

Cottonwood Fire

Suppression Repair Plan

Fishlake National Forest
Color Country District BLM
Utah Division of Forestry, Fire, and State Lands
P4SRU0 (0408)



Approved by:

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[Steve Shaw \(Jul 17, 2026 20:26:31 MDT\)](#)

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Cottonwood Fire Suppression Repair Plan

Introduction

The Cottonwood Fire started on June 22, 2026, and burned approximately 97,400 acres of private, Bureau of Land Management (BLM), Utah Division of Wildlife (UDWR), Beaver City, State Institutional Trust Lands (SITLA) and Forest Service (USFS) land east of the town of Beaver, Utah.

Objective

To repair impacts caused by fire suppression activities to mitigate potential adverse impacts from fire suppression activities on the Cottonwood Fire in accordance with current agency approved fire suppression repair direction.

Goals

- Mitigate erosion and erosion potential associated with control line structures
- Mitigate the potential for unauthorized off trail system motorized travel
- Repair suppression related damages to improvements and infrastructure associated with livestock management and recreation.
- Minimize the potential for the spread of noxious and invasive weeds along all areas disturbed during suppression activities.
- Restore staging areas, spike camps, helibase(s), safety zones and dip-sites to pre-use conditions.
- Return roads and trails used during suppression to, as close as possible, pre-fire conditions.
- Maintain integrity of Inventoried Roadless Areas.
- Minimize impacts to cultural and historic resources.
- Slash created during fireline construction should be dispersed, chipped, or piled.
- Minimize hazards along travel corridors to facilitate suppression repair activities.
- Minimize sediment delivery into streams and drainages to maintain water quality.
- Minimize the spread of Aquatic Invasive Species (AIS).

Land Ownership

The Cottonwood Fire includes private, BLM, USFS, SITLA, Beaver City and UDWR lands. Repair standards outlined in this plan will be applied consistently across all land ownership. See Appendix A for affected acres by jurisdiction and estimated control lines on the Cottonwood Fire event (Appendix A). Private landowners will be contacted by UDWR representatives and have the option of opting out of repair except for repair measures taken to ensure safe travel along public roads.

Implementation and Timing

This document may be updated and amended throughout the life of the incident. The suppression repair plan shall be implemented until the above-mentioned goals are met. Due to the timing of this fire, the P-Code will need to be held open into the future. These repair actions will be identified during the repair process and reviewed by the Agency Administrators. The current incident commander will review

the plan upon transfer of command and provide any comments or concerns back to the agency administrators.

General Repair Standards and Guidelines

- Operating Conditions: After or during periods of rainfall, monitor roads, trails, other repair sites and access routes for muddy conditions that contribute to surface damage such as rutting, or caking of mud on tires, equipment, boots, etc. Work with resource advisors to stop repair operations when these conditions occur; and to determine when conditions are dry enough to resume operations.
- Field Maps: All suppression features and damages will be accurately mapped and described in field maps.
 - Refer to the “Repairs Needed” and “Repair Comments” fields in Field Maps for site-specific prescriptions (i.e. methods of repair needed, equipment/materials needed, etc.).
- Damaged range improvements including but not limited to fences, pipelines, troughs, cattleguards, gates, and recreation features including but not limited to fences, signs, trailheads, barriers will be mapped and described in field maps. These features will then be repaired.
- Chip, masticate, scatter and/or disperse concentrations of activity fuels created during suppression efforts or pile as determined by resource advisors and operations. Avoid cutting or damaging any green *non-hazardous trees* anywhere within the fire area unless the tree has been specifically marked for felling.
- Water Resources
 - All drainages (intermittent and perennial), meadows, and springs – remove all soil, slash, and other debris that has been pushed into these areas. Streams should match natural upstream and downstream conditions. Conduct repair of perennial streams (where wetland vegetation exists) under supervision of resource advisors.
 - Drain all water storage such as pumpkins, fold-a-tanks, etc. with a hose to reduce erosion. Do not drain directly into natural water sources to avoid the introduction of Aquatic Invasive Species.
 - All water drafting sites (streams and lakes) – return area to pre-fire condition.
- Removal of material from the Incident
 - Remove and properly dispose of all garbage, litter, flagging, signs, and other materials from the incident unless otherwise directed by resource advisors. Leave in place any flagging marking hazards, resource concerns, etc.
 - Flagging, transportation route signs and other fire signage will be removed on an ongoing basis. Complete removal will occur upon completion of mop-up activities.

- All firefighting equipment not necessary for future mop-up and patrol will be removed from the fire area. Any equipment to be left on the line will be documented in the transition plan.

Handlines

Where practical, trenched or constructed handlines will be pulled back to the natural contour of the slope to prevent erosion. Handlines will be water-barred and may be seeded. Coordinate with archaeologist prior to line repair to ensure no special tactics or considerations are needed.

- Construct water bars on all lines where surface erosion is a concern. Space water bars based on gradient following Suppression Plan guidelines (Appendix B). Spacing of water bars on highly erodible soils may be closer than guidelines recommend.
 - Water bars should be constructed to direct water away from the fire line and should be at least 6" in height.
 - Use rocks or logs to secure or act as water bars when and where possible.
 - The outlet end of the water bar needs to be open and of adequate length to allow free flow of water from the line and to prevent runoff from re-entering the line below.
- Sod, berm, topsoil, and slash resulting from line construction should be pulled back onto the fire line. Slash is the most effective for erosion control when it is in contact with the ground surface.
- Handlines may be seeded where erosion may occur and where seed establishment will be successful using approved seed mix (Appendix C).

Dozer and Grader Lines

- Dozer and Grader lines will be treated by one or more of the following repair methods; leveling, water barring, rolling dip implementation, seeding, pulling material back onto line if no longer needed for suppression, and possibly ripping or excavation where unauthorized access may be an issue. Coordinate with archaeologist prior to dozer or grader line repair to ensure no special tactics or considerations are needed prior to initiating repair.
- Level berms and restore surface as close as possible to original grade and contour.
 - Back blade or flatten out berms to restore original contour and eliminate channeling effect.
- Construct water bars on all lines where surface erosion is a concern.
 - Space water bars based on gradient following Suppression Plan guidelines (Appendix B).
 - The outlet end of the water bar needs to be open and of adequate length to allow free flow of water from the line and to prevent runoff from re-entering the line below.
- In areas where both sides of the line are black, or where the downslope side is black and water bars cannot be placed to direct water into rocks or areas with live vegetation, work with resource advisors to employ alternatives:



- Chunking: Roughen dozer line surface using an excavator to lift and drop soil so that it creates pockets which hold and redirect soil. Avoid turning soil over to retain nutrients on soil's surface.
- Recontour: In areas that are too rocky to chunk or have low slopes (in a valley or meadow), remove burns, flattening surface to avoid concentrating flow.
- Construct water bars and/or rolling dips to prevent erosion using guidelines outlined in Appendix B.
- Pull material back onto lines not needed for access.
 - Trees and brush removed during establishment should be pulled back and distributed across the dozer line to slow overland flow and provide soil cover.
- Restrict motorized access where lines intersect roads and trails.
 - Construct barriers or use available down material (i.e. rock, vertical pipe, logs, etc.) to prevent inappropriate vehicle access where dozer lines intersect roads and motorized trails.
 - In open areas where barrier would not be effective, dozer line not needed for access may be ripped, chunked or chained to prevent use by off-road vehicles following a review of the line proposed for ripping or chaining by an archaeologist to ensure no undue damage to sensitive cultural areas occurs.
- Ensure all dozer lines are re-seeded. Seed application will be the responsibility of local units.
- Lines or sections of line where the loss of soil to erosion is likely or there is a high probability of invasion by cheatgrass and annual forbs should be seeded using the appropriate seed mix for the elevation being repaired (Appendix C).

Spike camps, Helispots and Drop Points

- All trash and debris will be removed from the site.
- Backhaul all unused supplies.
- Return site to original contour.
- All trees that were cut during construction and remaining slash should be chipped or pulled back into the site to return conditions to a natural appearance.
- In areas with excessive soil disturbance reseed if determined necessary by resource advisor.

Fences and Irrigation Infrastructure

- Repair fences and gates directly damaged during suppression activities.
- Repair damage to irrigation ditches or pipelines caused by suppression activities.
- Use a drag to roughen and loosen soil in areas (i.e. parking areas, overland travel routes etc.) where compaction is severe enough to inhibit recovery of vegetation.

Roads

- Restore the surface condition of roads damaged by fire suppression activities to as close to original conditions as practical.
 - Grade roads impacted by fire traffic after monsoonal rains. An S number may be required to wait for and take advantage of rain as they come available.
 - Assess need for magnesium chloride application on major routes (i.e. 153, 137, etc.)
 - Road surfacing materials (gravel/asphalt)- Level III roads have gravel surfacing on them; lost gravel should be replaced.
- Cut trees as close to the ground as practicable (not to exceed 12 inches stump height).
- **Operational team members and resource advisors will work collectively to determine the exact specifications, and which trees and hazards pose an immediate risk to firefighters and public safety along roadsides.**
 - Use mechanical or hand fallers to mitigate any trees that are more than 35 ft from a road but are determined to pose a safety risk to firefighters or the public.
 - Do not fell live and healthy trees or Ponderosa pine where the top 1/3 of the tree remains unburned, unless such trees are deemed hazardous to travel.
- No trees removed shall be placed in driveways, roadside ditches, culverts, irrigation canals, or in any position where debris may degrade existing infrastructure. Avoid placing cut materials on hot areas. A UDWR READ will advise on repair activities on private, county, and state lands in coordination with State Agency Administrators. In addition to the above, tree placement specifications will differ based on ownership as follows:
 - Private, County, and State Ownership: Fall trees to mimic natural conditions.
 - Public Ownership (USFS and BLM): Trees may be scattered or bunched provided skidding is minimized.
- If mastication is deemed appropriate by operations and resource advisors, target trees less than six (6) inches in diameter within the reach of the masticator, where practicable.
- Forest engineer Steve Rodriguez ((435) 558-0216) will be available to assist with road issues and specifications.
- Chip and scatter all windrowed material along designated roads, avoiding drainages, culverts, water conveyance features, etc. (Table 1). Keep chip depth to 5 inches or less whenever possible.
- Re-install or replace road drainage control structures such as culverts, ditches, water bars and rolling dips (Appendix B.) damaged by fire suppression activities.
- Close all unauthorized routes created or opened during fire suppression activities.
- Return authorized routes to the standard they were prior to suppression activities with guidance from resource advisors. Reinstall or replace physical barriers damaged by fire suppression

activities according to repair points mapped on Field Maps. (Refer to the Dozer and Grader Lines section).

Forest Vault Toilets

- Pump toilets utilized by firefighting personnel during the incident to include toilets at Little Reservoir, Lower Anderson, LeBaron, Big Flat Guard Station, Jimmy Reed and any others that have been used during the incident. These will be identified in Field Maps as repair points. Toilets used by fire personnel must be pumped prior to the winter of 2026, before recreation increases for the winter season.

Aquatic Invasive Species

- Waterbodies have been identified as positive for whirling disease and include the Beaver River, Little Reservoir, the Sevier River, Piute Reservoir, and Minersville Reservoir. If engines, tenders, and aircraft utilize these waterbodies, decontamination protocols will be conducted to prevent the spread of AIS. This includes draining and drying tanks or disinfecting tanks and equipment.

Weeds

- See appendix D.

Historic Structures

- Remove any wrap from structures and remove all staples, tape, and debris.

Range Improvements and Irrigation Infrastructure

- Fences cut or damaged from suppression activities will be repaired including repairing/replacing wire, posts, t-post clips, tie wire, gates, etc. Fences will be repaired to standard/specifications approved by Forest Range Program personnel.
- Cattle guards damaged by heavy equipment or vehicles (such as a dozer or excavator tracking over a cattle guard) would be identified and replaced. Additionally, cattle guards that have been identified as being impacted by increased sediment from fire vehicle traffic will be cleaned out to appropriate working condition to prevent livestock from crossing.
- Pipelines, troughs, gates and any other range infrastructure damaged by suppression activities will be repaired.
- Repair damage to irrigation ditches or pipelines caused by suppression activities.

Recreation

- Any trailheads, barriers, signs, and associated recreation infrastructure damaged from suppression will be repaired/replaced to the standard/specifications approved by the District Recreation Program specialist.

Table 1. Hazard Tree and Brush Removal

Feller-buncher/harvester removal/chipping/mastication

The priority and timing of actions for all roads will be determined by resource advisors in coordination with operations and agency administrators.

153 Beaver River Road (Hwy 153)

137 Kent's Lake Road

123 Big John Flat Road (from HWY 153 to Big John's Flat)

131 City Creek

126 Cottonwood

580 Buck Ridge

991 Cork Ridge

122 Baker Canyon

985 Pink Rock Quarry (Baker)

988 Monkey Fence

South Creek Road (PST 68)

140 Big Twist

Appendix A: Affected Acres and Length of Suppression Lines on Cottonwood Fire

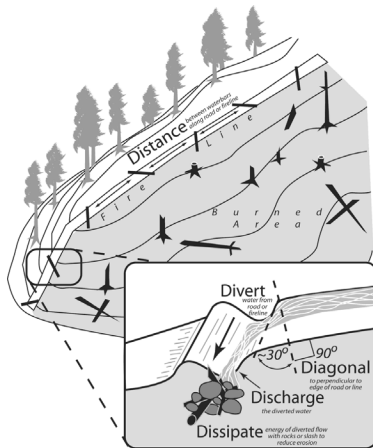
Affected Acres by Jurisdiction

Jurisdiction	Acres	Percent
BLM	15.2	0.0%
Private	4,319.3	4.4%
State	1,153.7	1.2%
USFS	91,641.8	94.3%

Estimated Lines used for suppression of the Cottonwood Fire needing repair (as of 7/17/2026)

Line Type	Miles
Dozer Line	40.2
Road & Mixed Construction Line	72.1
Repair Line	64
Hand Line	37.3
Grand Total	213.6

Appendix B: Water Bar and Rolling Dip Guidelines Water-bar Guidelines



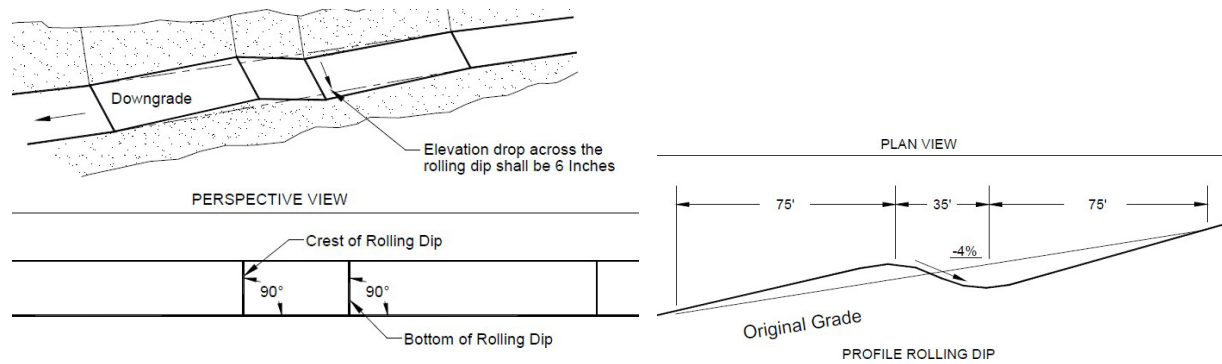
Locate water bars at natural slope breaks. The objective is to move water off the fireline before it can build up enough energy to erode soil. These spacing distances should be used as a guide. Some steep slopes (>45%) may need closer intervals to adequately control runoff.

Fire Line Slope %	Maximum Water Bar Spacing (feet)
2-5	300
6-10	200
11-15	150
16-20	100
21-35	75
36+	50

- Cut in the water bar – do not simply push up loose soil.
- Angle water bars downslope at 20 to 45 degrees across the line.
- Direct runoff clear off the line onto an erosion resistant surface, away from the burned area where possible.
- Do not discharge water from the outlet directly into a stream.
- The height of water bar for handlines should average 6-12 inches.
- The height of water bar for dozer lines should be 18 inches or less on slopes under 40% and 30 inches or less on slopes greater than 40%.
- Logs can be embedded or anchored into water bars, if they don't provide fuel continuity from the burn area onto the line.

Rolling Dip Construction

Incorporate rolling dips into road surface when surface crowning, in-sloping, and out-sloping are inadequate for efficiently removing water from the road surface. When in-sloping is used, cross drains shall be installed to discharge runoff before runoff can significantly accumulate. Rolling dips should not be used when road gradients exceed 10 percent.



Appendix C. Seed mix for Dozer Lines

Lower elevation dozer lines (BLM/State/Private)

	lbs./Acre
Triticale	5
Thickspike wheatgrass	3
Pubescent wheatgrass	3
Crested wheatgrass-Hycrest or Hycrest II	3
Intermediate wheatgrass	2
Indian ricegrass - VNS	2
Forage kochia-Immigrant	1
Alfalfa-Ladak	1
Total	20

Upper elevation dozer lines (USFS/SITLA/Private)

	lbs./Acre.
Triticale	5
Mountain brome	3
Thickspike wheatgrass	3
Slender wheatgrass	3
Orchardgrass, Paiute	2
Big Bluegrass, Sherman	2
Small burnet, Delar	1
Alfalfa, Ladak	1
Total	20

Appendix D: Seeding and Noxious Weeds

Seeding and Revegetation – Instructions

All soils that were disturbed or made bare by fire suppression and where vegetation was killed will be reseeded. Such areas include dozer lines, expansion of system or non-system roads/trails via dozers, safety zones, parking areas, and anywhere dozer pushes have occurred. If soil is compacted, scarify the soil surface with an excavator to rough up and scarify the soil prior to seeding.

High Elevation Seed Mix: See Appendix C above for the lower and upper elevation seed mix. This seed mix will be used at all high elevation areas where dozer lines, safety zones, parking areas and other areas where vegetation was killed.

Weed Treatment - Instructions

Monitor and treat priority areas where suppression activities have occurred for up to three years following fire suppression activities. This is critical as suppression activities are reasonably expected to cause new infestations of noxious weed species within the incident area as well as already spreading weeds within this area. See Table 4 for areas to be seeded included acres and projected costs.

Table 4.0 Areas Proposed for Noxious Weed Treatment and Estimated Costs

Activity	Length (miles)	Length (ft)	Width (ft)	Area (ft2)	Acres	Cost/Acre	Approximate cost
Dozer Line	40.2	212,256	25	5,306,400	121.8	\$45	\$5,482
Hand Line	37.3	196,944	5	984,720	22.6	\$150	\$3,391
Road Miles Needing Inventory and Treatment	136	718,080	25	17,952,000	412.1	\$20	\$8,242