

# Great Lakes Basin Program GLRI Project

## Tiffin River Waterways

**Size:** small scale  
**Grant Amount:** \$28,246  
**Year awarded:** 2012

**Sponsor:** Fulton SWCD  
**Address:** 8770 State Route 108  
**Address:** Suite B  
**City:** Wauseon  
**State:** OH  
**Zip:** 43567

**Contact Information:** Project Manager, Pete Carr  
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### Submitted Project:

Size: smallscale  
Budget: \$28,246  
Savings: 8,140

### Background

#### Sediment Sources

The problem is 8146 tons of soils are filling into the Tiffin River due to 5200 ft. of older, failing grassed waterways. There is no financial assistance through Farm Bill funding. The goal of this project is to save soil by installing four grassed waterways totaling 5200 feet. These four waterways are currently delivering sediment directly to the Tiffin River. Total soil savings will be 814 tons per acre per year, 8140 tons per acre for the life of the grassed waterways.

#### Readiness to Implement Project

This project's watershed consists of 80% cropland, and highly erodible slopes (4-8%) have caused high sediment loading due to clay particles suspended in runoff. An example of a typical soil loss from a waterway 1300' long eroding a gully six feet wide two feet deep equals 575 tons of soil lost in one year. The problem is occurring on our 20-year and older eight grassed waterways, through runoff-induced gully erosion. The waterways are failing because they have exceeded their useful life, and due to runoff, large gullies are forming down the center and along the side of these waterways, loading the Tiffin River and its tributaries with phosphorus laden sediment. This problem has been occurring for 20 years. The Tiffin River watershed has been recognized as an impaired watershed area during the last 23 years. This watershed was selected by the Watershed Protection and Flood prevention Act (Public Law 566) to receive funding for restoration practices in the late 1980s. Assuming the direct correlation between the damages caused by the sediment deposition and the sediment contribution by the Tiffin River watershed, it is estimated that the annual dredging cost located at the Toledo Harbor and Maumee Bay attributed to the Tiffin watershed is approximately \$1.5 million. Sediment

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and associated contaminants that leave the field and enter a grassed waterway may cause a wide variety of offsite damages.

### **Project Work Area**

HUC: 041000060203 - Old Bean Creek, Ohio

Total Area: 215040

Agricultural Area: 185000

Forest Area: 19400

Urban Area: 10640

### **Priority Areas:**

This project's watershed consists of 80% cropland, and highly erodible slopes (4-8%) have caused high sediment loading due to clay particles suspended in runoff. An example of a typical soil loss from a waterway 1300' long eroding a gully six feet wide two feet deep equals 575 tons of soil lost in one year. The problem is occurring on our 20-year and older eight grassed waterways, through runoff-induced gully erosion. The waterways are failing because they have exceeded their useful life, and due to runoff, large gullies are forming down the center and along the side of these waterways, loading the Tiffin River and its tributaries with phosphorus laden sediment. This problem has been occurring for 20 years. The Tiffin River watershed has been recognized as an impaired watershed area during the last 24 years. This watershed was selected by the Watershed Protection and Flood prevention Act (Public Law 566) to receive funding for restoration practices in the late 1980s. Assuming the direct correlation between the damages caused by the sediment deposition and the sediment contribution by the Tiffin River watershed, it is estimated that the annual dredging cost located at the Toledo Harbor and Maumee Bay attributed to the Tiffin watershed is approximately \$1.5 million. Sediment and associated contaminants that leave the field and enter a grassed waterway may cause a wide variety of offsite damages.

### **Implementation**

#### **Implementation Strategy**

The Fulton Soil and Water Conservation District (Fulton SWCD) and Natural Resource Conservation Service (NRCS) will select four existing grassed waterways in the Tiffin River Watershed and re-construct them. These grassed waterways will be graded and shaped to form a smooth trapezoidal-shaped channel. This area will be seeded to a sod forming grass. The grasses include Ryegrass, Bluegrass, and Red Fescue. This will allow runoff water that flows down the drainage way to flow across the grass rather than tearing away soil and forming a larger gully. These grassed waterways protect drainage ways from gully erosion and act as a filter absorbing some of the chemicals and nutrients in runoff water.

The goal of this project will be to secure funding for four landowners in Fulton County that need waterway reconstruction. The main goal of the Fulton SWCD is to use some new innovative features including rock checks and filter fabric checks for the grassed waterways. The rock checks will consist of an erosion resistant lining of crushed limestone aggregate ODOT Number 1 stone. The width will be 12"-24" wide x 2/3 the width of the designed waterway. Finished rock surface will be flush with the constructed waterway grade. These rock checks will be located at grade changes and steep slopes. Another new innovative feature will be to use sod at the top, middle, and bottom end of the grassed waterway. This sod will meet the retardance requirements until vegetation is established, preventing erosion.

Another plan is to use straw erosion control re-vegetation blankets. This product is a light weight design, bonds to the soil, degrades completely, and accelerates germination. The seed germination rate is 15-90% higher using the blanket. This blanket absorbs more moisture, protects seed, is visually appealing, provides superior germination, molds to the contour of the soil, and grows turf that is ready to mow in four weeks. These ideas

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mentioned can be used on public official tours and future educational tours for other districts and contractors. The timetable for this waterway project will be immediately after funding is received, and will have a two year project duration. Once the grassed waterway is surveyed this fall and winter, construction can take place April 1-May 31, 2013, and again August 1-September 30, 2013 and conclude April 1-May 31, 2014. As with all of our engineering practices we take several photographs and invite the local newspaper to do a featured article (see attached).

Soil savings goal will be base on a 1300' long with a top width of 6' average, bottom width of 4' average, a depth of 2' average. This calculates out to 611.00 volume (tons) over 3 years = 203.66 tons; 203.66 x 4 acres = 814 tons x 10 years life of the grassed waterways = 8140 tons (soil savings goal).

### Technical Assistance

Salaries – \$3000.00  
Pete Carr - \$2400.00  
Kim Bowles - \$600.00

Consultant/Contracting – Fulton County Contractors to construct 6 grassed waterways at 75% cost-share. Cost used for each waterway from the 2011 Ohio State Average Cost List – 412 Grassed Waterway, no tile \$6311.85 per acre x 5 acres = \$31,559.25 x 75% = \$23669.43. The remaining 25% of the cost of the waterways' construction cost will be provided by each individual landowner who is constructing the waterway, \$7889.81.

Pete Carr, District Technician, engineer for the project, 27 years' experience at surveying, designing, installing, and specification check waterway projects.

Kim Bowles, District Administrator, 25 years' experience at providing administrative support to write proposals, assist both internal and external customers, make phone calls, download and provide before and after pictures of projects.

USDA-NRCS – Will provide technical guidance and authority according to the USDA Standards and Specifications.

Fulton County Contractors – Will provide the actual earthmoving, grading, seeding and mulching of grassed waterways.

### BMPs

Name: Grassed Waterways  
Type: Engineering Practices  
Acres: 4  
Cost: 25247.40

### Description:

Fulton County Contractors to construct 6 grassed waterways at 75% cost-share. Cost used for each waterway from the 2011 Ohio State Average Cost List – 412 Grassed Waterway, no tile \$6311.85 per acre x 4 acres = \$25247.40 x 75% = \$18935.55. The remaining 25% of the cost of the waterways' construction cost will be provided by each individual landowner who is constructing the waterway, \$6311.80.

Start Date: April 2013  
End Date: April 2014  
Incentive Method: cost-share  
Incentive Rates: 75%

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Total Soil Savings: 8140

## **Media Campaign**

### Kickoff:

We will invite our members of congress to view these in progress reconstruction of waterways.

### Ongoing:

We take several photographs and invite the local newspaper to do a featured article.

### End:

We will have a public official's tour in August of 2013. This will be one of the stops along the tour.

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