FIRE SUPPRESSION REPAIR PLAN (REVISED)

Mosquito Fire

CA-TNF-001371

September 25, 2022

**Revised October 8, 2022*

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1.0 – Introduction

This plan outlines general guidelines for the repair of fire suppression damage for both State and Federal Direct Protection Areas and the National Forest System Lands of the Tahoe & Eldorado National Forests effected by suppression actions for the Mosquito Fire. These guidelines are intended to provide a framework for repair work. The plan recognizes that these guidelines do not cover all situations and that site-specific conditions will require good judgement in those instances where these guidelines are insufficient.

Implementation of this fire suppression repair plan will follow all pertinent rules and regulations regarding fire suppression activities, and for the Tahoe and Eldorado National Forests comply with management direction, standards and guidelines in their respective Land and Resource Management Plans. Damage to State, County and private lands and improvements caused by wildland fire suppression activities will be repaired only to the minimum extent needed to immediately correct the damage and to prevent further loss or injury. Additional repairs desired by any landowner are the responsibility of the landowner or must follow the compensation claim process.

The Mosquito Fire was detected on September 6, 2022. A combination of dozer line, handlines, and roads have been used for suppression lines.

1.1 - Goal

Protect land and resource values of the public and private lands where suppression activities have occurred.

1.2 - Objectives

The objective of the fire suppression repair plan is to repair areas with suppression damage to their pre-suppression condition and function to mitigate effects to natural and cultural resources and reduce the risk of excessive erosion and sedimentation on the landscape. Repair of suppression activity damage (e.g., spreading of dozer berms, installation of water bars, minor road repairs, etc.) will normally be done by the agency with direct protection responsibility for the fire as an integral part of overhaul/mop-up. Protecting and Jurisdictional Agencies may develop written suppression repair plans. Suppression repair work should occur with oversight from Resource Advisors and Suppression Repair Specialists.

This is to be done in a manner which promotes public and firefighter safety. Specifically, this plan aims to:

- Reduce the potential for soil erosion and sedimentation and minimize short term soil productivity loss due to erosion.
- Reduce the visual impacts of fireline as well other suppression activities when practicable.
- Repair damage to non-federal and National Forest System roads and drainage structures caused by suppression activities.
- Prevent unauthorized motorized vehicle and Off Highway Vehicle (OHV) access into areas affected by suppression efforts.
- Ensure fire suppression effects to roads comply with current Motor Vehicle Use Map (MVUM) direction
- Protect natural and cultural resources from additional damage.
- Mitigate and assess damage that occurred to cultural resources.

- Remove all suppression related materials including equipment, debris, trash, signage, and flagging.

The repair standards that are outlined in the repair plan are the minimum standards set for State Response Area lands within Forest Service Direct Protection Area. If negotiations with the landowner occur with anything less than the standards set in the attached document, the negotiation shall be documented. Additional repairs desired by any landowner are the responsibility of the landowner or must follow the compensation claim process. All work done on State, County, or private lands within the Forest Service Direct Protection Area will be carried out to the attached standards and in accordance with the Cooperative Fire Management Agreement.

1.3 – Responsibility

Suppression Repair is the responsibility of the Incident Management Team (IMT)/ Suppression Repair Team until the fire is officially declared out as designated in the Delegation of Authority. The IMT will ensure all repair activities are either completed prior to release, passed on to the newly assigned IMT, or back to the home unit. Resource Advisors (READ, REAFs, FSRS and ARCHs) will add additional site-specific fire suppression impacts identified during the repair process to this plan as addendums to the appropriate DPA. On Federal Lands READs will inspect all repairs to ensure they meet the stated objectives and conform to the below guidelines. Resource Advisors will work with Suppression Repair Division to ensure implementation meets specifications outlined in this document.

The suppression repair activities described below are identified as **Stage 1** and **Stage 2**.

The overall objective of **Stage 1** repairs is to repair damage caused by the fire suppression activities to minimize negative environmental impacts on both private and federal lands. The goal of **Stage 2** repairs on National Forest System lands and Bureau of Land Management is to return the affected area to pre-fire conditions as closely as possible.

Stage 1: Repairs for the Mosquito Incident will occur on roads, fire lines, drop points, safety zone, staging areas, spike camps, helispots, stream crossings, water drafting locations, trails and contingency lines and all other facilities or resources impacted by suppression resources.

Stage 2 repairs will occur only on National Forest System lands and Bureau of Land Management lands and will be the responsibility of the Eldorado & Tahoe National Forests and Mother Lode Field Office respectively. Repairs may occur after the fire is declared out or at any other appropriate time, based on specific resource concerns and monitoring efforts (e.g. additional repair of hand and dozer fire lines, fall season storm proofing, noxious weed management, road surface and drainage repair, restoration of facilities, treatment of suppression slash, etc.). **Stage 2** repairs on private lands are the responsibility of the landowner, at their discretion.

The Forests will be responsible for determination of effects and implementation of necessary mitigations to comply with the National Historic Preservation Act and Endangered Species Act and invasives species management. The suppression repair plan is implemented successfully when the repairs mentioned in this document are completed. A READ will approve the completion of the repairs. READs will maintain a map of all needed repair items and will track completion of them.

2.0 - General Repair Guidelines

The below descriptions are guidelines for the repair of fire suppression damage. The plan recognizes that not all situations are covered under this guidance and that site-specific conditions will require good judgment and common sense to prevail in instances where these guidelines are not appropriate. Take particular care not to damage live trees or expand the impacted footprint during suppression repair- (i.e. do not widen firelines during repair). If the general repair needs discussed below are not adequate then READs will develop specific guidelines for those areas.

2.0.1 - Equipment for Suppression Repair

Generally, dozer lines require heavy equipment for suppression repair, and hand lines require hand tools. Examples of equipment that can be used on suppression repair are, but not limited to, excavators/masticators, excavators with interchangeable heads for bucket and masticator use, excavator with thumb bucket, masticators, chippers to chip slash, processor for large log piles, water trucks with side spray capability (for shoulder and cut bank work), dozers with 6-way blade to support excavator work, road graders with water truck support, suppression crew with water capability for initial attack at masticator work site, tracked excavator with 2-3 yard thumb bucket and low pressure tracks that is capable of working on 30-45% slopes.

2.0.2 - Prevention of Weed Spread and Introduction

All incoming and outgoing off-road equipment such as excavators, dozers and masticators, and on-road equipment such as road graders, backhoes and transport vehicles shall be cleaned prior to and after commencing work, so that they are free of soil, mud (wet or dried), seeds, vegetative matter or other debris that could contain seeds in order to prevent new infestations of noxious weeds in the suppression rehab project area. Dust or very light dirt, which would not contain weed seed, is not a concern. Where possible, during rehab implantation, flag and avoid infestations of high priority noxious weeds. READs will designate the order, or progression, of rehab areas to emphasize treating uninfested areas before treating infested areas. After using equipment in weed infested areas, clean equipment so that it is free of soil, seeds, vegetative matter, or other debris prior to being moved from infested sites to uninfested sites and prior to being transported out of the project area. To move equipment from one infested area to another, the infestations in both areas must be the same species and the new area must have widespread infestations. If both situations are not present, then equipment must be cleaned prior to moving into the next area.

2.0.3 - Litter, Trash, and Flagging Removal

Remove all litter, trash, and flagging from all suppression activity areas; this includes micro- trash. This ensures visual quality as well as land stewardship in the completion of fire suppression activities is met. Signs and location flagging may remain until fire suppression damage repair is complete. All equipment and supplies remaining on the fire line will be removed and returned to Supply.

2.1 Fireline Repair

2.1.1 - Pulling Back of Soil, Duff, and Vegetation (Stages 1 & 2)

Stage 1: Restore natural contours as needed to allow water to flow away from the fireline and to redistribute topsoil across the line to facilitate the establishment of vegetation. All soil berms present from line construction where feasible should be knocked down and spread across the constructed line. Leave a roughened surface to promote infiltration, erosion control, and recovery of native plants.

For federal lands, maintain lines in a condition so they are easily reopened for firefighting and provide sufficient access (8 to 16 feet) that is not obstructed with large diameter wood. Windrowed vegetation will be separated aggrading away from the access route from fine slash to large diameter logs along the periphery of the line. To the extent possible all windrowed vegetation will be masticated, chipped, and/or crushed in a manner that does not impact access along the line. If able large logs may be concentrated in small decks for easier processing and/or removal during stage 2.

Stage 2: Slash and vegetation provides soil cover to prevent soil erosion and sedimentation. Vegetation processed during stage 1 should be spread across the constructed line except at identified in strategic fuel management zones. Firelines will be reviewed by designated agency fuel management personnel to determine whether they will need to remain clear for future use consistent with the designation level. Strategically identified firelines will retain the work completed in stage 1, no additional material will be placed over the line..

On all lines not in fuel management zones, slash depth should not be deeper than necessary to achieve soil coverage. In the areas where soil is pulverized into powder along control lines, consider scattering brush over the soil surface after the line is repaired to reduce the erosion risk from wind and water. If sensitive resources are at risk or there is a high probability of erosion, consider the placement of additional soil cover, vegetative materials, or erosion control materials including mulch but not limited to weed-free rice or wheat straw, wood shreds, wood strands, hydro-mulch, or erosion control blankets.

2.1.2 - Installation of Waterbars (Stage 1)

Stage 1: When natural contour cannot be reconstructed, ground cover does not exceed 60%, and slope exceeds 5% construct waterbars. The three objectives of waterbars are to: (1) divert the destructive overland flow of water off the fireline; (2) discharge the overland flow onto areas where the erosive energy can dissipate; and (3) aid in the recovery of vegetation. The last objective will be achieved if erosion is prevented on the fireline surface. Erosion removes topsoil which holds a majority of the organic matter, nutrients, and water holding capacity of the soil profile. Waterbars are designed to intercept slopes, slow, and spread the precipitation run-off.

The idea is to move water off the fireline before it can build up enough energy to erode soil and transport sediment. If width of control/suppression line potentially increases runoff energy, consider using chevrons or alternating the direction of waterbars. These are guidelines and are not intended to restrict the number of waterbars if the need or lack of need is justified. Operator safety should be taken into account, if slopes are too steep for safe implementation then waterbars should not be constructed.

- Spacing: These spacing distances should be used as a guide. Judgment should be used in locating waterbars to minimize erosion potential.

Install waterbars at the following maximum intervals:

Dozer Line

Fire Line Gradient (% slope)	Distance Between Waterbars[A](feet)
0 to 10	250
10 to 20	100
20 to 40	75
41 to 60[B]	50[B]

Hand Line

Fire Line Gradient (% slope)	Distance Between Waterbars[A](feet)
0 to 5	No waterbars needed
6 to 15	200
16 to 30	100
31 to 50	75
51 to 60	50[B]
>60	None[B]

- Depth: For dozer lines cut at least 6 inches into compact soil, the total height from bottom of ditch to the top of the waterbar should average at least 18 inches and not exceed 24 inches. For handlines cut at least 4 inches into compact soil, total height from bottom of ditch to top of waterbar should average at least 8 inches and not exceed 12 inches.
- Outlet: Water should be directed to unburned areas, and/or resistant surfaces with high vegetation cover when possible. Waterbars should discharge into undisturbed areas and preferably rocky ground, or filter areas well protected with ground and vegetative cover, whether rocks or organic materials. Waterbars should not direct water into stream channels or roads.

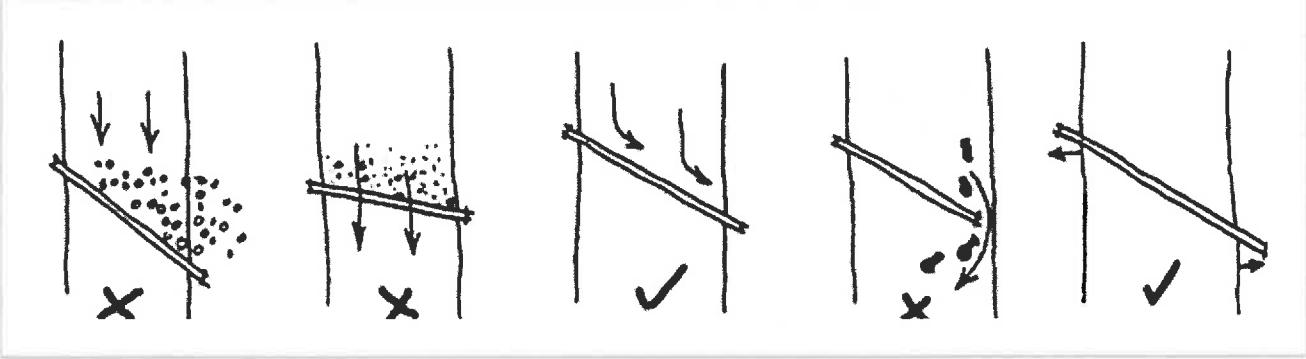

Figure 1: Aerial view of waterbar do's and don'ts

Width: The waterbar channel should be enough to handle expected water flows and to avoid plugging when a normal amount of sloughing or sediment movement occurs.

- Angle: Waterbars should be placed at an angle relative to the fireline. The angle should be between 30 to 45 degrees. Angle is important, if the angle is too shallow, the water will slow down

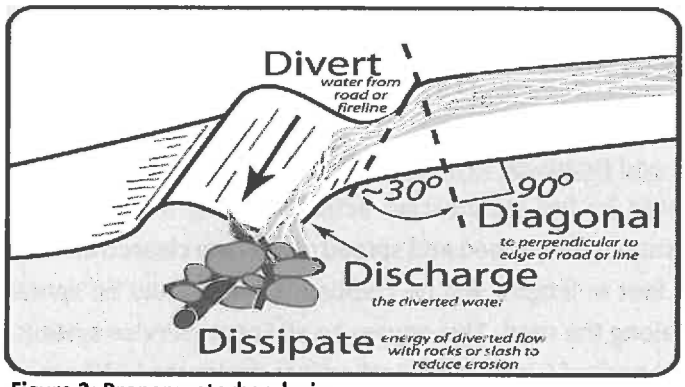

Figure 2: Proper waterbar design

and deposit the sediment it carries in the waterbar making it ineffective. If the angle is too steep, water will continue at high velocity and be able to erode and carry additional sediment where it exits the waterbar.

2.1.3 – Line in or through Watercourses (Stage 1)

Stage 1: Remove deposited soil from streams, watercourses, swales, or draws back to the original contour. Remove only as much as feasible without further damage to the watercourse. Restore bank channels at fireline crossings back to the shape seen adjacent to the crossing. Pull perched soil from drainage edges and spread it evenly across the fireline. READS should be present during repair work in watercourses.

Do not remove large woody debris that was in the channel prior to the fire. Bucked limbs and logs in watercourses from fire suppression activities should be removed from the watercourse. Where firelines are constructed within 100 feet of intermittent and perennial streams, use certified weed free straw, or slash to increase soil cover and prevent sediment from entering the stream channel. Major damage to streams from fireline construction shall be reported to Resource Advisor or Forest personnel and will be evaluated for site specific recommendations.

2.1.4 - Block Entrance and Exit of Firelines (Stage 1 & 2)

Intersections of firelines and roads or trails should be blocked with large rocks, large trees, or large berms to prevent access by OHVs. Attempt to conceal or hide the entrance and exit using the landscape and available materials, if larger diameter trees are used partially bury trees to reduce wood gathering. On dozer lines that are on non-system roads or trails closed to motorized travel, discourage use and potential resource damage by OHV's construct earthen berms and/or place boulders, heavy logs, slash, and other large vegetative material at the beginning of.

Stage 1: Non-federal land only

Stage 2: Federal lands after it has been determined that lines are no longer necessary for suppression activities.

2.1.5 - Burned Over Fireline (Stages 1 & 2)

Stage 1: Construct waterbars following the spacing intervals in 2.1.1, utilize an excavator or ripper to de-compact the fireline.

Stage 2: Place additional soil cover, vegetative materials, or erosion control materials including weed-free rice or wheat straw, wood shreds, wood strands, hydro-mulch, or erosion control blankets.

3.0 - Concentrations of Slash and Roadside Brushing (Stage 1 & 2)

Concentrations of slash created by fire suppression activities along firelines, roadways, developed recreation areas, and among structures should be chipped and spread across the cleared area. Material between 1 & 6 inches on the large end and over 2 feet in length, will be chipped. Chips should be spread or broadcast into adjacent vegetation rather than piled along the road. This applies to all Forest Service system roads that received roadside brushing. Chip piles should not exceed 6 inches in depth unless designated. Where appropriate, concentrations of slash can be lopped and scattered, not to exceed 18 inches in height.

Larger trees and logs with sawtimber volume (generally greater than 12" diameter on the large end) should be decked for future sale. Large piles of small diameter trees (generally less than 12" on the large end) may be left in place for future sale as green biomass as designated by READ or Forest personnel.

4.0 - Fuels Breaks/Fuel Management Zone Repair Standards (Stage 2)

Stage 2: Firelines located on strategic fuel management zones will be repaired with the intent that they may be reused in the near future. Repair of these lines will involve little to no slash pullback when further away from roads. Near open roads block OHV access and spread slash and logs to disguise line in areas where visuals are a concern. Mulch and seeding may be used to cover soils to prevent erosion.

Woody debris that was pushed by dozers will be piled with a thumbed excavator/dozer combination for later burning as opposed to being spread across these lines. Fine organic material and soil may be spread on top of the line, but larger slash will be piled so that these lines may be maintained for future fire suppression efforts. Pile materials in center of the fuel break for burning later by the local unit. Follow applicable piling guidelines. Remove berms were appropriate.

5.0 - Helispots, Safety Zone, Spike Camp, and Staging Areas (Stages 1 & 2)

Stage 1: If these sites have compacted soils, use a dozer ripper or excavator bucket to reduce the soil compaction, and construct waterbars where needed to divert water. Chip windrowed woody material within safety zones and staging areas. If available use large diameter logs (partially bury) and/or rocks to block unauthorized use.

6.0 - Water Drafting Sites (Stages 1 & 2)

Stage 1: Water sources developed as a water draft site are to be restored to a condition resembling pre fire use. Remove any dams, dikes, or other impoundments that were created for fire suppression activities.

Stage 2: Use slash or cut additional material to have at least 75% coverage over bare soil. Special, site specific instructions from READs will be developed. READs should be present when repairing these areas.

7.0 - Cultural Resources (Stages 1 & 2)

All sensitive cultural areas will be flagged with yellow/black flagging in advance of suppression repair activities.

No repair work may commence within known heritage and archaeological resource sites boundaries without consultation with an incident assigned archaeologist, and/or the lead federal agency archeologist.

For sites on private land the CAL FIRE archaeologist shall be provided an inventory of sites affected by suppression repair activities.

Stage 1: Coordinate with an incident assigned archaeologist, and/or lead federal agency archeologist assigned to the incident for repairs within archeological sites. For any dozer line impacts to archeological sites, repair within the individual site should be handled on a case-by-case basis. Archeologists may advise to repair with hand crews.

Stage 2: Work in archaeological sites will be completed with a technical specialist ARCH present or only after coordination with an ARCH or lead federal agency archaeologist.

Repair damage to archaeological sites will be completed as prescribed by the assigned archaeologist.

Conduct site damage assessments for sites impacted as a result of direct fire suppression activities. Conduct National Register of Historic Places determinations of eligibility for fire suppression impacted sites to assess historic properties that have been adversely affected (i.e. damaged) as a result of direct fire suppression activities and how to appropriately remediate fire suppression impacts to the site.

8.0 - Trails used as Firelines (Stage 1 and 2)

Consult resource advisors for trail repair standards.

9.0 - Fences, Gates, and Other Range Resources (Stage 1)

Stage 1: Fences, gates, and other range resources cut or damaged during fire suppression will be replaced or repaired. These fences should be repaired following mitigation work on dozer lines.

10.0 - Noxious Weeds (Stage 1)

Stages 1: Areas flagged with noxious or invasive weeds flagging, contact a resource advisor for additional guidance.

11.0 - Revegetation Needs (Stage 2)

Stage 2: In some instances, there is a need to utilize native plants to revegetate areas that are very steep, highly erosive, susceptible to invasive plant species colonization, have higher aesthetic standards and require vegetation for screening avoidance areas. Most revegetation is accomplished through seeding and mulching of native grass species.

12.0 - Hazmat (Stage 1)

Stage 1: Areas of fuel or oil spills or the discovery of other hazmat concerns should be reported to a READ who will guide cleanup requirements. Burned vehicles should be recorded and reported to a READ for local unit to follow up. Dump sites and garbage piles should be recorded and reported to a READ for local unit to follow up. NOT ALL DUMPS ARE HAZARDS but please use caution, if the dumps contain bottles of household cleaner or other hazmat concerns then specific precautions may apply. Mark hazards with caution or hazard flagging until resolved or mitigated. Open septic systems should be flagged for avoidance by foot traffic and reported to a READ for follow up.

13.0 - Roads (Stage 1)

Stage 1: Road repair should follow the existing design of the road prism. National Forest System roads used by the incident will be evaluated by a qualified road engineer. Each road should be evaluated to determine how it should be drained. Some sections only require the outside berm to be broken or pulled in, while others may require rolling dips be installed. Rolling dips are only effective on slopes less than 10%. Steeper sections of road should either be outsloped or have drivable water bars installed.

Damaged roads with an aggregate surface may need to be bladed or graded to restore a condition to facilitate traffic and provide proper drainage. This includes maintaining the crown, inslope or outslope of the traveled way, turnouts, and shoulder; repairing berms; blending approach road intersections; and cleaning drainage dips and lead-off ditches. If aggregate surface has been pushed off or removed, new surface material may need to be added.

- Unauthorized routes/roads that were opened for suppression activities will be closed. Rocks, logs, and/or other structures should be placed to disguise the entrance and to create an earthen berm to prevent unauthorized OHV use.
- Clean culverts plugged with soil, rock, slash, and debris resulting from road use by fire suppression.
- Clean and grade ditch lines, rolling dips, and lead off ditches to repair function.
- Remove soil pushed into cattle guards.
- Grade roads to drain freely. Grade within the existing roadbed. Restore the structure of the roadbed by watering, grading, and recompacting. Retain aggregate material on the roadway.
- Where vegetative material was cut and deposited adjacent to roads it shall be either lopped and scattered to a depth within 18" of the soil surface, chipped, or masticated.
- Damage to bridges, gates, culverts, drainage features (e.g., rolling dips, road cross ditching, and lead-off ditches), guard rails, signs, and other facilities from suppression operations will be repaired to the pre-fire condition.
    - If repairs on Private lands are not feasible and the culvert must be replaced, culvert installations will not be completed by assigned fire suppression resources. The landowner will be responsible for the installation and advised of the California compensation claim process.

15.0 - Damages to Private Property (Stages 1 and 2)

Stage 1: Inventory and report damages caused to private property by suppression activity. Damages which are repairable by fire resources will be incorporated into suppression repair.

Stage 2: Other items may be addressed through potential claims reporting.

16.0 Natural Resource Sensitive Areas (Stage 2)

Stage 2: Work in Natural Resource sensitive areas will be completed with a READ present or only after coordination with a READ. Impacted sites will be reported to the READs as soon as possible and work in the immediate area will stop until a READ can assess the damage. Work can continue in non-sensitive areas. If identified sites are encroached upon or previously unidentified sites encountered during suppression repair, work will stop immediately and the Division Supervisor, and READ will be notified.

17.0 - Special Interest Areas (Stage 2)

Stage 2: In the described areas, no repair work will be conducted without a qualified Resource Advisor present.

18.0 - Site Specific Repair Guidelines (Stage 2)

Stage 2: Site specific repair guidelines are in addition to the previous sections. Additions will be submitted as on-the-ground assessments and future fire suppression activities are completed and cataloged. These areas will be added as an addendum to the suppression repair plan.

Appendices (to be updated as information becomes available)

Appendix A. Suppression Repair Specification Overview Table
Appendix B. Strategic Fuel Management Zone Map
Appendix C. Inventory of Field Maps

Appendix A:

Fireline Suppression Repair – Field Maps Specifications Overview Table

Specification	Stage 1 (All Lands)	Stage 2 (Federal Lands)
2.1.1 - Pulling Back of Soil, Duff, & Vegetation	Pg 4: Restore natural contours with water flowing away from constructed line. Redistribute topsoil across line. Knock down berms & spread across constructed line. Leave a roughened surface.	Pg 4: Spread slash & vegetation across line. Consult with DIVS before placement. *See Repair plan for add'l specs.*
2.1.2 - Installation of Waterbars	Pg. 4-6	Same
2.1.3 – Line in Watercourses	Pg. 6	Same
2.1.4 - Block Entrance & Exit of Fireline	Pg. 6	Same
2.1.5 - Burned Over Fireline	Pg. 7: Construct waterbars following the spacing intervals in 2.1.1, utilize an excavator or ripper to de-compact the fireline.	Pg. 7: Construct waterbars following the spacing intervals in 2.1.1, utilize an excavator or ripper to de-compact the fireline. *See repair plan for add'l specs*.
2.1.6 - Chunking	Not applicable	Addendum: Roughen surface of control lines by creating divots across entire dozerline. Divots should be offset vertically by width of divot with spoils placed on the downhill side. Divots should be 6-18" in depth (deeper for steeper slopes).
3.0 - Concentrations of Slash & Roadside Brushing	Pg. 7: Chip and spread to depth <6"; lop and scatter as directed	Pg. 7: Chip and spread to depth <6"; do not pile chips; lop and scatter as directed
4.0 - Fuels Breaks	Not applicable	Pg. 7
5.0 - Helispots, Safety Zone, Spike Camp, & Staging Areas	Pg. 7: If soil is compacted, use a dozer ripper or excavator bucket to rip.	Pg. 7: If soil is compacted, use a dozer ripper or excavator bucket to rip Use slash for soil cover. Knock down berms & spread topsoil. Barrier to prevent vehicle access.
6.0 - Water Drafting Sites	Pg. 8 Restore to pre-fire condition. *See Repair Plan for add'l specs.*	Pg. 8: Use slash or cut additional material to have at least 75% coverage over bare soil. Consult REAF prior to repair.
7.0 - Cultural Resources	Pg. 7: Consult CALFIRE archaeologist before repair.	Pg. 8: Sensitive areas flagged in black & yellow. Consult ARCH before repair.
8.0 – Trail Repair	Not applicable	Addendum: Consult REAF before repair
9.0 - Fences, Gates, Range Improvements	Pg. 8: Repair or replace fence after repair work on dozer lines	Same
10.0 - Noxious Weeds	Pg. 8: Areas flagged with noxious weed/invasive flagging. Consult REAF before repair.	Same
11.0 - Revegetation Needs	Not applicable	Pg. 9: Consult REAF before repair
12.0 - Hazmat	Pg. 8	Same
13.0 - Roads	Pg. 8	Same
16.0 Natural Resource Sensitive Areas	Not applicable	Pg. 10: Sensitive areas flagged in black & yellow. Consult REAF before repair.
17.0 – Special Interest Areas	Not applicable	Pg. 10: Consult REAF before repair
18.0 – Site-specific repair needs	Not applicable	Addendum: Consult REAF before repair

Mosquito Fire, CA-TNF-001371
REPAIR PLAN ADDENDUM 1, 10/5/2022

18.0 Site-Specific Repair Guidelines (Stage 2)

This addendum provides site-specific repair prescriptions for areas with sensitive resources as stated in in Mosquito Fire Repair Plan (9/25/22). Additional prescriptions may be added as additional areas are assessed.

Sage Hill (Layne's Butterweed (federally threatened plant) & Western States Trail): Repair dozer line with minimal additional ground disturbance and damage to Layne's butterweed plants. Minimize waterbar construction. Focus on berm removal and top soil replacement; where feasible (skeletal soils), there should be full vegetation and soil full coverage. Do not masticate. Do not convert to fuelbreak. This area is high susceptible to unmanaged OHV use. To restrict OHV access to Layne's butterweed plants, install 1-2-ton boulders at maximum 2-feet spacing along Road 3001-008 and 3004-6.

China Wall OHV Staging Area & Chickenhawk Overlook: These areas are highly susceptible to unmanaged OHV use. To restrict OHV access, install 1-2-ton boulders at maximum 2-feet spacing along Chicken Hawk Road and along Foresthill Divide Road and along access route into staging area. Boulders will be placed outside of Placer County Road right of way (10ft).

Placer Big Trees: Maintain dozer line as fuelbreak; follow specifications 4.0-Fuel Breaks. When repairing handline, buck and pile all large fuels. Fuels will be piled; not lopped and scattered. Piles will be less than 4x4'. Piles will not be placed within 100 feet of trunks of mature sequoia trees or on sequoia seedlings/saplings.

8.0 Trail Repair (Stage 1& 2)

Trail as line: repair should follow existing trail prism. Re-establish original engineered shape (e.g. inslope, outslope, and center crown). Re-establish prisms and surface drainage features (ditches, waterbars and dips), and remove berms. Repair or replace minor structures (e.g. gates, signs, guardrails, overside drains and culverts).

Fireline-trail intersections: Replace all barriers (e.g. boulders, bollards, large woody debris) such that they effectively restrict vehicle access. If barriers were destroyed in suppression, install barrier to restrict vehicle access. Barrier area must be long enough to prevent vehicle access, approximately 100ft in length, but may be adjusted based on visibility (material may include rocks, large woody debris, brush stacking, or snags (downed or standing). Slash cover should exceed >50% cover in barrier areas, where feasible. If using boulders, there should be a maximum of 2-feet spacing.

Western States Trail (Michigan Bluff to Last Chance): Trail itself is a historic resource; take care to preserve the trail bench, especially along singletrack portions of the trail. Avoid felling near historic rock walls.

2.1.6: Chunking (site-specific; steep lines along Rubicon and Middle Fork American Rivers): Roughen surface of control lines by creating pits and mounds across entire dozer line. Pits should be offset vertically by width of pit with spoils placed on the downhill side. Pits should be 6-18" in depth (deeper for steeper slopes). Most effectively done by excavator digging pits or a very small dozer with articulated blade piling soil.

(not to scale; should be 6-18")