

# Water Deflectors

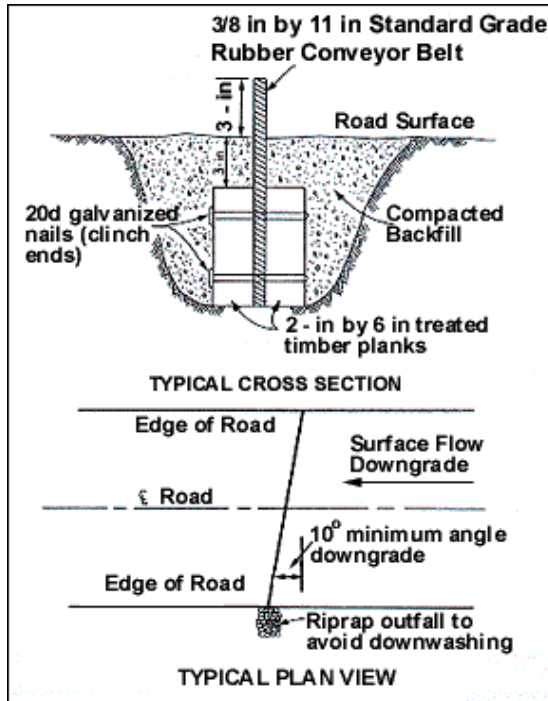
## Managing Surface Water and Reducing Erosion on Unpaved Roads



### More Information

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

Special thanks to Onondaga County Soil & Water Conservation District and the Skaneateles Lake Watershed Agricultural Program for their assistance in creating this brochure.



USDA Forest Service

### Additional Practices to Stabilize Roads

Installing water deflectors is just one of many practices used to reduce erosion and manage surface water on unpaved access roads. Contact your local Soil & Water Conservation District for technical assistance with these other methods:

- Water Boxes · Check Dams
- Broad-based Dips · Rock rip rap
- Box & Pole Culverts · Geotextiles



SOIL AND WATER CONSERVATION SOCIETY



### Contacts

Cornell Cooperative Extension of Onondaga County  
[www.cceonondaga.org](http://www.cceonondaga.org) | 315-424-9485

City of Syracuse Department of Water  
[www.syracuse.ny.us/Water\\_Department.aspx](http://www.syracuse.ny.us/Water_Department.aspx)

Skaneateles Lake Watershed Agricultural Program  
[www.ocswcd.org/slwap.html](http://www.ocswcd.org/slwap.html) | 315-457-0325

Cayuga County Soil & Water Conservation District  
[www.cayugaswcd.org](http://www.cayugaswcd.org) | 315-252-4171

Cortland County Soil & Water Conservation District  
[www.cortlandswcd.org](http://www.cortlandswcd.org) | 607-756-5991

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With changing climate resulting in stronger and more frequent rainfall events, erosion as a result of stormwater is becoming a greater threat to surface water quality. These storms produce excessive amounts of rainwater flowing over land, flooding ditches and washing away unpaved road surfaces, resulting in unwanted deposition of sediments in surface waters. To address this matter, the staff at the Skaneateles Lake Watershed Agricultural Program (SLWAP) are available to install water deflectors on unpaved access roads.



## What is a Water Deflector?

A water deflector is quickly and simply constructed from a length of standard-grade rubber (usually made from a used conveyor belt) that is sandwiched between two treated, wooden 2"x6" planks. Multiple, 4" galvanized screws help to secure the rubber belt between the planks.

## Supplies Needed

- 2"x6" treated lumber planks (two planks per deflector)
- 3/8" thick by 11" wide standard grade rubber, such as a used conveyor belt (length determined by width of road)
- 4" galvanized screws
- 4-6" limestone rip-rap
- Seed and mulch to cover any disturbed areas

*Typical material costs of a deflector are between \$50-\$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 easily be 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. It 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. *NOTE: Deflectors are typically installed on seasonal roads. Extra care must be taken if snowplowing or road grading will occur that could damage the rubber.*



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

A rock-stabilized (rip-rap) outfall should be installed to minimize the erosion in the area that receives the diverted water. The spacing of the water deflectors depends on the grade (slope) of the road. As the grade of the road increases, so does the frequency of water deflectors in the road. (See table below.)

Grade of Road (%) (slope)	Water Deflector Spacing (feet)
5	135
10	80
15	60
20	45
25	40
30	35
40	30

## Benefits of Water Deflectors

- Divert water off unpaved access roads
- Reduces erosion and the formation of rills and gullies
- Allows vehicles and heavy equipment to pass over without interference
- Suitable on unpaved, low maintenance, gravel or earthen roads such as farm access, camp, forest, or seasonal use roads

## Maintenance

It is recommended to periodically inspect water deflectors for damage as well as buildup of soil behind the deflector. In order to keep deflectors working properly, remove accumulated material against the deflector with a hand shovel every spring and fall, or after periods of heavy rain.