



RMAP #: _____ Landowner: _____ Date: _____

Routine Maintenance Practices and Storm Maintenance Strategy For Forest Roads under RMAP Obligation

Check all practices that will be used within the RMAP area. Add or attach additional routine practices that will be used that are not listed below. Landowners may provide their own documentation.

Routine Maintenance:

Cut and Fill Slopes

- Slides from the ditches and roadway will be removed. Overhanging material from the cut and fill slopes will be removed to restore the natural angle of repose.
- Areas with potential to deliver debris to any typed water will be stabilized by fill pullback, weight placed at toe of slope, compaction, abandonment, and/or other measures as appropriate.
- Undesirable slide materials and debris will not be mixed into the surface material.
- Exposed cut and fill slopes will be seeded with erosion resistant native vegetation.
- Buffers such as slash filter windrows, silt fences, or straw wattles will be placed appropriately along stream adjacent roads where there is potential for surface erosion sediment delivery to typed waters.
- Other _____

Road Surface and Maintenance

- The road surface, turnouts, and shoulders will be graded and shaped as needed to provide a suitable travel surface and control water runoff in an even, dispersed manner. Grading may be substituted with a lift of surface rock.
- Waste material from slides or other sources should be stabilized so as to not deliver sediment into typed waters. Stabilization methods include establishing vegetation and covering exposed soils with straw or hydro mulching.
- Grading will not undercut the back slope of the bottom of the ditchline.
- Desirable surface material will not be bladed off the roadway.
- Surface material lost or worn away will be replaced.
- Outside berms will be removed except those needed to protect sensitive slopes and fills to prevent direct drainage to streams.
- Grade roads when moisture and soil conditions are not likely to result in excessive erosion.
- Use sediment traps, silt fencing or sumps only as temporary measures because of continuous maintenance. Use these methods if erosion is likely to deliver sediment to typed waters.
- Review roads for evidence of instability such as cracks or settling at locations where potential resource impact is evident. Correct using fill pullback, water diversion or other method suited to the site.
- Other _____

Drainage: Ditched Roads

- Ditches and drainage channels at inlets and outlets of culverts will be kept clear of obstructions and functioning as intended.
- Culverts will be inspected and cleaned routinely and immediately after any significant storm events regardless of harvest activity.

- Where a relief culvert outfall drains onto unprotected erodible material, a rock apron, flume, down spout, and/or rock energy dissipaters will be installed to prevent erosion below the outfall.
- Silt bearing surface runoff will be prevented from entering typed waters. This will be achieved by adding relief culverts, clean hard rock, ditch filters, or silt ponds. Drainage structures will be inspected and cleaned routinely as needed.
- Existing relief culverts in good shape and functionally adequate but not meeting current minimum diameter requirements may remain until worn out. When the relief culvert is replaced, it will be upgraded to at least the 18-inch western Washington or 15-inch eastern Washington diameter standard.
- Other _____

Drainage: Out-sloped Roads

- A 3% outslope will be maintained where appropriate.
- Drivable dips will be installed in the road subgrade as necessary to control surface runoff.
- Waterbars may be installed as necessary when the road is not in use.
- Other _____

Relief Culvert Installation

- All new installations on road grades in excess of 3% will be skewed at least 30 degrees from perpendicular to the road centerline.
- Relief culverts will be installed using a slope steeper than the incoming ditch, but not less than 3%.
- Rock armored headwalls at culvert inlets will be constructed and maintained to the road shoulder level with material that will resist erosion.
- Relief culverts will be placed so that ditch water is routed to the forest floor in a stable location and energy dissipaters will be added as needed to prevent erosion.
- Energy dissipaters and sediment traps will be placed at the out slope or downspout end to prevent erosion or trap suspended sediment.
- Other _____

Seeps and Springs

- All seasonal and year round springs entering the road ditchline will be cross drained through the roadbed generally within 100 feet of where it enters the ditchline. Locations of natural depressional areas that seasonally accumulate water at road intersections are preferred.
- Other _____

Stream Crossings

- New or replacement stream crossing installations will be sized, and the fill protected, to accommodate a 100-year flood and passage of debris.
- Rock armor headwall culvert inlets will be installed where the stream gradient above the crossing is greater than 6%.
- Existing stream crossings will be inspected for scour, sediment delivery, outfall, and flow adequacy. If the structure is functioning with little risk to public resources it will be maintained until the end of its functional life. For culverts not being replaced, maintenance will include culvert inlet and outlet cleanout, culvert repairs, fill erosion control, and other work as needed.
- In addition to requirements for non-fish habitat stream crossings, fish passage for adult and juvenile fish will be maintained.
- Other _____

Bridges

- Exposed bridge fills next to streams will be armored or rip-rapped to prevent erosion.
- Bridge approaches will be maintained to be level with the bridge deck with crushed rock or pavement.
- Bridges will have curbs or splashguards installed.
- All bridge decks will be sealed to prevent road water and mud from dropping through to streams.
- Bridges will be cleaned to remove gravel and sediment that may enter streams.
- Other _____

Fords

- No fords
- Fords that are not functional will be abandoned; rock armored, paved, or replaced with a culvert or bridge as necessary.
- If streambed does not have firm rock or gravel base, install stabilizing material. Use reinforced concrete planks, crushed rock, riprap or rubber mats.
- Other _____

Storm Maintenance Plan

Pre-storm Planning

- Relief culverts will be inspected and cleaned as necessary prior to October 1 of any given year.
- Waterbars that are installed will be re-established prior to October 1 of any given year.
- Silt fences and settling ponds will be inspected and cleaned prior to October 1 of any given year.
- Waste areas will be placed in locations that are known to be stable and that have no potential to deliver sediment to typed waters or cause landslides.
- When storm related maintenance issues are discovered, the landowner will take necessary actions in a timely manner.

Storm Event Emergency Maintenance Strategy

- All roads within the system will be patrolled within 72 hours of a major storm event.
- Damage will be assessed then repaired or stabilized by a priority determined by the damage or potential to damage a public resource.
- Appropriate maintenance or repair actions will be taken based on these observations and the affected agencies will be contacted (e.g., DNR, DOE, WDFW, County).
- Other _____

Post Storm Recovery

- Repair follow-up will be prioritized with fish bearing streams a number one priority.
- Drainage structures that fail will be replaced with adequate sized structures designed to handle a 100-year flood event.
- Waste areas will be compacted then reseeded before the next winter season.
- Cutbank failures that have potential to deliver sediment to typed water will be vegetated as soon as possible.
- Other _____

Additional routine practices: (attach or list below)
