



## 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

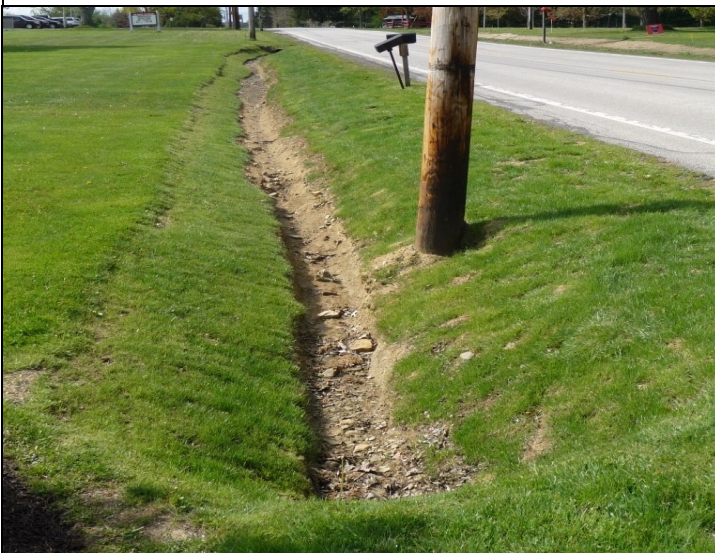
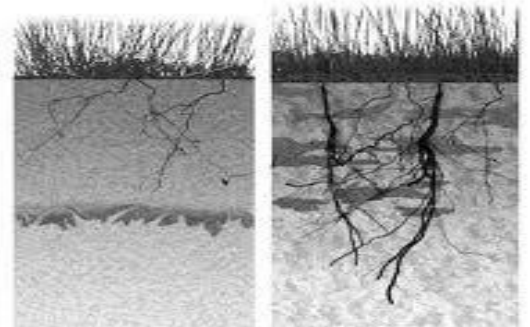
Roadside ditches collect a wide range of pollutants from fecal coliform bacteria to petroleum hydrocarbons to heavy metals from roads, parking lots and construction sites. Unvegetated roadside ditches erode and are sources of sediment. Pollutants attach themselves to sediments and are transported throughout the watershed, degrading the water quality of receiving streams, rivers and ultimately Lake Erie. Roadway departments, challenged by the need to control flooding and provide for motorist safety, are often confronted with how to best stabilize exposed soils within roadside ditches in a cost effective manner following dredging maintenance. Innovative additives to traditional hydro seeding applications such as biostimulants can greatly enhance erosion control protection by shortening the germination time and increasing yields on applied seed. Check dams and erosion control matting are still necessary best management practices to protect ditch bottoms from erosive high flows.

## Biostimulants

### For Hydro Seed Enhancement

- ◆ Accelerate germination rate by 60%
- ◆ Increase yields up to 99%
- ◆ Provide micro-nutrients and enzymes for rapid root anchoring and top growth
- ◆ Reduce plant stress by allowing water to infiltrate into the root zone where it is available for plant uptake
- ◆ Mixed into hydro mulch slurry and applied with hydro

Enhanced root growth



*Biostimulant applied to back slope and fore slope enhanced germination of standard ODOT Roadside Seed Mix and provided establishment of dense vegetation*



*Standard hydro mulch application without biostimulant resulted in poor germination and rill erosion of the back slope*

Best management practice demonstration and training 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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### Biostimulant Advantages

- ◆ Encapsulates the seed, enhancing the seed's ability to transfer both moisture and nutrients from the soil for accelerated and uniform growth
- ◆ Enhanced water retention capabilities decrease the amount of watering required for continued growth beyond initial watering or precipitation event
- ◆ Ensures rapid, full hydro seed establishment while improving uniform placement and even wetting of the application of seed
- ◆ Reduces repellency of mulches, hydro seeding mix and soil
- ◆ Improves soil infiltration and hydration, providing long-term moisture to root system

Biostimulant additives can be either synthetic compounds or naturally occurring organic materials like humic acid, seaweed extract or fish emulsion. Naturally occurring biostimulants such as seaweed extract contain hormones, vitamins, amino acids and mineral nutrients that naturally stimulate germination and growth.



*October 2011, Application of biostimulant additive with hydro mulch and ODOT Roadside Seed Mix*

*June 2012, Protection of roadside ditch soils over 8 month period with complete vegetation establishment in spring*

### Roadside Ditch Stabilization Demonstration Site Product Application Costs

#### **Bass Lake Road Demonstration Site - Munson Township, Geauga County**

7,000 square feet of disturbed treatment area excavated with a Gradall smooth bucket.

Biostimulant Additive: Seasafe Hydro-Ultra Plus

Seasafe Hydro-Ultra Plus - Application Rate: 5 gallons per acre recommended

Product Cost: \$38.22 per gallon, \$0.004 per square foot of treatment

BMP biostimulant additive investment to effectively treat hydro seeding application: \$30.70.

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

8,000 square feet of disturbed treatment area excavated with a Gradall smooth bucket.

Biostimulant Additive: Quick Stand

Quick Stand - Application Rate: 5 gallons per acre recommended

Product Cost: \$35.00 per gallon, \$0.004 per square foot of treatment

BMP biostimulant additive investment to effectively treat hydro seeding application: \$32.62

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