2013 - Targeted Drainage Water Management - Greater Blue Earth River Basin Alliance (JPB)

Fund Type	Source	Spent
Grant	Admin	$8,500.00
	Technical	$25,500.00
	Tours	$4,000.00
	Cost-Share	$132,000.00
	Total	**$170,000.00**
Match	Local Fund	$13,425.00
	Landowner	$13,093.23
	Federal	$157,727.15
	Total	**$184,245.38**
TOTAL		$**354,245.38**

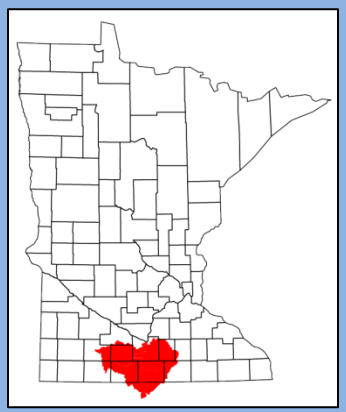
Targeted Water:
Greater Blue Earth River Basin
~Blue Earth River Watershed
~Le Sueur River Watershed
~Watonwan River Watershed

Project Sponsor:
Greater Blue Earth River Basin Alliance

Grant Period:
July 2012 through December 2016

Project Contact:
Greater Blue Earth River Basin Alliance
Kay Gross: Administrative Coordinator
Dave Bucklin: Technical Coordinator
Kathy Smith: Financial Coordinator

Project Location:



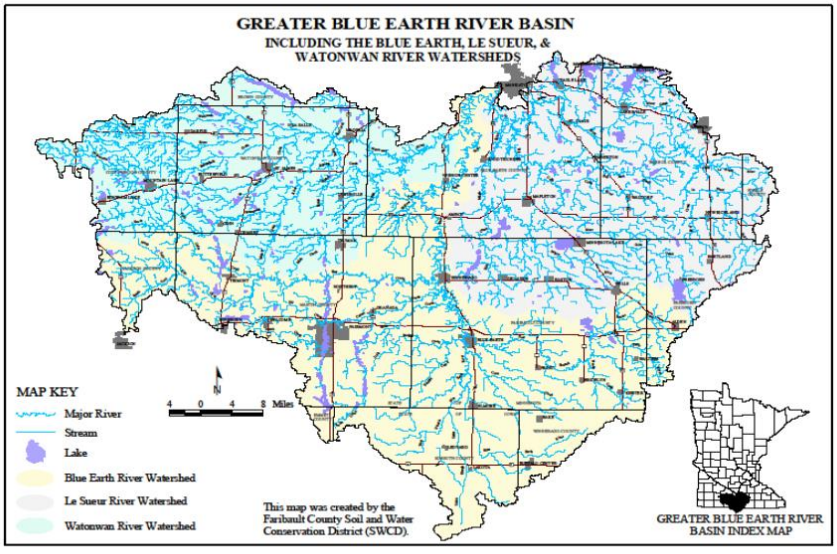
Project Narrative

Rivers, streams, and open drainage ditches reach to every corner of the Greater Blue Earth River Basin. This extensive channel network sheds the landscape of rainwater and snowmelt. This network is not limited to what one can see with the naked eye. Miles upon miles of subsurface drainage tile under several feet of soil significantly extends the drainage network, ridding the soil of excess moisture. This expansive system of pipes is crucial for corn and soybean growth and can reduce surface water erosion, but it can also increase total annual runoff volume and pollution delivery (e.g. nitrates, soluble phosphorus, pesticides, pathogens).

The purpose of this grant was to implement and inform the public on conservation practices that reduce the impact of subsurface tile drainage on surface water resources. Practices implemented fall into 5 main categories:

1. Drainage Water Management Plan
2. Controlled Subsurface Drainage
3. Denitrifying Bioreactor
4. Alternative Tile Inlets
5. Nutrient Management Plan

In addition to implementing conservation drainage best management practices, two outreach events were planned in order to showcase conservation practices and disseminate the science behind their design and functionality.



Actual Results

A variety of practices were installed that help stop sediment and nutrients from reaching water resources (Table 1). Practices such as alternative tile intakes trap sediment and nutrients from entering tile lines and practices like denitrifying bioreactors remove nutrients already in tile lines (Table 2). Two field days were also coordinated to give conservation professionals and landowners an opportunity to visualize these BMPs in practice. This grant provided a great opportunity to partner with local county drainage staffs in an attempt to better understand how resources can be pooled to better delivery conservation on public and private drainage systems.

Table 1. Practices Implemented

Best Management Practice	Unit	Amount
Denitrifying Bioreactor	Count	12
Alternative Tile Inlet	Count	19
Structure for Water Control	Count	5
Wetland Restoration	Acres	0.7
Drainage Water Management	Count	1

Table 2. Pollution Reduction Estimates

Indicator Name	Reductions
Nitrogen (LBS/YR)	2377.03
Phosphorus (Est. Reduction) (LBS/YR)	20.98
Prevention (COUNT)	5.00
Sediment (Tss) (TONS/YR)	4.55
Soil (Est. Savings) (TONS/YR)	4.51

Below: A series of 3 bioreactors (left) help to treat the subsurface tile drainage from County Ditch 62 in Faribault County. Conservation professionals and landowners (right) gather around an excavated bioreactor near Fish Lake in Jackson County to observe and learn how it functions.

Denitrifying bioreactors (far left) and structures for water control (left) are generally installed at the edge of the field and have a relatively small footprint. These characteristics limit the impact on crop productivity and in-field crop production operations.