



Watershed Stabilization & Hazard Tree Mitigation Practice Specifications

The State of New Mexico; Energy, Minerals and Natural Resources Department (EMNRD), Forestry Division has sole discretion to determine the appropriate post-fire recovery actions to implement on properties to assist in watershed stabilization, and to mitigate risks from hazardous trees that exist near human infrastructure, roads, and powerlines. EMNRD may select any practices from the following list; however, all practices may not be suitable for each property. Removal of standing dead trees may be included when woody material is needed to implement erosion control measures; however, removal of all standing dead trees will not be included in this program.

1. Hazardous Tree Removal

Felling (cutting down) of wildfire-damaged trees that pose an immediate threat of falling onto a road, powerline, or other developed areas. Handling of resulting materials may include chipping of trees, limbs, or branches; utilizing trees for **contour felling and/or log erosion barriers** (see description below); or stacking of felled trees. Trees/brush shall be cut down to four inches above ground level or less and may be removed by either hand crews or heavy machinery.

2. Contour Felling and Log Erosion Barriers:

Felling of dead trees on steep slopes (25-60%) where the fire has increased the risk of water runoff and erosion. Felled logs are anchored to the soil horizontally on the slope by laying the logs in small trenches and/or staking the logs to the soil surface to prevent them from sliding downhill. Logs shall be placed in level lines, with the ends staggered to reduce the risk of water concentrating along the edges and adding to erosion. Individual lines of trees across the slopes are spaced according to the steepness of the slope, typically between 20 feet (for steeper slopes) to 80 feet (for gentler slopes). Logs used for contour felling should have limbs removed on the downhill side, have approximately half of the log in full contact with the soil, and be anchored into the slope using tree stumps, metal pins, or local rock. Species may include all native or non-native tree species or woody materials located at a project site.



3. Ground Roughening

Preparing soil for seeding and planting by loosening or breaking up the soil, which improves soil contact for seeds. Site preparation should occur immediately prior to planting in the spring or fall (for cool season grasses) and summer (for warm season grasses). Roughening shall always be followed by seeding and mulching.

4. Seeding

Planting areas with seeds of native or adapted vegetation. May be combined with **mulching**. May also be combined with **ground roughening** in areas with soils that were severely burned, (which has effects including limiting the number of seeds remaining in the soil and creating a soil surface that is unable to absorb water). Seeding should occur in the appropriate season to maximize success and reduce grazing by wildlife. Most often this will be after nighttime temperature rises above 60 degrees Fahrenheit (for warm season grasses).

5. Mulching/Chipping/Mastication

Applying natural mulch (straw, wood chips, etc.) on areas with bare soil to reduce erosion and/or support plant growth. Provides partial ground cover on gentle slopes and may be used with planting and seeding.

- Mulching adds a protective layer of organic material, typically straw or finely ground wood to cover exposed soil. This helps reduce erosion, maintain soil moisture, and protect against the elements.
- Chipping produces uniform wood chips, similar to those used on playground surfaces. These chips are more consistent in size and create a more stable soil cover, reducing evaporation and providing a protective barrier against erosion.
- Mastication results in a larger, uneven pieces of woody material, similar to fire kindling. This method leaves behind rough material, which breaks down more slowly and provides longer-term protection against soil erosion.

Each method serves specific purposes depending on the desired outcome, such as moisture retention, erosion control, or preparing a site for restoration.

6. One-rock dam for erosion control

A small, single-layer rock structure, for use in small gullies in higher elevations and slopes where the potential for soil erosion is significant. The goals are to prevent further erosion, slow down water, capture dirt or sediment, and promote downstream plant growth. The bottommost row of rocks is placed within a small trench to ensure the rocks are stable and will not be displaced with high water flows. Rocks are placed in a single layer, ensuring the dam is lower in the center than the sides to allow



water to overflow without causing new channel formation on the sides. Multiple structures may be placed in a series based on the slope and water flow patterns.