

APPENDIX_____

FIRE SUPPRESSION REPAIR PLAN TEMPLATE

Montana Department of Natural Resources and Conservation

This template is designed to give a general outline of what is required to be prepared for a visiting IMT and/or documentation purposes of local repair efforts. Use what is necessary within this template to prepare your fire suppression repair plan.

PREPARED BY:

(Name)
(Agency)

Date
(Title)

Fire Suppression Repair Team Members Contributing to this plan include: (if more than one)

APPROVED BY:

(Incident Commander)

Date

(Name)
(Unit Manager/Area Manager)

Date

GOALS:

This fire suppression repair plan is designed to guide the planning and implementation of repair measures on the _____ fire, which burned on lands managed by the Montana Department of Natural Resources and Conservation, and private lands including commercial timber lands managed by _____, and timber/ranch lands managed by approximately _____ small private owners.

The **intent of this fire suppression repair plan** is to mitigate or eliminate resource or other damage occurring as a result of fire suppression activities not to complete all long-term land rehabilitation/restoration needs.

Implementation of this plan will be in compliance with management direction and standards and guidelines contained in the Montana DNRC Wildland Fire Suppression 900 Manual.

RESPONSIBILITIES:

This plan provides consistent fire suppression repair standards in order to provide seamless implementation of repair activities, reduce repair costs, and protect common resource values impacted by suppression activities. Implementation of this plan will be conducted by the Incident Management Team under the authority of resource advisors and/or the agency administrator.

Repair activities on Montana DNRC Lands, county access lands/roads and other private lands will be conducted by the IMT under the authority of the Montana Department of Natural Resources and Conservation. Activities conducted on private ownerships will be coordinated by the Montana DNRC with each private property owner.

Repair of the Incident Base Camp or other sites on private lands used as staging areas and drop points will follow repair standards outlined in this plan or as displayed within individual rental agreements.

OBJECTIVES:

The following objectives will be met for all rehabilitation work completed on the _____ 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 vegetation to prevent accelerated soil erosion.

3. **Water Quality and Watershed Values** – Minimize sediment delivery into streams and/or drainages to maintain water quality.
4. **Cultural Resources** – Protect any cultural resource sites that were impacted and repair areas where fire suppression activities destabilized slopes near sites.
5. **Travel Management** – Restrict unintended/undesired motorized vehicle access that may have been created by the construction of dozer lines. Provide for reestablishment of pre-incident road closures and reestablish administratively desired roadway widths/conditions to pre-disturbance widths/conditions.
6. **Cleanup** – Remove suppression related equipment, (debris, trash, signing, flagging) at facilities used by suppression personnel.
7. **Facilities** – Restore access roads, camps, equipment staging areas, helibases, helispots, retardant plants, and other sites to original pre-fire condition.
8. **Resource Recovery** – Stage (deck) commercial materials generated during fireline construction for salvage by respective land owners.
9. **Private Land Values** – Provide consistent fire suppression repair treatments that are responsive to various land owner needs.
10. **Cost Containment** – Ensure that treatments are feasible and costs are considered while developing and implementing fire suppression repair treatments.

GUIDELINES:

Specific sites in need of repair will be categorized by geographic area and identified by geographic area and/or Branch or Division where applicable. A **Repair Operations Guide** may be developed and coordinated with the Incident Management Team (IMT) to ensure timely repair. The Resource Advisor or designee will provide the IMT with recommended amendments to this plan for Incident Action Plan preparation. The following general guidelines will be followed during all repair activities:

1. Agency Resource Advisor(s) will be available to work with fireline personnel during implementation of suppression repair.
2. Assessments will be ongoing, based on operations and events as they occur within the _____ fire perimeter. Additional sites that are discovered in the field should be subsequently mapped and repaired.
3. Motorized equipment used for repair will be thoroughly cleaned of any plant materials that could potentially contain noxious weed seeds prior to entering planned repair work areas. In addition, all vehicles involved in the fire incident will be re-cleaned prior to demobilization from the incident to reduce the risk of transporting noxious weed seed to other areas. Vehicle washing logs will be completed to document compliance if so requested.

4. All materials used in repair efforts will be certified noxious weed free (straw, seed, etc.) Weed free certification will be provided to the Incident Management Team upon purchase or transport of materials.
5. Implementation monitoring will occur concurrently with completion of repair work. Any adjustments to prescriptions based on monitoring will be recommended to the Operations Section for inclusion or modification of Incident Action Plans.
6. To ensure safety of personnel performing suppression repair work, an onsite analysis of the hazards will be discussed and addressed each day before work is begun.
7. Where operations were established on private land, additional repair requests beyond those cited in this plan (as identified by the landowner) will be agreed to in writing by the Incident Management Team with concurrence by the Resource Advisor/Agency Administrator prior to completion.
8. No repair work shall commence at identified cultural sites without consultation with the Resource Advisor or other applicable agency representative.

STANDARDS:

Salvage of Merchantable Timber:

When applicable, salvage merchantable timber from firelines prior to rehabilitation.

- Skid logs to designated locations along established roads.
- Use intersections and switchbacks where feasible to reduce need for developing new landings.
- If needed and possible sort by ownership.

Dozer Lines, Staging Areas, Safety Zones, Helispots:

After salvage of merchantable timber

- Evenly reposition litter and organics, top soil, and large woody debris onto disturbed areas. Scarify compacted areas to a depth of 18 inches. Scatter additional unused material to eliminate berms and debris piles. Where cut and fill has occurred (benched fireline) re-contour fireline to natural slope gradient prior to placement of litter, organics, and woody debris. Eliminate evidence of the line as much as practical.
- Construct water bars (see specifications below). Applicable to firelines and restricted/closed roads.
- Seed disturbed areas with Seed Mix (See specifications below).
- Restore stream crossings (see specifications below).

- Block off motorized access. Where available, use boulders and large woody debris.
- Remove all trash, equipment, and flagging.

Hand Lines:

- 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. Eliminate evidence of the line as much as practical.
- Construct water bars (see specifications below).
- Block off motorized access. Where available, use boulders and large woody debris.
- Remove all trash, equipment, and flagging.

Pumping and Drafting Sites:

- 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.
- Seed disturbed areas with Seed Mix (see specifications below)
- Remove any dams or other devices used to pool water and all litter, trash, and flagging.
- Remove hazardous material containment pads, if used, and dispose of properly.

Open Roads used as Firelines or Contingency Lines:

- Remove vegetation debris (cut limbs and brush) from road cuts and ditches and culvert catch basins and scatter on road fills outside of the travel way. Where excessive amounts of materials prevent scattering, pile or windrow material along the road fill outside of the travel way.
- Restore all existing drainage features, i.e. culverts, rolling dips, cross-drains, belted drains, and ditches damaged during fireline construction.
- Remove debris from culverts that have been blocked or made ineffective due to suppression efforts.
- Grade road surface to reestablish original road widths and ensure a smooth driving surface free of rocks and obstructions.
- Clean ditches and culvert lead-ins during grading activities to remove debris and allow for free flow.
- If dry conditions exist, water roads as necessary during grading activities to ensure missing road surfacing materials and to eliminate generation of additional surface fines.
- Seed road surfaces and cut/fill slopes with Seed Mix (see specifications below). Fertilize (see specifications below).

Restricted (gated or bermed) Roads used as Firelines or Contingency Lines:

- Remove vegetation debris (cut limbs and brush) from road cut5s and ditches and culvert catch basins and scatter on road fills outside of the travel way. Where excessive amounts of materials prevent scattering, pile or windrow material along the road fill outside of the travel way

- Restore all existing drainage features, i.e. culverts, rolling dips, cross-drains, belted drains, and ditches damaged during fireline construction.
- Where surface drainage is not evident, construct drivable water bars generally every 500 feet. At stream crossings, water bars shall be constructed on each side of the crossing to prevent surface flow into the stream crossing. Near streams, water bars shall drain into a buffer area and not directly into the stream channel.
- Grade road surface to reestablish original road widths and ensure a smooth driving surface free of rocks and obstructions.
- If dry conditions exist, water roads as necessary during grading activities to ensure missing of road surfacing materials and to eliminate generation of additional surface fines.
- Clean ditches and culvert lead-ins during grading activities to remove debris and allow for free flow.
- Remove debris from culverts that have been blocked or made ineffective due to suppression efforts.
- Restore road restriction devices (gates, berms, barriers) removed or damaged to provide access for fire suppression activities. Replace locks, lock-Ts, signs and other damaged items.
- Seed road surfaces and cut/fill slopes with Seed Mix (see specifications below). Fertilize (see specifications below).

General Access Roads:

- Grade road surface to remove ruts, rills, and washboards. Light or Spot Grading may be performed where road surface imperfections are not evident.
- Grade ditches only where fire vehicle traffic has damaged ditch profile or deposited debris within the ditch.
- If dry conditions exist, water roads as necessary during grading activities to ensure mixing of road surfacing materials and to eliminate generation of additional surface fines.
- All litter, trash, equipment, signs and flagging will be removed.

Fire Camps/Spike Camps/Helibases/Retardant Plants:

- Areas where excessive retardant was spilled will be mitigated by removing as much of the retardant as practical and farming or diluting the remainder into the soil. Specific actions will be developed jointly with Landowners or their representatives.
- Wood chips should be raked to remove the majority of litter and the remainder raked evenly across the area (if chips were used).
- Seed and fertilize all disturbed areas with Seed Mix (see specifications below).
- Repair and fence and replace any gate that was cut or moved to access suppression activities.
- All litter, trash, equipment, signs and flagging will be removed.

- Restore natural topography where power and telephone lines were trenched.
- Refer to rental agreements with specific landowners for other requirements.

Vehicle (Weed) Washing Station (if applicable):

- Collect and dispose of all organics, debris, and washing waste in approved landfill.
- Grade road surface to remove ruts and surface imperfections.
- All litter, trash, equipment, and signs will be removed.
- Monitor annually for 2 years. Apply herbicides annually, or as necessary to remove weed germinates.

SPECIFICATIONS:

Water Bars:

- Cut water bars diagonal to fire line.
- Ensure that each water bar has a direct outlet and drains into a vegetation or rock filter.
- Utilize Excavators (preferred over dozers if possible) for repair of dozer lines and along roadways that have been cleared for firelines. Dozers may only be used to perform final construction of water bars on dozer lines. Excavators should be used to pull berms and redistribute side cast fills and woody debris (eastside open prairie utilization of Road Graders may be preferred). Dozers may also be utilized on larger safety zones, especially those near roads.
- Water bars for dozer lines should be 12” deep and 18-24” high for the berm. If soil is loose, augment water bar with woody debris and/or rocks if available.
- 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.

Fire Line Slope	Suggested Spacing (feet)
10-20%	100
20-30%	75
30-40%	50
40-50%	25
50%+	20

Seeding:

Seed Certification (if applicable)

- Certified, blue-tagged seed shall be used where a name variety or cultivar is specified. Blue tags, that are removed to mix or spread the seed will be saved and provided to the host agencies Resource Advisor.
- All seed purchased will be certified free of seeds from weeds listed on the current “All States Noxious Weeds List”.

- The origin of wildland native seeds is verified by a certification of the “Source Identified Class” with an attached yellow tag.
- When using commercially purchased seed check with the supplier for the seed source point of origin. Point of origin should be as close to the re-vegetation project as possible. Seeding elevations should be within 1000 feet below or 500 feet above the seed origin elevation. Seed origin should be within a 500 mile radius of the re-vegetation site.

Seed Mix and Application:

- Apply seed following completion of repair activities (i.e. replacement of organics and debris and road grading activities).
- Do not mix seed and fertilizer in spreaders. Apply seed and fertilizer separately to prevent scarification of the seed hull by abrasive fertilizer.

Seed Mix: Montana State DNRC

Apply to all firelines, safety zones, and repair areas.	
Species	Pounds PLS per Acre
(example): Annual Ryegrass (I) Lolium Multiforum	(example): 14
(example): Slender Wheatgrass (N) Elymus trachycaulus (Revenue)	(example): 6
	Total

Fertilizer Application:

- Apply _____ dry fertilizer at rate of _____ lbs/acre
- Apply fertilizer only to roads used for firelines. Do not apply to dozer or hand constructed firelines. Do not apply to general access roads.

Stream Crossings:

- Remove all litter, top soil, and small woody debris (brush and branches) positioned within the stream during line construction.
- Re-contour disturbed soils to blend with the natural stream banks above and below the crossing. Place large woody debris (>10 inches diameter as available) within the floodplain or along stream banks so as to not fully obstruct stream flows. **Note:** large wood may enter the stream channel as long as it is fully secured (partially or fully buried) within the floodplain beyond the stream channel so as to prevent movement during high flows.
- Construct water bars above both sides of the crossing where runoff can be diverted onto non-erodible materials and dissipated before it reaches the channel.
- Minimize additional damage to riparian vegetation and disturbance to soils.

- Install slash filter windrows at base of slopes parallel to stream channel. Windrows should be placed at least 10 feet from stream edge as to not infringe upon natural stream flow and floodplain function.