2013 - Clean Water Assistance Grant - Greater Blue Earth River Basin Alliance (JPB)

Final Project Budget

Fund Type	Source	Spent
Grant	Admin.	$21,250.00
	Technical	$53,111.23
	Proj Develop.	$10,638.77
	Cost-Share	$340,000.00
	Total	**$425,000.00**
Match	Local Fund	168,053.54
	Landowner	$64,793.85
	Federal	$113,604.77
	Total	**$346,452.16**
TOTAL		**$771,452.16**

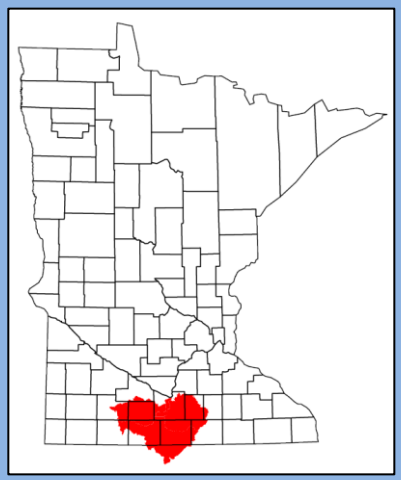
Targeted Waters:
Le Sueur River Watershed
Blue Earth River Watershed
Watonwan River Watershed

Project Sponsor:
Greater Blue Earth River Basin Alliance

Grant Period:
January 2014 through December 2016

Project Contact:
Kay Gross, GBERBA Coordinator

Project Location:



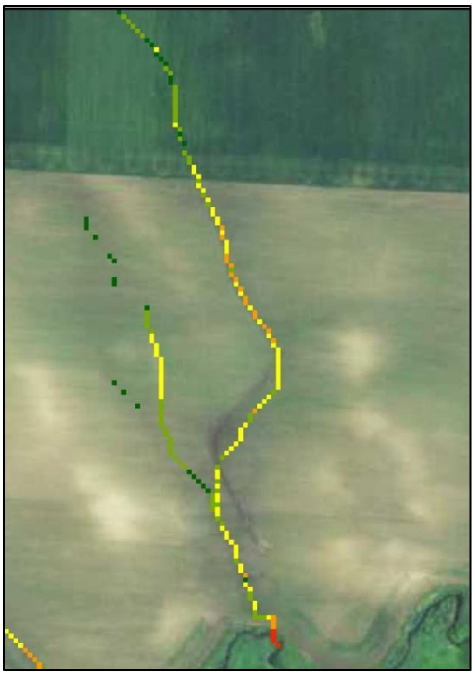
Project Narrative

It is well known that sediment deposition in Lake Pepin on the Mississippi River is a growing concern. A large proportion of that sediment is sourced from ravine (along with bluff and streambank) erosion from the Greater Blue Earth River Basin by way of the Minnesota River. This project provided much needed assistance to landowners to stabilize ravines and gullies contributing sediment to water resources in the Le Sueur, Blue Earth, and Watonwan River major watersheds.

Ravines and gullies were targeted through one or more of the following methods:

1. GIS Analysis. Researches with the University of Minnesota performed a GIS analysis using LiDAR to identify riparian areas likely to contain ravines in the Minnesota River Basin
2. Stream Power Index. This is another LiDAR derived GIS analysis used to locate the flow of water over the landscape.
3. Local knowledge. Experienced staff can often identify areas overlooked by other targeting tools.

Best management practices were implemented to stabilize the top, or head cut, of severely eroding ravines in the Greater Blue Earth River Basin. The primary pollution concern was sediment and phosphorus, but BMPs that stabilize ravines while temporarily storing water were prioritized due to multiple benefits. As stated earlier, ravines along with streambank and bluff erosion in the Minnesota River are the main source of sediment to the Mississippi. By temporarily storing stormwater we can reduce downstream peak flow and shear stress on banks and bluffs, thus further limiting sediment delivery to water resources.



The Stream Power Index (SPI) metric helps identify areas of concentrated water flow on the landscape. Locations where the SPI signature reaches a water resource are a high priority for sediment delivery.

Actual Results

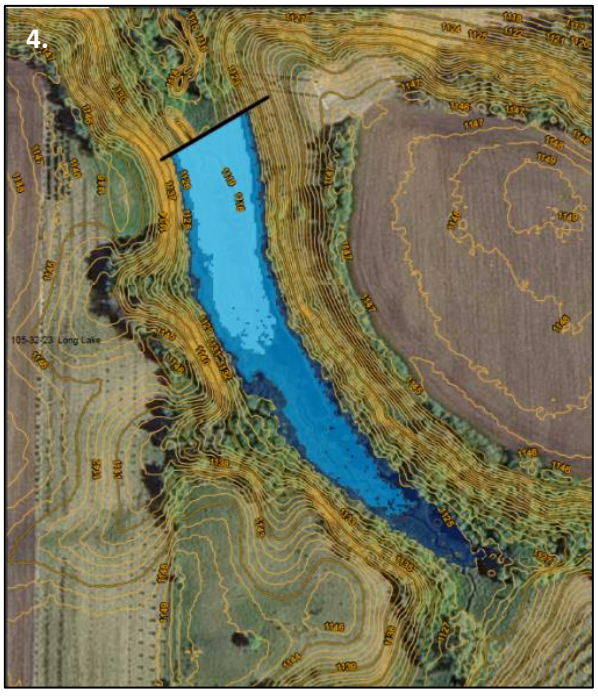
Several best management practices were constructed that will effectively reduce the sediment and phosphorus delivery to water resources for the long-term. Ponds and WASCOBs not only reduce phosphorus and sediment delivery but also reduce total water delivery and downstream peak flows. Stabilizing ravines and gullies requires an experienced engineer to design and coordinate construction. Conservation practices (Table 2) were designed by the South Central Technical Service Area and NRCS Area Engineers and managed by local Soil & Water Conservation District staff. These projects often require funding from several sources and several large equipment operators to construct.

Table 1. Pollution Reduction Estimates

Indicator Name	Actual
Phosphorus (Est. Reduction) (LBS/YR)	1,318.70
Sediment (Tss) (TONS/YR)	1,337.46
Soil (Est. Savings) (TONS/YR)	1,130.46

Table 2. BMPs Implemented

Best Management Practice	Count
Grade Stabilization Structure	13
Pond	3
Water & Sediment Control Basin	2
Diversion	1
Grassed Waterway	1



1. A Diversion structure is constructed in Martin County. 2. A Grade Stabilization Structure is constructed in Freeborn County. 3. A Water and Sediment Control Basin (WASCOB) constructed in Martin County. 4. Estimated pool area of a pond that was constructed in Watonwan County.