



# Chagrin River Watershed Partners, Inc.

P.O. Box 229 Willoughby, Ohio 44096-0229 Phone: 440.975.3870 www.crwp.org

## Roadside Ditch Stabilization Best Management Practice

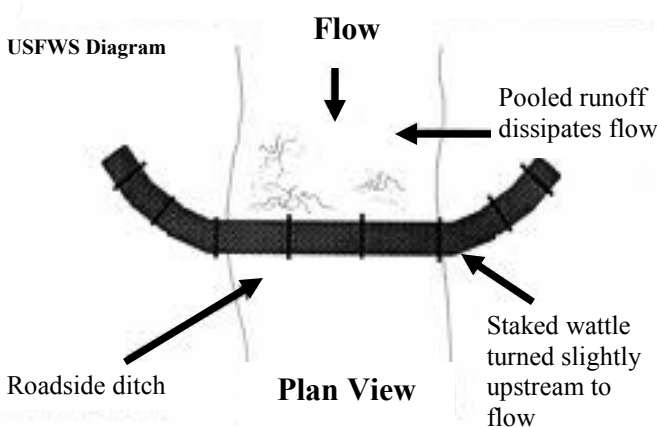
Sediment continues to be the #1 pollutant by volume in Ohio's streams and rivers. Unvegetated roadside ditch side slopes and bottoms contribute tons of sediment annually to local receiving streams. Most erosion occurs during large storm events that produce high flows within roadside ditches. Check dams are a proven best management practice (BMP) that decrease runoff velocity and reduce erosion within roadside ditches. Straw wattles are an easily installed alternative BMP to rock check dams for velocity dissipation and sediment control.

## Straw Wattles Alternative to Rock Check Dams

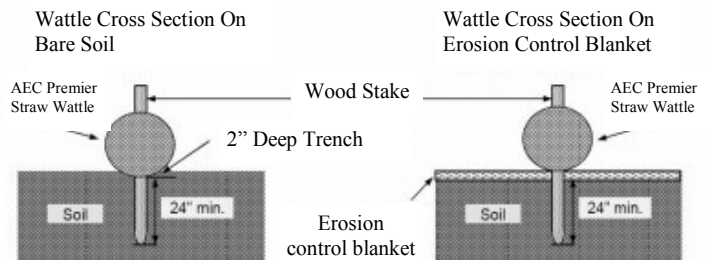


- ◆ Tube-shaped erosion control devices filled with straw, flax, coconut fiber or composted material wrapped in UV-degradable polypropylene netting or 100% biodegradable material like burlap or jute.
- ◆ Available in 9-inch or 12-inch diameter rolls of 25 feet and 10 feet, respectively. Wattles can be shaped to fit any ditch cross-section and maintain centerline flow.
- ◆ Reduce sediment loads to receiving waters by dissipating erosive flows, filtering runoff and capturing sediments.
- ◆ Wattles are designed for surface flows 1 cubic foot per second or less and for slopes less than 10%.

### STRAW WATTLE STRUCTURE



Detail provided by American Excelsior Company  
Premier Straw Wattle



#### Notes:

1. Ends of wattles shall be turned slightly up slope, against flow
2. Ends shall extend minimum of 6 inches above top of wattle at centerline overflow

Best management practice development was funded in part through the Lake Erie Protection Fund, administered by the Ohio Lake Erie Commission. The LEPF is supported by the voluntary contribution of Ohioans who purchase the "Erie...Our Great Lake" license plate, featuring the Marblehead or Toledo Harbor Lighthouse.



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### Straw Wattle Advantages

- ◆ Easily and quickly installed without equipment or deep trenching
- ◆ Readily shaped to fit typical roadside ditch cross-sections
- ◆ Lightweight for ease of transport and field handling
- ◆ Wattles do not obstruct hydraulic mulch or seed application
- ◆ Wattles can be removed or left in place after vegetation is permanently established
- ◆ Wattles are a cost effective alternative to rock check dams



**BMP Tip: Silt fence is not designed or accepted as an effective check dam practice and should not be used to treat concentrated flow, particularly in roadside ditches. Straw bales also make poor check dams due to their inflexible rectangular shape within roadside ditches.**

### Roadside Ditch Stabilization Demonstration Site Product Application Costs

#### Morley Road Demonstration Site - Concord Township, Lake County

The Morley Road demonstration ditch maintenance site included an 800 linear foot section of excavated ditch. A Gradall equipped with a smooth bucket excavated an average width of 10 feet totaling 8,000 square feet of disturbed treatment area. American Excelsior Company Premier Straw Wattles were installed at the proper spacing perpendicular to flow within the ditch. Wattle length varied based on specific cross-section locations and each wattle was trenched a minimum of 2 inches with spoils tamped on the downstream side of the wattle with each wattle receiving four 30-inch long wooden stakes driven through the center of the wattle; 2 stakes within the center of the ditch line and one stake on each end of the wattle.

Straw Wattle (9-inch Diameter) - Application Rate: 60 foot spacing for 3% slope recommended

Product Cost: \$1.38 per linear foot of wattle

BMP material investment to treat 800 linear feet of ditch line with 3% slope: \$132.48

Straw wattles installed at the Morley Road demonstration site operated as effective check dams from November 2011 through May 2012 providing velocity control and sediment capture.

For more details on project demonstration sites and results go to:  
[http://www.crowp.org/Projects/roadside\\_ditch\\_sediment\\_control.htm](http://www.crowp.org/Projects/roadside_ditch_sediment_control.htm)