres and is in a sagebrush park. Remove berms, and level divets from heavy equipment and scarify area (2-6"). Incorporate some down woody debris and slash to stabilize soil and prevent soil erosion and runoff. Seed area with native seed mix. Block area with rocks or logs to prevent public from driving on area. Signs will be installed by the local unit that indicate the status as a repaired area and to not disturb the revegetated area.

Stream Crossing Repairs

Division Charlie: Gallagher Creek

Remove logs and slash from stream, stabilize and restores banks to original state. Divert water upslope from stream with waterbars when repairing machine and handlines. Disperse logs and slash away from stream. A fish biologist from the BLM Missoula Field Office will need to be present for suppression repair activities.

Division Golf: Warm Springs Creek

Remove logs and slash from stream, stabilize and restores banks to original state. Divert water upslope from stream with waterbars when repairing machine and handlines. Disperse logs and slash away from stream. A fish biologist from the BLM Missoula Field Office will need to be present for suppression repair activities.

Appendix B: Photos

Typical Fuel Break in WSA

Dozer line and Landing in WSA

WSA Windrow and Fuel Break

Gobbler's Knob Safety Zone