



Forest Roads Compliant and Non-Compliant Characteristics

State Forester Forum

Properly planned, designed, constructed and maintained roads are essential to sound forest management. Well built and maintained roads are an asset to the landowner; they benefit the operator by allowing for the responsible transport of forest products, while protecting aquatic resources and meeting water-quality standards. The Idaho Forest Practices Act administrative rules ([Forest Practices Rules](#)) contain several road construction and maintenance rules that focus on prevention of road washouts and avoidance of sediment delivery into streams.

GENERAL ROAD CONSTRUCTION / MAINTENANCE GUIDES

Rule-Compliant Road Characteristics

Potentially Non-Compliant Road Characteristics

PLANS AND ROAD STANDARDS

Widths and grades are suitable for needs and intended uses. Cost allowances are carefully analyzed. Roads are constructed with grades of 2% to 10%; these road slopes are least costly to drain and can be used most of the year if conditions are not too wet. Road layout is planned to fit the natural terrain features so that width, cuts, and fills are minimized.

Roads are excessive in width, resulting in excessive costs; large fill slopes require more drainage and more surface area to stabilize. Roads are constructed with near-zero grades; flat grades can form mud holes by pooling water. Roads are overly steep; (10%+) grades accelerate water runoff velocity, causing unwanted rilling and gullyng.

LOCATION

Roads are on stable landforms and gentle slopes outside the Stream Protection Zones (SPZs), entering the SPZ only for approaches to stream crossings. Greater amounts of vegetation are left undisturbed to dissipate and filter water, stabilize stream banks, protect aquatic habitats and maintain the integrity of the soil near streams.

Roads are built in the Stream Protection Zones (SPZs), or existing roads are used within the SPZ without an approved variance. Roads are constructed in which fills may erode into streams, road beds are laid on soft, wetter ground, or excessive SPZ vegetation is removed. Roads are located on steep, unstable slopes or on landforms which are subject to mass wasting.

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DRAINAGE

The road-drainage plan has every running foot planned with a combination of drainage structures to match the site and terrain.

- a) Roads are insloped with inside ditches and frequent cross-drainage structures.
- b) Roads are outsloped with drainage moving onto stabilized fills or filter strips of vegetation.
- c) Roads are insloped, outsloped or crowned with appropriate water-diversion structures.
- d) Surfaces of cuts, fills, berms, and roads are stabilized by grass, mulch, or fabric.
- e) All sediments and water diverted off the road are dissipated and filtered by undisturbed vegetation and slash filter windrows.

Roads are constructed with no thoughtful drainage system apparent. Mudholes, rills, gullies, washouts, and slumps occur on cuts and fills; water and sediments reach Class I and II streams. Inside ditches deliver directly to streams at crossings. Cuts and fills for switchbacks are in draws or creek bottoms. Cuts, fills and berms are not stabilized by grass seeding, mulching, erosion fabric, or slash filter windrows. Drainage systems for active and inactive roads are not maintained. On abandoned roads, drainage systems are not obliterated, culverts not pulled, and the road is not closed to vehicles.

RELIEF CULVERTS

Adequately located, sized, installed and maintained metal or plastic relief culverts are spaced under the road to disperse inside ditch, springs, seepage, and other water flows. They are sloped, tamped, and bedded firmly, and covered sufficiently. The inlets are armored with rock and constructed to remain unplugged. The outlet is armored or down-spouted to protect fills or extend beyond the toe of the fill slope.

No cross drainage is provided for inside ditches, road surface water, or water from springs and seeps. Culverts are too small or infrequent to provide adequate drainage relief. The inlets will be plugged by cut bank sloughing, maintenance grading, or debris. There are no culverts to supply proper drainage for intermittent streams.

CROSS DITCHES/ROLLING DIPS

On infrequently used roads, cross ditches are installed after each use and spaced properly (see [State Forester Forum on Cross-Ditches](#)), stabilized, and maintained. For frequently used roads, rolling dips are permanently built into the road surface, with gradients less than 8 percent.

Cross ditches or rolling dips are not installed, or if installed, are not adequately draining water off of the road, or are causing water and sediments to be delivered to a Class I or Class II stream.

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FILTER WINDROWS

Filter windrows are used when fill slopes pose a potential sediment-delivery threats to streams. They are constructed sediment barriers at the toe of fill slopes, made of slash and other woody debris (see [State Forester Forum No. 13, Slash Filter Windrows](#)). Windrows can trap 75 to 85+ percent of fill slope erosion in or near SPZs.

Filter windrows are not used and sediment from unstable fill slopes is being delivered to an SPZ. Filter windrows are installed, but not properly constructed.

MUD AND DUST

Where natural rock is lacking and soils easily turn into mud or dust, 3-inch-minus sized rock material is applied at least 10 inches deep on the surface of the road.

Mud or dust is generated, causing obstructions in operations, rutting in the roads, and threats to safety. Rock surface is lacking.

GRADES IN CURVES

Road grades on sharp curves are reduced to 7% or less. Grades are flattened out at stream crossings. Road junctions and truck turnarounds are not built near stream crossings or in SPZs.

Grades over 7% are sustained in sharp curves on switchbacks and at stream crossings. Road junctions and truck turnarounds are built near stream crossings and in SPZs.

INACTIVE OR ABANDONED ROADS

Inactive Roads: All drainage systems and structures are cleaned, stabilized, and maintained annually to prevent erosion. Access is controlled where seasonal traffic is allowed.

Permanently Abandoned Roads: Drainage systems are left in a stabilized condition with all stream crossings removed and stream gradients returned to their natural slope. Roads are closed to vehicular traffic.

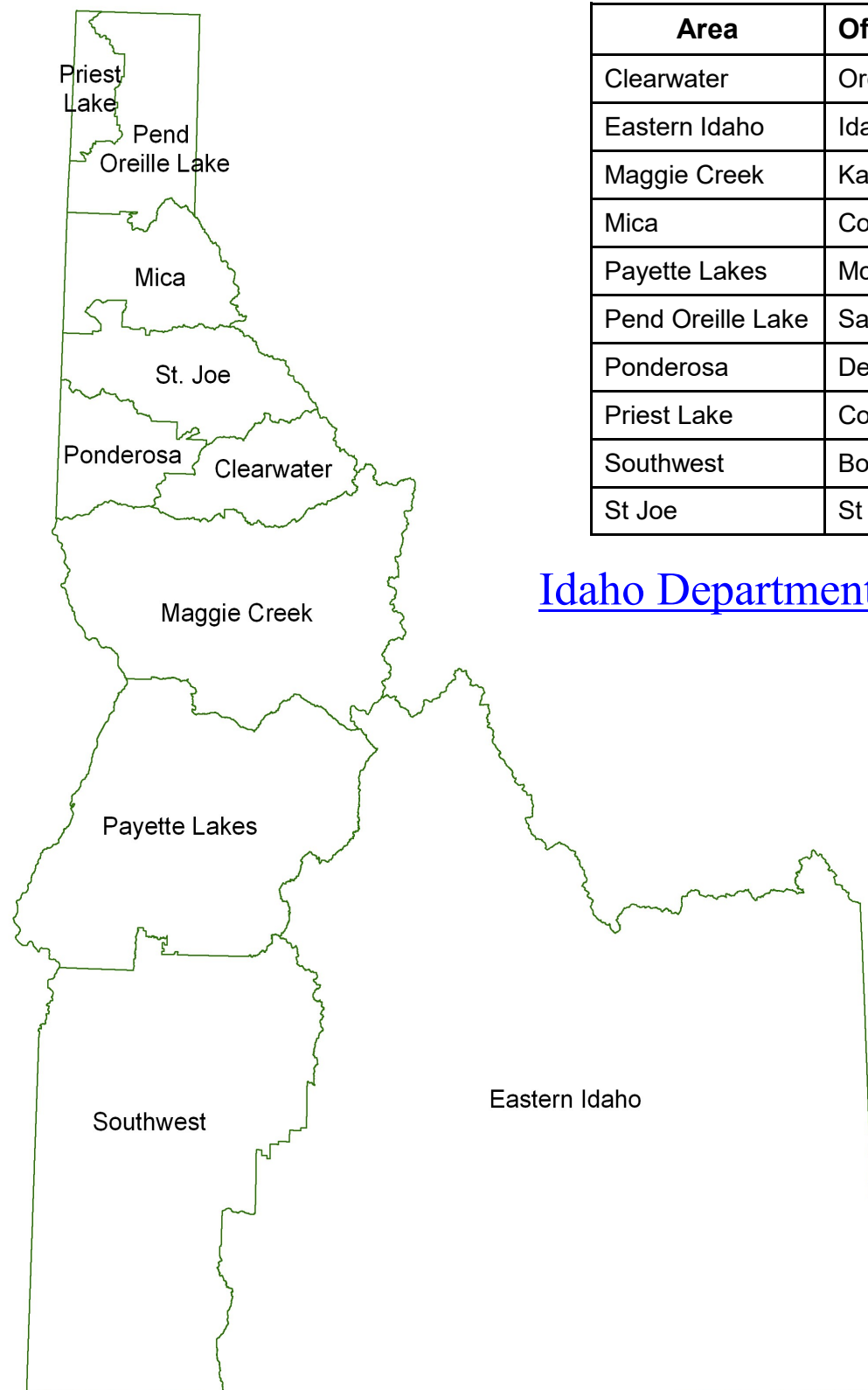
Inactive Roads: No post-operation stabilization or drainage cleanout is done. No planned regular or annual maintenance is completed.

Permanently Abandoned Roads: No final or post-operation stabilization and drainage cleanout is performed. No permanent road closure structures or barriers have been installed.

On-the-ground help and written materials on Forest Roads and Water Quality are available from your nearest Idaho Department of Lands Private Forestry Specialist.



**FOR MORE INFORMATION CONTACT
ANY IDAHO DEPARTMENT OF LANDS
PRIVATE FORESTRY SPECIALIST**



Area	Office Location	Phone
Clearwater	Orofino	(208) 476-4587
Eastern Idaho	Idaho Falls	(208) 525-7167
Maggie Creek	Kamiah	(208) 935-2141
Mica	Coeur d'Alene	(208) 769-1577
Payette Lakes	McCall	(208) 634-7125
Pend Oreille Lake	Sandpoint	(208) 263-5104
Ponderosa	Deary	(208) 877-1121
Priest Lake	Coolin	(208) 443-2516
Southwest	Boise	(208) 334-3488
St Joe	St Maries	(208) 245-4551

[Idaho Department of Lands Forestry](http://www.idahodnr.gov/forestry)