

Watershed Agricultural Council



Forestry Water Quality Best Management Practices in the New York City Watershed

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Council, Forestry Program Manager



Background

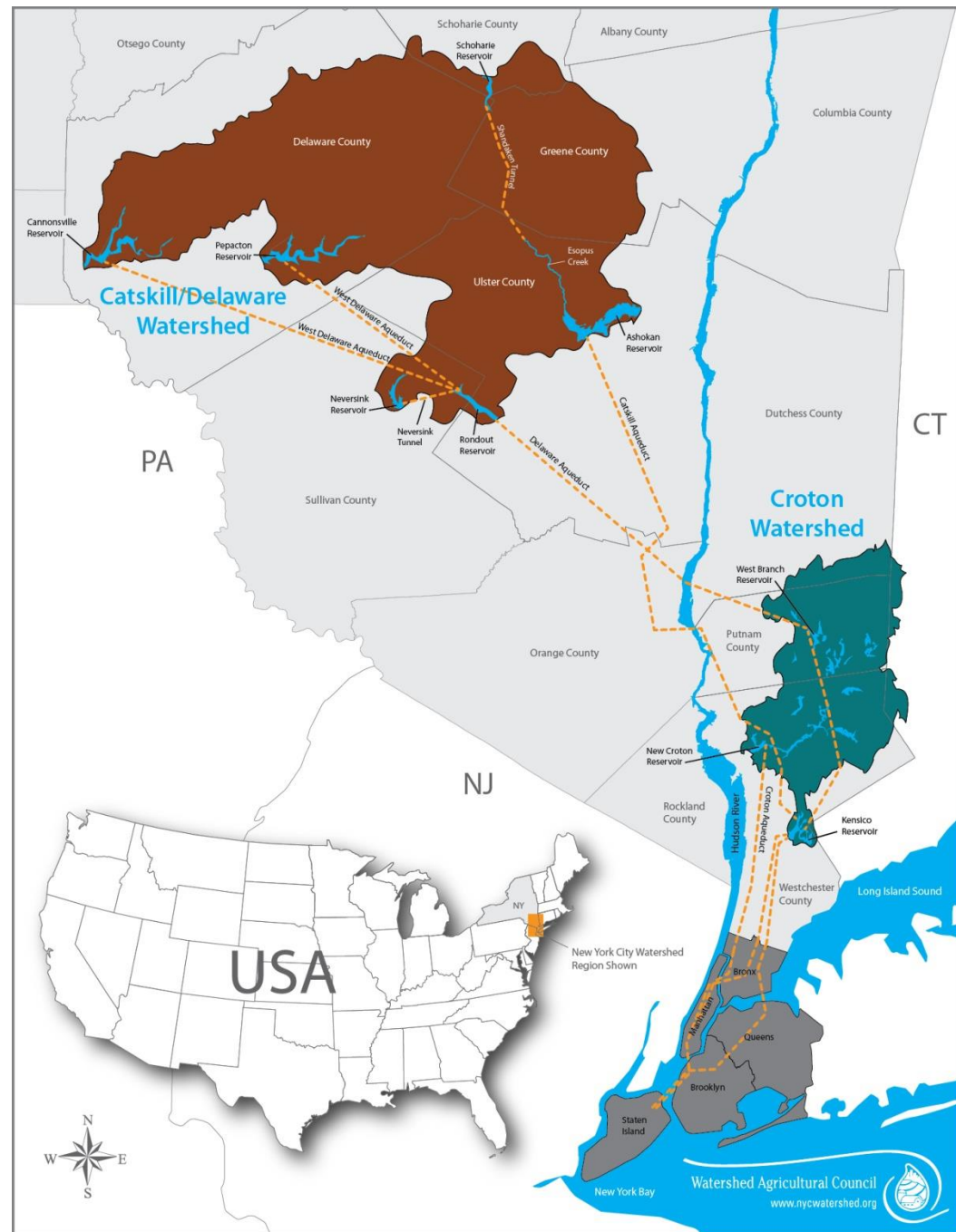
- WAC is a non-government, not-for-profit organization created by citizens, farmers, loggers, saw mill owners and landowners from the New York City watershed in 1995.
- The Safe Drinking Water Act of 1974 (a US federal law) requires public water supplies be free of contaminants and safe to drink.
- In 1990 New York City proposed **laws and regulations** in the Watershed that severely restricted farming and forestry in order to protect their drinking water.

Background

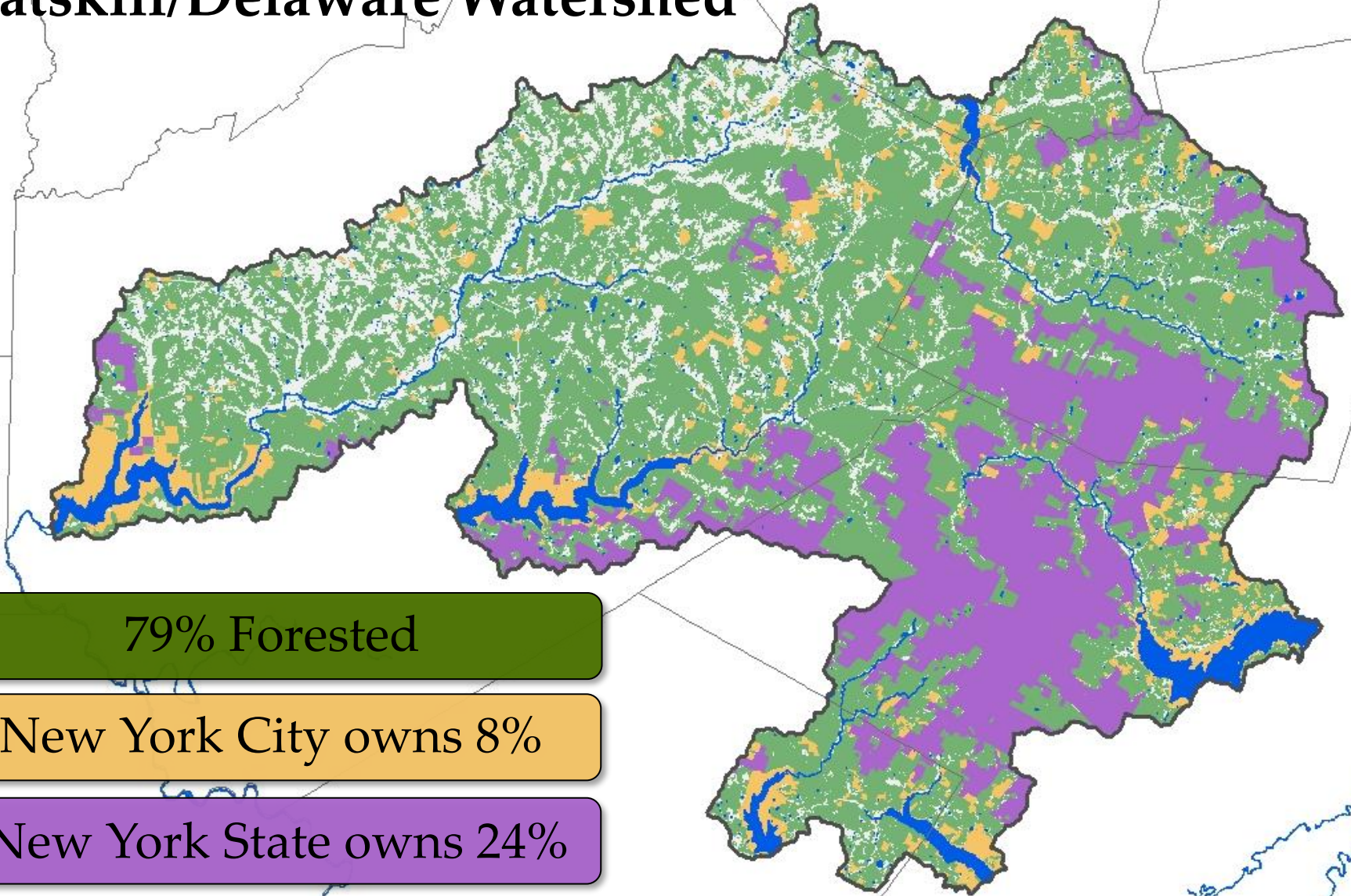
- 1993, the Watershed towns and villages fought New York City in court, forcing them to support the economic viability of the NYC Watershed communities and protect their drinking water through the use of **voluntary** farm and forestry Best Management Practices.
- WAC works with farmers, loggers, foresters and forest landowners to encourage them to **voluntarily** protect New York City's drinking water from contaminants.

The New York City Watershed

- Largest unfiltered municipal water supply in the USA
- 1.2 million acres
- 1 billion gallons/day
- 9 million people



Catskill/Delaware Watershed



79% Forested

New York City owns 8%

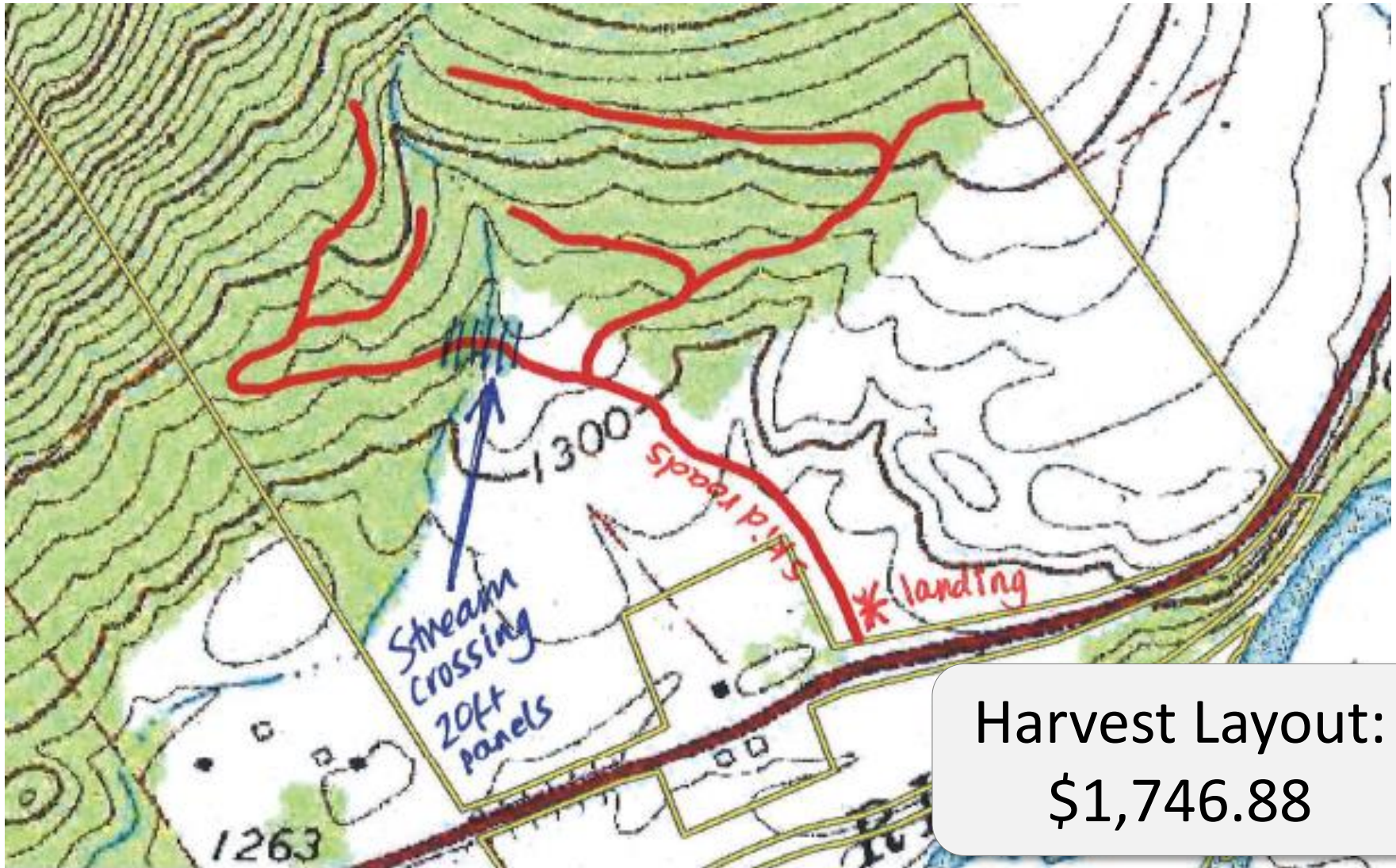
New York State owns 24%

Private people own 68%

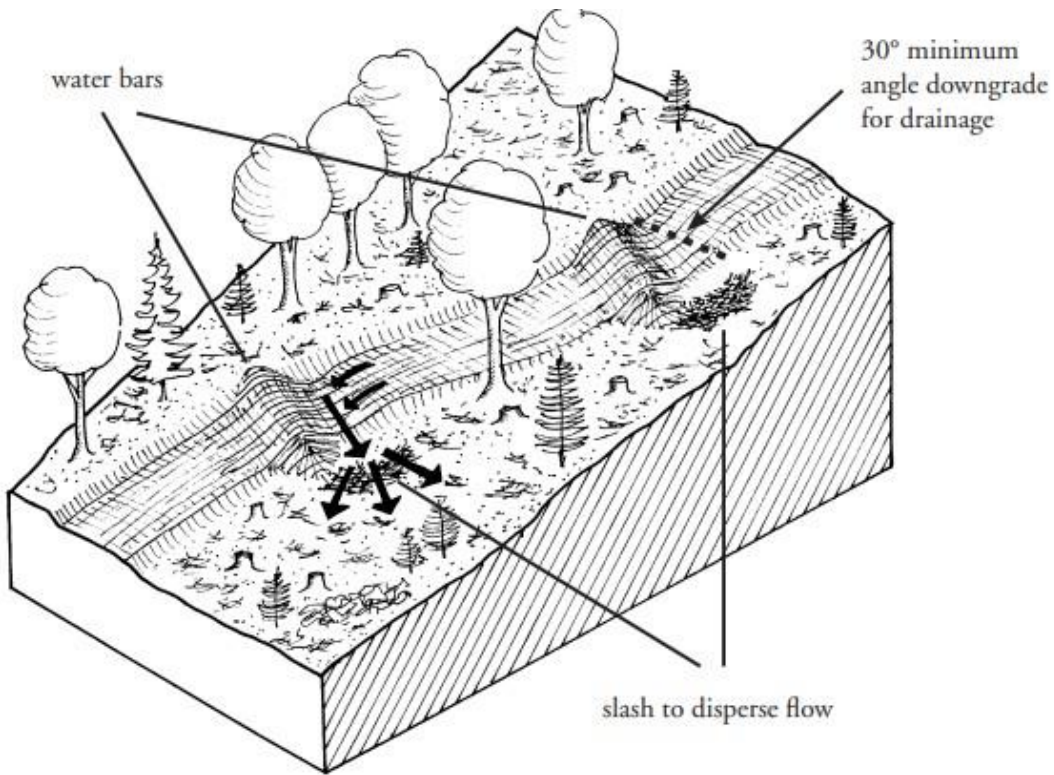
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- An aerial photograph of a forested landscape. The foreground and middle ground are dominated by a dense forest of trees with brown and orange foliage, suggesting an autumn or winter season. A stream or road winds through the forest. In the background, rolling hills and valleys are visible under a clear blue sky. The text is overlaid on the left side of the image.
- Majority hardwood forests with small amount of softwood.
 - Hardwood trees: Maple, Ash, Beech, Birch, Cherry, Oak
 - Softwood trees: White Pine, Red Pine, Norway Spruce, Hemlock
 - 200 harvests each year, covering 7,000 acres
 - 93% of harvested acres are classified as light cuts
 - The average harvest size is 39 acres
 - Less than 5% of harvested acres are within 100 feet of a stream

WAC provides technical assistance and financial incentives to encourage the voluntary use of water quality BMPs by loggers, landowners and foresters.

Proper trail layout minimizes steep slopes, wet soils, erosion and sedimentation



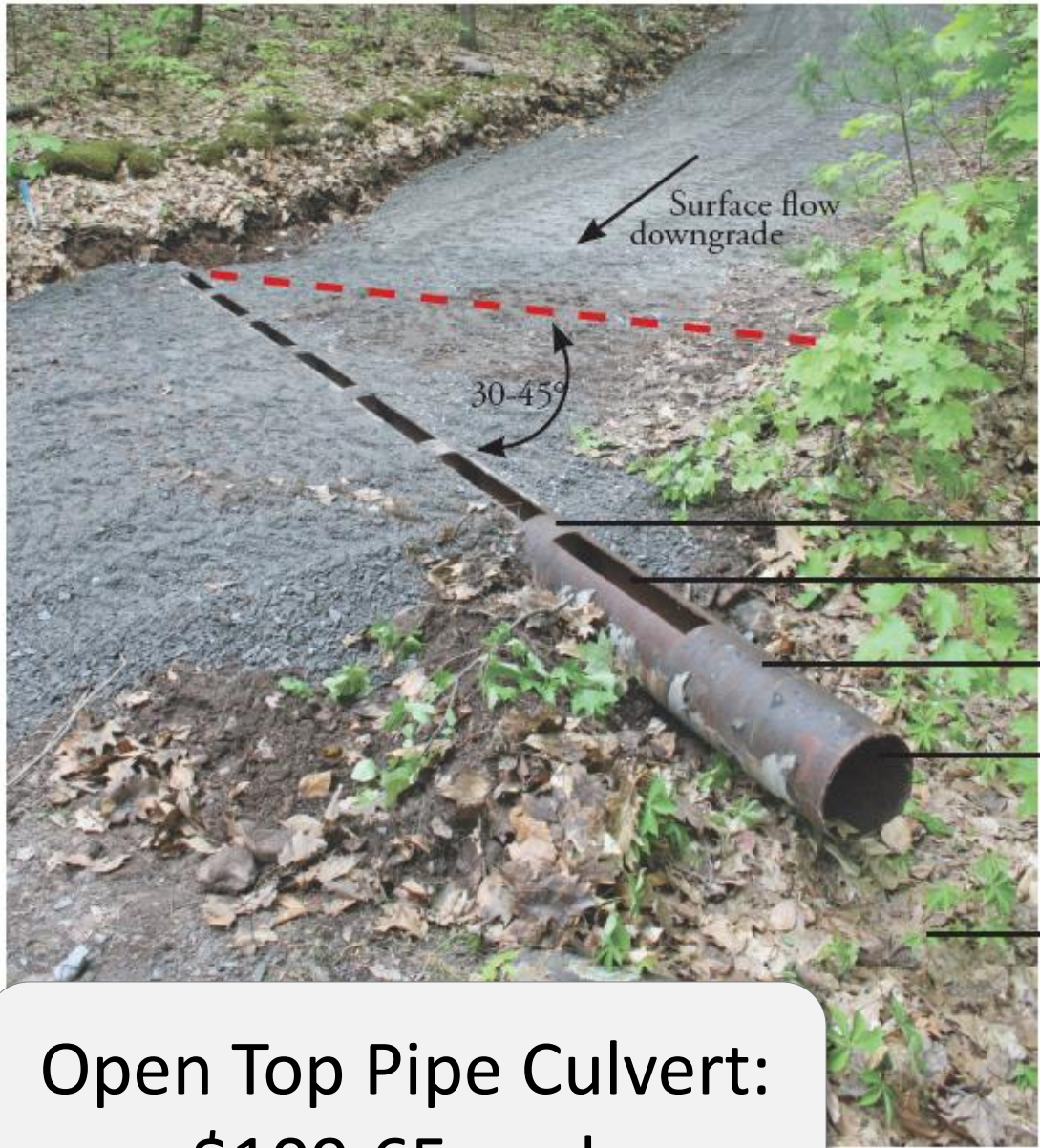
Harvest Layout:
\$1,746.88



Water Bars:
\$31.64 each



Slope (percent)	Spacing (feet)
2	250
5	135
10	80
15	60
20	45
25	35
30	30



**Open-top Culvert
Spacing Guidelines**

Slope (percent)	Spacing (feet)
2-4	300-200
5-7	180-160
8-10	150-140

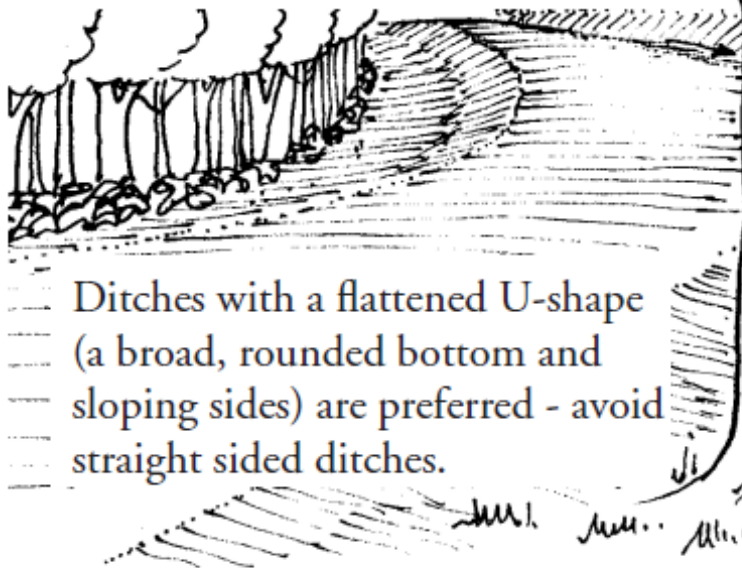
- 6-inch solid
- 24-inch x 3-inch opening
- 18-inch solid (at both ends)
- 8-inch thick-walled pipe
- Rip-rap

**Open Top Pipe Culvert:
\$109.65 each**

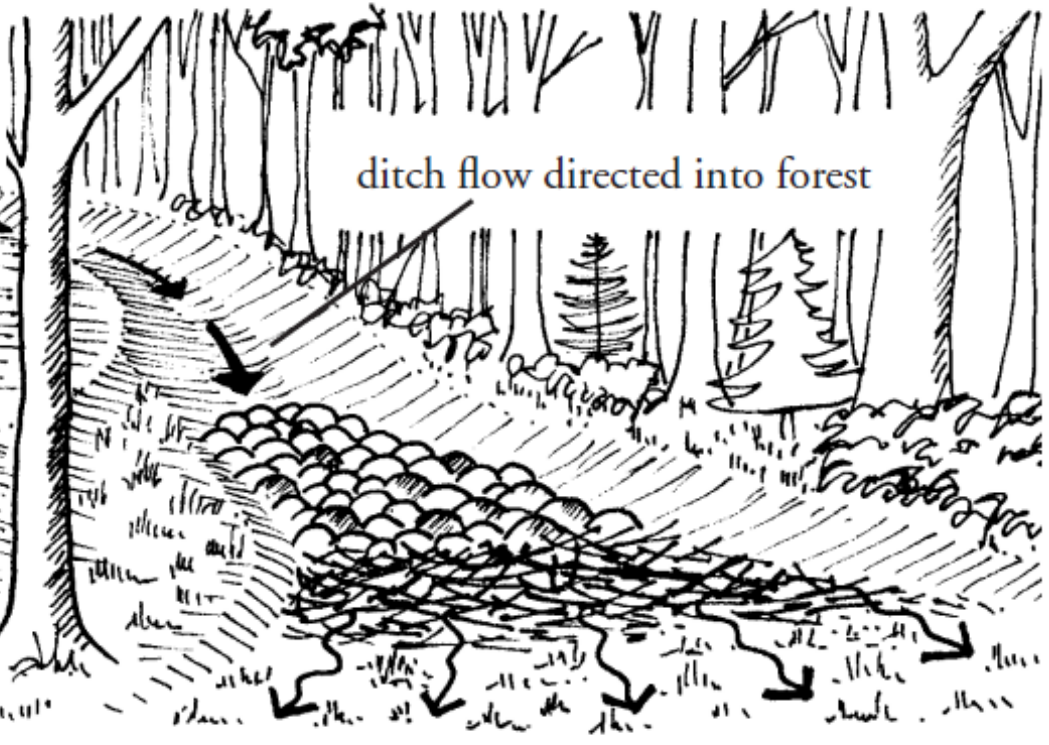
Suggested Spacing for Diversion Ditches

Slope (percent)	Spacing (feet)
0-2	500-300
3-4	250-180
6-10	167-140
11-15	136-140
16-20	126-120
21+	100

Diversion Ditch
\$31.64 each

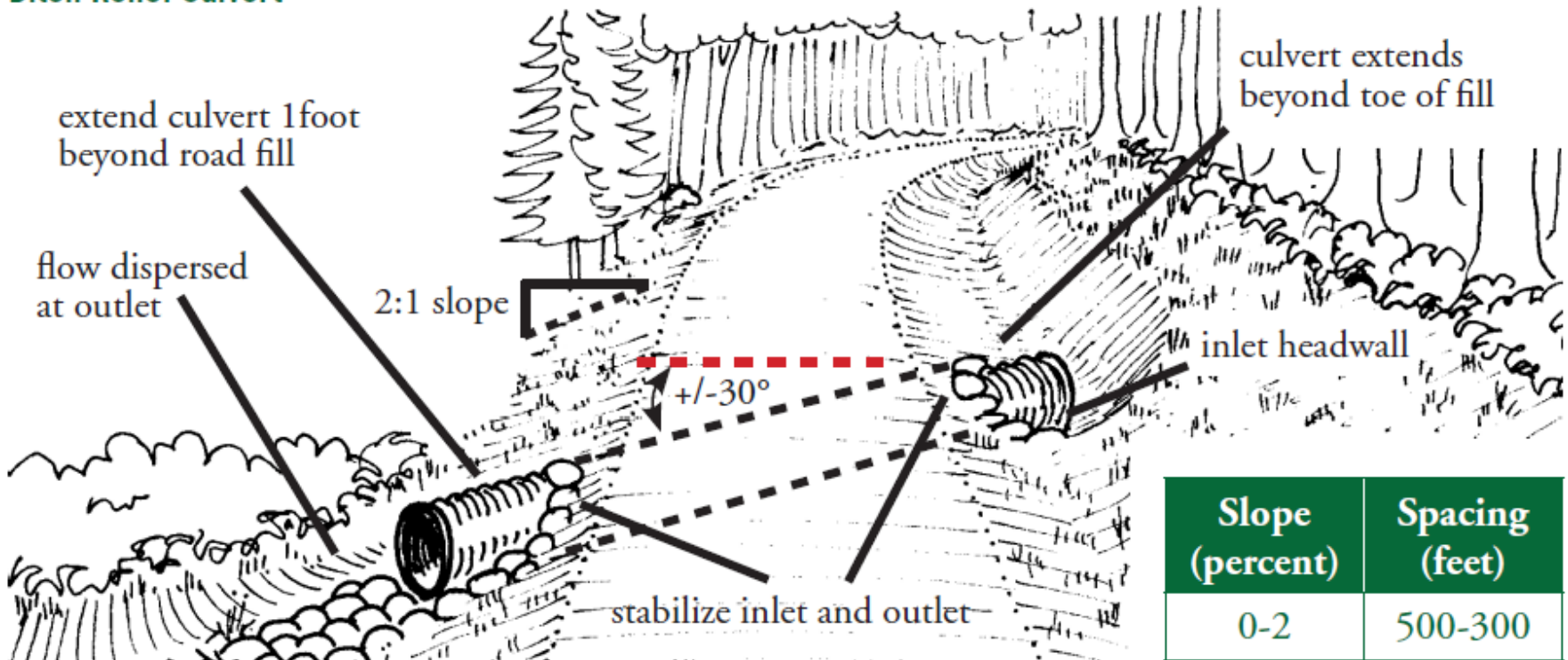


Ditches with a flattened U-shape (a broad, rounded bottom and sloping sides) are preferred - avoid straight sided ditches.



flow dispersed at outlet with rock and/or slash

Ditch Relief Culvert



Slope (percent)	Spacing (feet)
0-2	500-300
3-4	250-180
6-10	167-140
11-15	136-140
16-20	126-120
21+	100

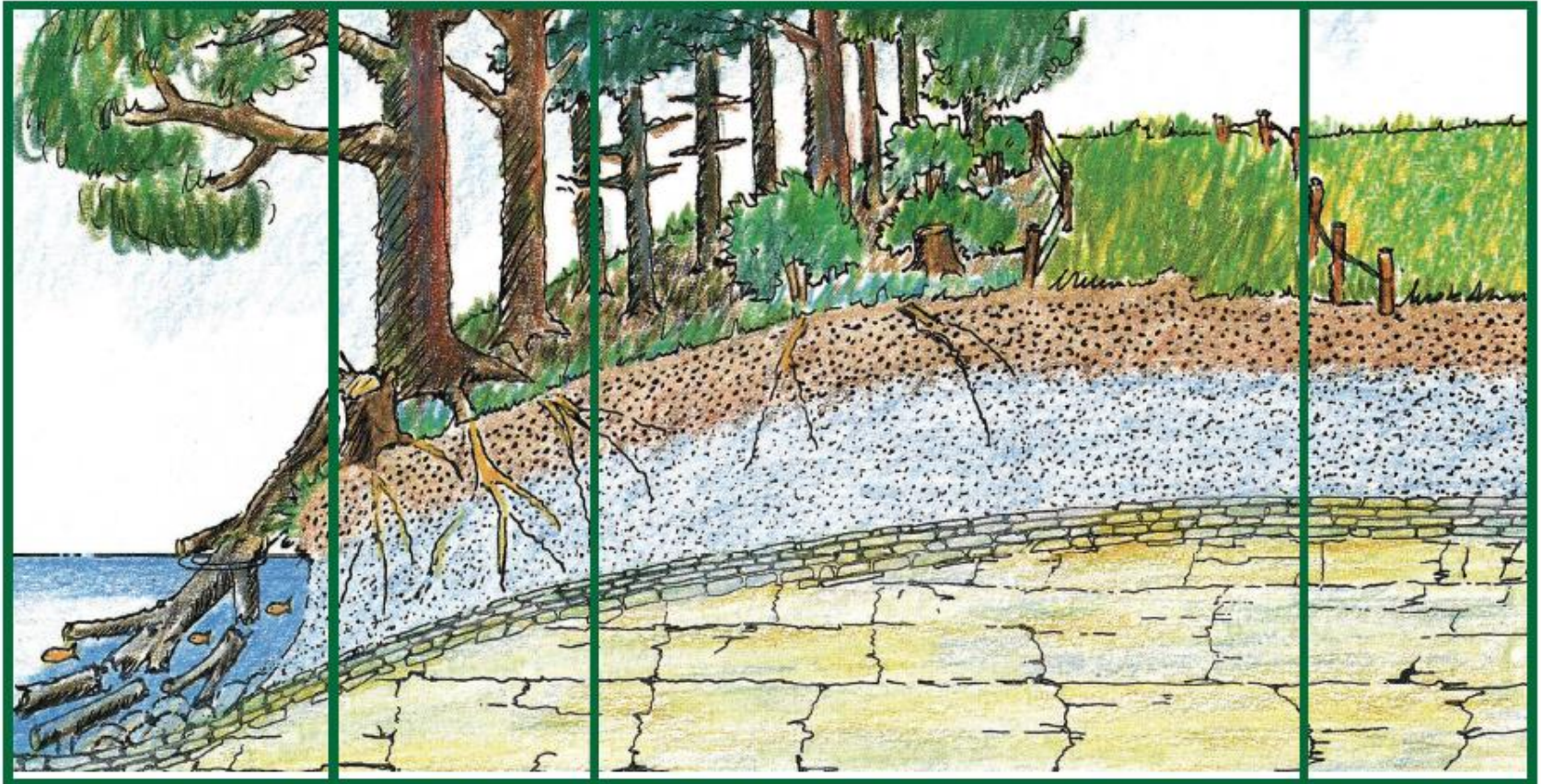
Ditch Relief Culvert
\$227.70 each

Suggested Spacing for
Ditch Relief Culverts

Re-grade Skid Trails
\$0.10 per foot



Encourage the use of buffers to prevent runoff from entering streams

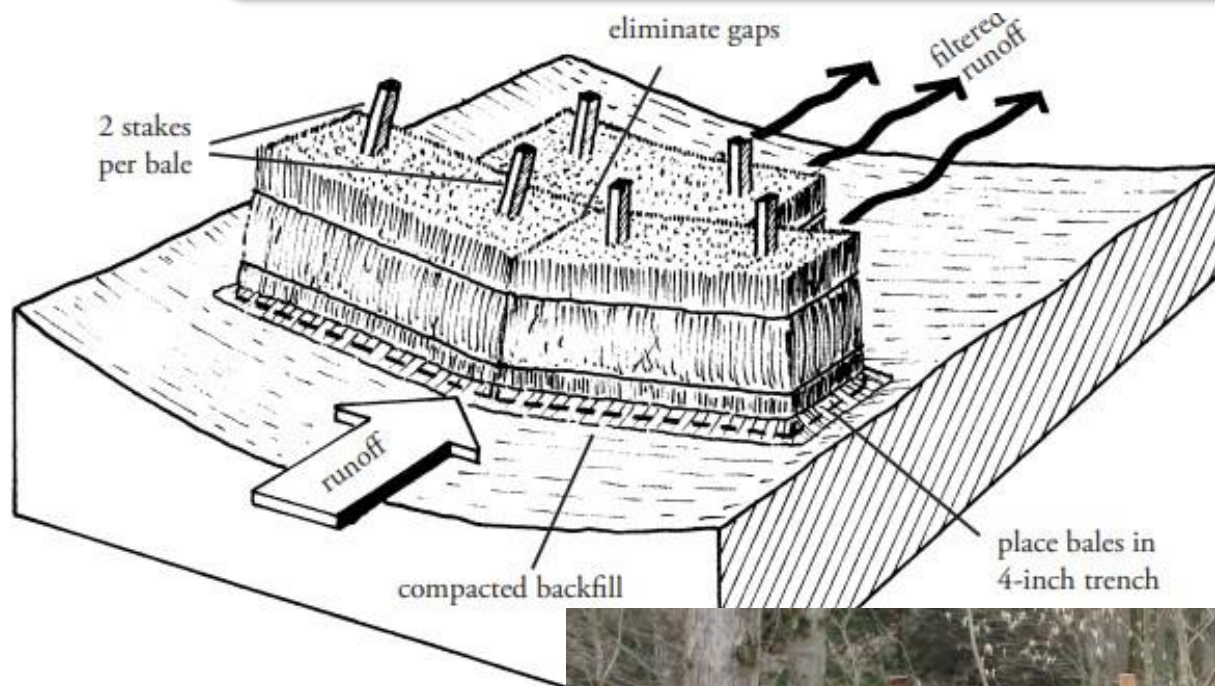


Stream, Wetland
or Water body

Zone 1
(15 feet)

Zone 2
(variable width see chart on page 34)

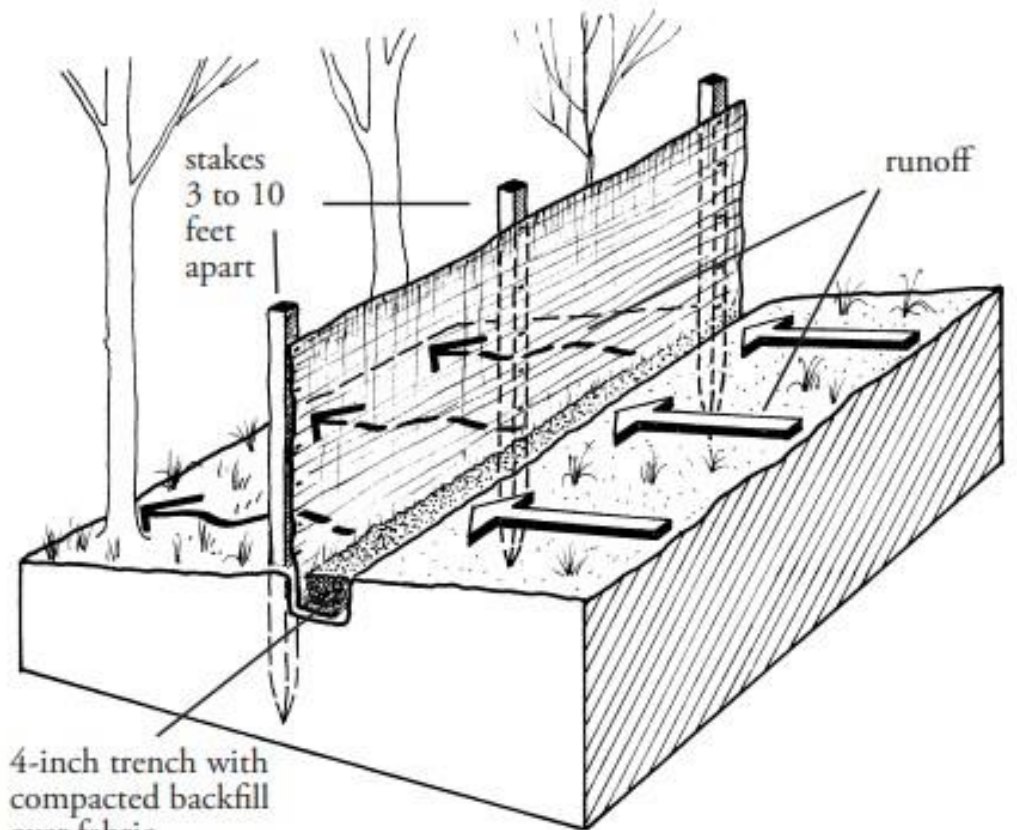
Filter runoff that enters stream buffers

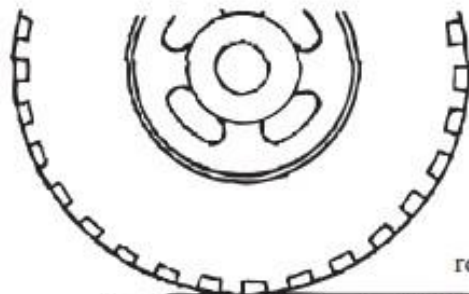


Straw Bales:
Free

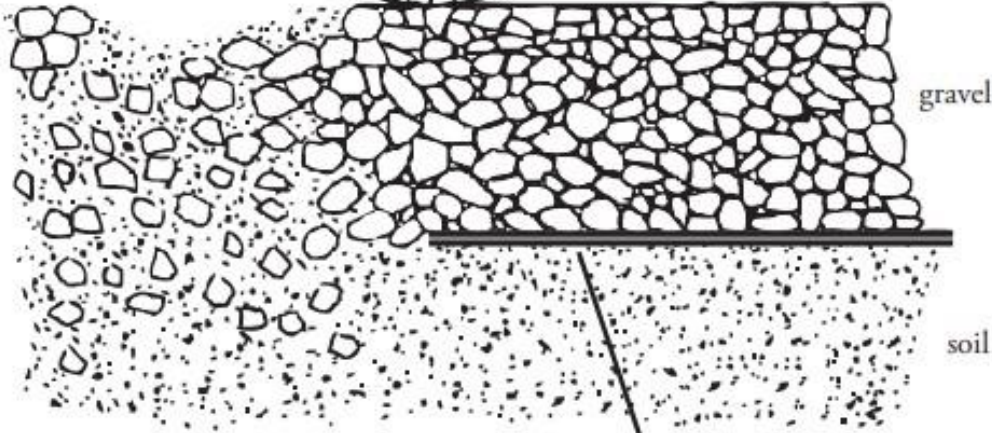


Silt Fence: Free





road surface



gravel

soil

without geotextile

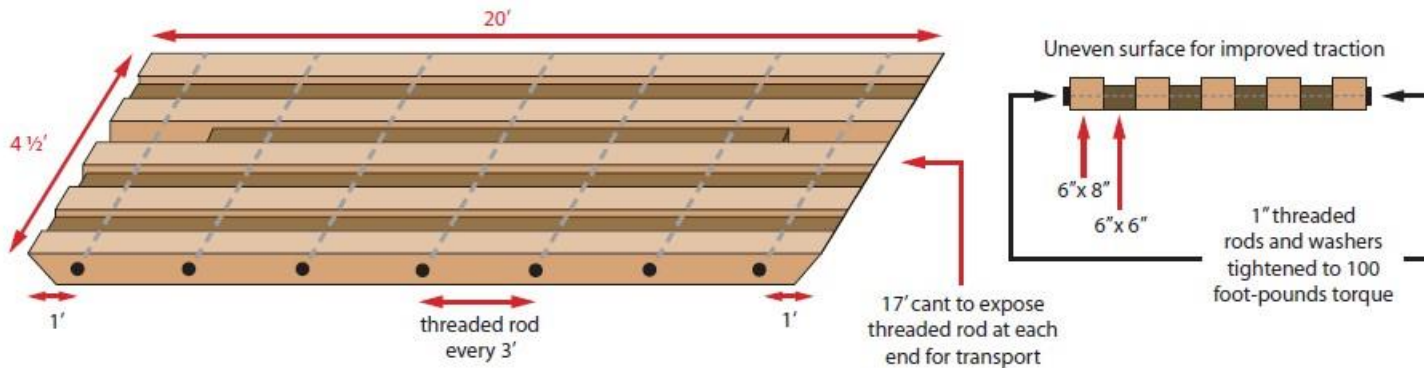
with geotextile

Geotextile Fabric:
\$1.26 per Foot

Gravel:
\$12.66 per cubic yard



Encourage the use of portable skidder bridges



\$1,265.70 to build their own 20 foot bridge.

Loggers and foresters can borrow a bridge that WAC owns, for free.



Transport and install a bridge: \$1,423.92



Successfully implement a stream crossing plan:
\$3,797.09

Summary

- 25% of harvests each year receive technical support and financial assistance from WAC to implement BMPs.
- 40% of the acreage harvested each year receives technical support and financial assistance from WAC to implement BMPs.
- On average, loggers received \$5,832.35 to implement voluntary BMPs on a harvest in the New York City Watershed in 2022.

Questions?

The Watershed Agricultural Council is funded in part by:



along with other federal, foundation and private sources.
The WAC is an equal opportunity employer and provider.
For more information about WAC, please visit our website: www.nycwatershed.org