Great Lakes Basin Program GLRI Project

Targeted Efforts for Reducing Sedimentation in the River Raisin Watershed using BMP Auctions

Size: watershed
Grant Amount: $438,033
Year Awarded: 2010

Sponsor: Michigan Department of Agriculture
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Submitted Project:

II. Project Background

Erosion and Sediment Goal

*Estimate the total amount of **erosion**, in tons, your project will save.*

9,000 tons

*Estimate the total amount of **sediment**, in tons, your project will save.*

7,400 tons

*Describe the major **sources** of sediment in your watershed and the types of sources you will be reducing (cropland, streambank).*

Cropland, Rill & gully, streambank, and wind erosion sources

Watershed/ Project Work Area

Name of your watershed plan and the agency that approved the plan.

River Raisin Watershed Plan, developed by the River Raisin Watershed Council, approved by the Michigan Department of Environmental Quality (now known as the Michigan Department of Natural Resources), adopted September 30, 2009.

This project was funded by the Great Lakes Restoration Initiative, and is maintained through the Great Lakes Basin Program for Soil Erosion and Sediment Control at the Great Lakes Commission.

Great Lakes Commission des Grands Lacs

Keeping It On the Land

Great Lakes Basin Program for Soil Erosion and Sediment Control
www.glc.org/basin

*Watershed: list all **12 digit USGS HUC codes** that compromise your watershed.*

04100002-0302, -0303, -0304, -0305 and -0306

041000020307

*Describe the **Priority Areas** within the watershed where you are going to concentrate your efforts. List by area or narrative description of specific conditions.*

This project will focus efforts on riparian properties with potential erosion concerns as identified by High Impact Targeting (HIT) tool, and riparian properties with sedimentation resource concerns as identified in conservation plans.

How many acres are in the watershed?

52,960

How many acres are in:

- *Agriculture including pasture landuse?*
  39,472
- *Forest including brushland landuse?*
  4,237
- *Urban, suburban, industrial, commercial and rural residential landuse?*
  3,117

*U.S. **Congressional District**(s) where project is located, as listed at www.house.gov/writerep/.*

Michigan's 7th Congressional District

III. Implementation

***A written contract will be required between you and the landusers/landowners to fund conservation practices with GLBP funds.** The contract will include among other items, the type, number and location of each practice to be installed as well as the cost-share/incentive rate to be paid for each practice. (We will also use the signed contract as proof of commitment of funding for reimbursement of your expenses.)*

Fill out all that apply:
***D. Alternate Incentive Methods (ex. pay per ton/unit reduced/increased)** List each unit separately (ex. Pay per ton of sediment reduced rather than pay for a particular BMP.) If you have more than one ALT, copy and paste the ALT1 section and change the number as appropriate.*

ALT1

Description:

BMP Auction

Methodology

This project will fund a 0.5 Full Time Equivalent (FTE) position at the Lenawee Conservation District (LCD) to work with landowners on implementing agricultural Best Management Practices (BMPs) to address soil erosion and the subsequent sedimentation concerns. The project will use a new BMP Auction concept to direct resources toward the highest impact investments.

BMP Auctions

In recent decades, nonpoint sources of pollution have received increased attention. In particular, runoff from agricultural lands has been cited as a primary contributor of sediments, nutrients, and pesticides into the nation's waterbodies. Challenges still remain despite many years of effort and billions of dollars spent on BMPs aimed at reducing these nonpoint sources of pollution. The question remains: How can local Conservation Districts, non-profit conservation organizations and extension professionals use scientific tools, combined with the knowledge and participation of local stakeholders, to address water resource issues at the watershed scale? One aim of this proposal is to introduce an innovative technique (BMP Auction) to answer this question by developing economically feasible watershed management plans to environmental problems. Our goal here is to advance the BMP Auction method based on lessons learned from previous experience (piloted in an east-central Kansas watershed). It is worth noting that this technique was designed and tested successfully by one of our project principal investigators (A. P. Nejadhashemi) and published in an article called "Using a BMP Auction as a Tool for the Implementation of Conservation Practices" (*Journal of Extension* Volume 47[4], 2009).

The first step in the BMP Auction is to estimate the pollutant load from different fields within the study areas. The primary sources of soil erosion are cropland, rill and gully, wind, and streambank erosion. Water quality tools will guide the LCD staff to work one-on-one with producers to identify the sources of soil erosion on their farms and propose potential BMPs to address those sources.

LCD staff will develop conservation plans (or utilize existing plans) that identify the system of BMPs that the producers are interested in implementing on their farms and the expected costs of those BMPs. This information will be used to design the BMP Auction. Potential BMPs to be used include filter strips, no-till cultivation, cover crops, streambank restoration and wetland restoration.

The next step is the actual auction process, in which an auction form is provided to producers living in the watershed. The form will ask producers to provide information on the location of their farms, the types of conservation practices they would like to implement, and the requested funding to cover costs of starting and maintaining the conservation practice.

Once the auction forms are collected, a watershed tool (for example, a Soil and Water Assessment Tool – SWAT) will be used to determine 1) each farm's sediment load (tons/acre) to surface waters, before implementing the conservation plan and 2) how much the sediment load will be reduced once the BMPs are implemented at both the field and watershed levels.

The bids are ranked by the amount of water quality improvements generated per dollar granted. In the next step, the sediment load reduction for each farm is divided by the amount of the requested funds. This calculation will be repeated for every submitted conservation plan. Those producers whose plans provide the most water quality improvement for the least cost will receive grant funding (lowest cost/ton of sediment reduced).

Check the quarters the task is to be started and completed:

Quarter	1	2	3	4	5	6	7	8	9	10	11	12
Start/Complete	X	X	X	X	X	X	X	X	X	X	X	X

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Number of acres/units of BMP to be installed during project:
Approximately 2,530 acres (estimated)

Incentive method: price/ton of sediment reduced and rates: $31.15/ton of sediment (estimated)

Expected soil savings in total tons: 7,400

NOTE: This project will work cooperatively with a GLRI-funded project (River Raisin Nitrate Total Maximum Daily Load Reduction Project) which will be hosted by the LCD, resulting in a synergistic use of grant funds to address multiple resource concerns in the same watershed.

IV. Media Campaign

A. You will be required to conduct a kickoff event in the first quarter of the project. *You are specifically to invite, among others, all members of Congress who have a portion of their district within your watershed project boundaries, the media and the chair of the Great Lakes Commission delegation from your state. Describe how and what you will do to meet this requirement.*

We will select a location within the watershed and ask a landowner to host a kick-off event. Landowners, agency personnel, legislative officials, program partners and the media will be invited.

B. You are also required to establish an on-going outreach campaign. Describe your on-going outreach campaign strategy for:

1. The general public/media,

News articles about the projects will be submitted to media within the watershed. First to roll out the project then subsequent submissions would be used to keep the public informed as the project progresses.

2. Landowners/landusers,

The Center of Excellence (CfE) is the platform used for educating landowners and producers. An annual field day will provide information about the project while also providing current Best Management Practice (BMP) information. A winter Crops Day meeting is another opportunity to update landowners and producers about the project and provide further education about sedimentation reduction through the use of BMPs. One-on-one on-farm technical assistance will be provided throughout the project.

3. Elected officials
Elected officials will be invited to both the CfE field day and Crops Day in addition to the District annual meeting in January. LCD staff and a Director meet with County Commissioners annually to discuss current programs and projects.