

USDA Forest Service

For More Information

The staff of the Skaneateles Lake Watershed Agricultural Program (SLWAP) and County Soil & Water Conservation District (SWCD) in your area can provide technical assistance on implementing deflectors in access roads.



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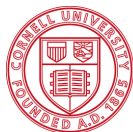
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Water Deflectors

Managing Surface Water and Reducing Erosion on Unpaved Roads



Additional Practices to Stabilize Roads

Other practices can also be installed to manage surface water and reduce erosion of roads.

- Water Boxes
- Broad-based Dips
- Box & Pole Culverts

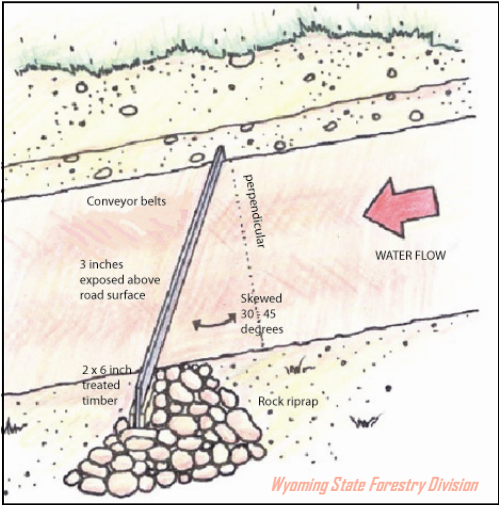
Please contact your local SWCD for technical assistance with these practices.



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Over the past few years, there have been some powerful summer storms. The accompanying heavy rains can make for real “gully washers” in streams, ditches, and camp roads all around the lake. A common occurrence on unpaved access roads is the scouring and washing off of the road surface into the adjoining landscape. Eventually, gully formation makes the road nearly impassable by vehicles and equipment. To address this matter, staff of the Skaneateles Lake Watershed Agricultural Program (SLWAP) have been installing water deflectors in unpaved access roads to divert water off the road and prevent erosion.



Rubber water deflectors are installed across an access road to reduce water gullies and erosion.

Benefits of Water Deflectors

- Helps to divert water off access roads
- Reduces erosion and formation of gullies
- Allows vehicles and equipment to pass over without interference
- Suitable on unpaved, low maintenance, gravel or earthen roads (such as farm access roads, camp roads, forest roads, or other seasonal use roads)

What is a Water Deflector?

A water deflector is quickly and simply constructed from a length of standard-grade rubber (made from a used conveyor belt) that is sandwiched between two treated, wooden 2” x 6” planks. Multiple, 4-inch galvanized screws help to secure the rubber belt between the planks.

Supplies Needed

- ☐ 2” x 6” treated lumber planks (Two planks per deflector)
- ☐ 3/8” thick by 11” wide standard grade rubber **length needed is determined by width of road (used conveyor belt rubber is suitable – most earthwork contractors have connections with local quarries and can help you locate a source of rubber)*
- ☐ 4-inch galvanized screws
- ☐ 4-6” limestone rip rap
- ☐ Seed & mulch (for disturbed area after construction)

Typical material costs of a deflector are between \$50 and \$100, assuming you have a used rubber conveyor belt. The actual cost is dependent on the length and number of deflectors needed. Installation costs are extra, but can be easily accomplished with a small excavator or rubber-tired backhoe.

The water deflector is installed into an excavated trench in the access road so that a minimum of three inches of the rubber belt is exposed above the road surface. (Note: Deflectors are typically installed on seasonal roads. Extra care must be taken if activities such as snowplowing or road grading will occur that could damage the exposed rubber.) The deflector must be installed at a 30-degree down-slope angle to the road in order to ensure that water flows off the road and remains clean.



Water deflectors are installed so that 3 inches of rubber belting extends above the surface of the road.

A rock-stabilized (rip-rap) outfall should be installed at the lower end of the deflector to minimize erosion in the area that receives the diverted water. The spacing of the water deflectors depends on the grade (also called “slope” or “steepness”) of the road. As the grade of the road increases, so does the frequency of water deflectors in the road. (See table below.) Keep in mind that different sections of road can have different slopes.

Grade of Road (%) (slope or steepness)	Water deflector spacing (feet)
2	250
5	135
10	80
15	60
20	45
25	40
30	35
40	30

In terms of maintenance, it is recommended to periodically inspect your water deflectors for damage as well as a buildup of soil behind the deflector. To keep the deflectors working properly, remove any accumulated soil collected against the deflector with a hand shovel every spring and fall.