

Great Lakes Basin Program GLRI Project:

Sediment and Phosphorus Reduction in the Riley Creek Watershed

Size: watershed

Grant Amount: 284,750

Year awarded: 2012

Sponsor: Blanchard River Watershed Partnership

Address: P.O. Box 1237

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Submitted Project:

Size: watershed

Budget: \$284,750

Savings: 31,202

Background

Sediment Sources

The Ohio EPA 2005 TMDL study reported that the phosphorus loading for total phosphorus from agricultural runoff only was approximately 46% higher than the daily allowance. The 2010 Ohio Water Quality Integrated Report reported that these two 12-digit watershed were impaired by sedimentation/siltation and total phosphorus. The cause of these impairments was channelization and crop production with subsurface drainage. Both of these watersheds carry the sediment and phosphorus by way of the Riley Creek to the Blanchard River entering at RM 30.1 about 2 miles below the Village of Ottawa. All of the sediment and phosphorus has the potential to reach Lake Erie by way of the Maumee River.

Readiness to Implement Project

The BRWP has a working relationship with the local SWCDs, ONDR, NRCS, and the Environmental Defense Fund (EDF). The EDF has been supporting two technicians for the past several years to work with the Lake Erie CREP program. This support is scheduled to end on September 30, 2012. The BRWP plans to employ of these two technicians starting in October 2012, if funds are available. The technicians will specifically work with farmers who do not want to get involve with long term contracts required by EQIP and Lake Erie CREP. Practices will follow NRCS and FSA practice code specifications for cover crops, grassed waterways, filter areas, riparian buffers, and conservation tillage.

There are no permits or easements involved with this grant.

Grants received in the last three years:

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.



The BRWP received a 25,000 from the Ohio CMAG program Cycle 15 in 2010. The grant provided money to hire a full time watershed coordinator. This grant had a \$32,400 local match. The grant directly resulted in completion of The Outlet/Lye Creek Watershed Action Plan. Completion of this action plan resulted in the Upper Blanchard being named a focal watershed for 2012 Great Lakes Restoration Initiative (GLRI) funding. In 2011 the BRWP, in collaboration with the Hancock County Commissioners and the Hancock County Board of Health, received a \$160,00 Water Pollution Control Loan Funding to restore/replace failing home septic treatment systems for low income homeowners.

In 2011 the BRWP and the Hancock SWCD applied for a \$220,000 Ohio EPA 319 grant for Agricultural BMPs in Lye Creek. Once the Upper Blanchard was named a focal watershed for GLRI, the Ohio EPA will include the 319 grant in the GLRI money.

The BRWP received a \$105,000 3-year ODNR Implementation grant for the employment of a watershed coordinator. The grant starts on July 1, 2012.

The Blanchard River Watershed Partnership (BRWP) submitted a watershed action plan for the Riley Creek watershed on May 23, 2012. The plan was written using the same format as was used in writing The Outlet/Lye Creek Watershed Action Plan, which was fully endorsed in June 2011. The plan includes sediment and phosphorus loadings and recommended BMPs needed to meet the reduction goals.

The BRWP has an elected Board of Directors. There is a member from each of the six 10-digit subwatersheds, plus three at-large members. The BRWP has four Standing Committees. One of these committees is the Land Use and Resource Management committee. This committee is composed of professional people from the local SWCDs, OSU Extension, and other such groups located in the watershed. The watershed coordinator attends most of the SWCDs meetings.

Project Work Area

HUC: 041000080402 - Upper Riley Creek, Ohio

HUC: 041000080405 - Lower Riley Creek, Ohio

HUC: - ,

Total Area: 17695

Agricultural Area: 13879

Forest Area: 1764

Urban Area: 2111

Priority Areas:

The Upper Riley Creek watershed (HUC 04100008 04 02) covers 9,185 acres. Of these, 7109 acres or 77.4% is cultivated cropland. The Upper Riley Creek watershed also has 938 acres in urban landuse and 1,105 acres in forest landuse. The Upper Riley Creek watershed flows into Riley Creek RM 15.62. The Upper Riley Creek watershed is covered mostly by Blount and Pewamo soils having a slope between 0-6%. Farming practices in this watershed result in an estimate sediment loading of 1,912 tons/yr. and a phosphorus associated with sediment loading of 4,013 lbs./yr.

The Lower Riley Creek watershed (HUC 04100008 04 05) covers 16,095 acres. Of these, 12,831 acres or 79.7% is cultivated cropland. Due to the funding limitation of this grant, only the Putnam County portion of the Lower Riley Creek watershed will be included. There are 8,494 acres or 52.8% of the Lower Riley watershed located in Putnam County. Using the 79.7% of the landuse being cultivated cropland, that extrapolates out to 6,770 acres. The Putnam County portion of Lower Riley Creek also has 1,181 acres in urban landuse and 659 acres in forest landuse. Farming practices in this watershed result in an estimate sediment loading of 3679 tons/yr. and a phosphorus associated with sediment loading of 6342 lbs./yr.

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Implementation

Implementation Strategy Background Information

Upper Riley Creek:

Analysis indicates that a 50% sediment reduction would be achieved by treating 5,444 acres of cropland runoff with riparian buffers or filter areas to address concentrated flow areas and other surface water runoff. In order to restore use attainment in the Upper Riley Creek watershed, partners propose to use the Great Lakes Basin grant funding to reduce field erosion from agriculture cropland by 956 tons per year, reduce nitrogen leaching by 2,400 pounds per year, and reduce sediment-associated phosphorus by 2,850 lbs. per year through the following actions:

- 1) Establish riparian buffers or filter areas on 35 acres/year that will treat 1815 acres of cropland runoff (115 acres over 3 years that will treat 5,444 acres).
- 2) Increase conservation tillage and by 200 acres/year (600 over 3 years).
- 3) Increase cover crop use on 200 acres/year (600 over 3 years).
- 4) Install 2 acres per year of grass waterways (6 acres over 3 years).

Lower Riley Creek:

Analysis indicates that a 50% sediment reduction would be achieved by treating 6,128 acres of cropland runoff with riparian buffers or filter areas to address concentrated flow areas and other surface water runoff in the entire watershed. In the Putnam County portion (52.8%) that extrapolates out to treating 3,236 acres. In order to restore use attainment in the Putnam County portion of Lower Riley Creek watershed, partners propose to use the Great Lakes Basin grant funding to reduce field erosion from agriculture cropland by 971 tons per year, reduce nitrogen leaching by 2,746 pounds per year, and reduce sediment-associated phosphorus by 1,214 lbs. per year through the following actions:

- 1) Establish riparian buffers or filter areas on 20 acres/year that will treat 1,020 acres of cropland runoff (60 acres over 3 years that will treat 3,060 acres).
- 2) Increase conservation tillage and by 100 acres/year (300 over 3 years).
- 3) Increase cover crop use on 125 acres/year (375 over 3 years).
- 4) Install 1 acre per year of grass waterways (3 acres over 3 years).

This work will involve the following partners: Blanchard River Watershed Partnership (BRWP), Hancock SWCD, Hardin SWCD, Putnam SWCD, Ohio Department of Natural Resources (ODNR), and the Natural Resource Conservation Service (NRCS). Practices will follow NRCS and FSA practice code specifications for cover crops, grassed waterways, filter areas, riparian buffers and conservation tillage.

Step One: Identify producers in the problem area.

A Blanchard River Watershed Partnership (BRWP) outreach specialist will liaise with Hancock SWCD, Hardin SWCD, Putnam SWCD, and Natural Resource Conservation Service personnel to review the Upper Riley Creek watershed and Lower Riley Creek watershed maps and county service center records. This process will identify producers in the watershed who are eligible for conservation practice funding for conservation tillage and/or cover crops but who, for one reason or another, were not accepted into EQIP for funding (since EQIP funds are usually insufficient to meet demand). Once identified, partners will discuss their status and likelihood of accepting assistance with a conservation practice and BRWP outreach specialist will approach producers one on one to discuss practices with them. The BRWP will provide aerial maps and photos of the problem areas, if available. Producers will be prioritized based on level of producer engagement and interest, and level of critical need of practice implementation.

Step Two: Develop implementation and conservation agreements

The BRWP outreach specialist, with technical assistance from the SWCDs involved and NRCS, will walk fields with producers to determine which of the identified practices will address the particular sediment erosion problem the producer is experiencing, and to determine what each producer is willing to implement. Conservation plans will be developed by the BRWP outreach specialist and the SWCDs involved for riparian buffers or filter areas, grassed waterways, cover crops, and conservation tillage. Payments to producers will be structured as follows:

Upper Riley Creek

Practice + acreage total

Cover crops (600 acres)
 Grassed waterways (6 acres)
 Maintenance: widen/reseed (assumes 2 acres)
 Filter areas/buffers (115 acres)
 Maintenance: widen/reshape/ reseed (assumes 20 acres)
 Conservation tillage (600 acres)
 Total practice costs

Funding/acre	Total	Producer cost share/acre	Total producer
\$30	\$18,000	\$20	\$12,000
\$4,050	\$24,300	\$1,350	\$8,100
\$4,050	\$8,100	\$1,350	\$2,700
\$537	\$61,755	\$180	\$20,700
\$537	\$10,740	\$180	\$3,600
\$15	\$9,000	\$10	\$6,000
	\$131,895		\$53,100

Lower Riley Creek

Practice + acreage total

Cover crops (375 acres)
 Grassed waterways (1 acres)
 Maintenance: widen/reseed (assumes .5 acres)
 Filter areas/buffers (60 acres)
 Maintenance: widen/reshape/ reseed (assumes 10 acres)
 Conservation tillage (300 acres)
 Total practice costs

Funding/acre	Total	Producer cost share/acre	Total producer
\$30	\$11,250	\$20	\$7,500
\$4,050	\$4,050	\$1,350	\$1,350
\$4,050	\$2,025	\$1,350	\$675
\$537	\$32,220	\$180	\$10,800
\$537	\$5,370	\$180	\$1,800
\$15	\$4,500	\$10	\$3,000
	\$59,415		\$25,125

Qualifying producers will sign cost share agreements with the appropriate SWCD detailing their commitment to the project, the dollar amount authorized, and the procedure for installing the practice and requesting reimbursement for the work. Project partners BRWP and local SWCDs will write an agreement template that will be used for the life of the project. Producers may choose to contract for the work but reimbursements will not exceed the amounts listed above. Producers will commit to a minimum of three years of implementation for cover crops and conservation tillage, and will be encouraged to incorporate these practices together will be maintained by the producer for the life span of the practice. All other practices installed Producers will be able to choose to implement all four practices if necessary and justified, and receive incentive cost share for all four, provided all four address different acres on the landscape (e.g. no “stacking” grassed waterway and filter strip on the same acres). Language in the agreements will stipulate exactly what is expected of the producer and the timeline for completion, as well as practice maintenance activities the producer is expected to undertake.

Step Three: Implement practices and conduct follow-up checks

The BRWP outreach specialist, BRWP, the local SWCDs or NRCS will provide guidance and technical assistance to producers as they install the required practices in the conservation agreements. The table below details the activities required for each practice and general timeline for each. Timeline for each installation will vary widely depending on the technical requirements of the practice, but in general, producer engagement and enrollment will take place in winter post-harvest and in summer post-planting.

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Cover crops	Purchase seed	Drill or aerially apply seed (Fall) into standing corn or after beans	Monitor stand in early Winter and Spring (photodocument)	Burndown or roller-crimp pre-planting
Filters/buffers	Mark out site, order trees and grass seed, prep site	Mark out plots, plant trees and grasses in Spring	Monitor stands every other month and count seedling survival rates	Re-seed if necessary
Grassed waterways	Mark out waterway, order appropriate grass seed, prep site	Plant waterway grasses in Spring	Monitor stands and photo document results during second year	Widen waterway by planting additional grasses if necessary
Conservation tillage	Equipment modification or purchase	Leave residue on soil surface at harvest	If planting cover, follow cover crop guidelines	Photo document results during rainfall events

The BRWP outreach specialist and BRWP will conduct spot checks and schedule visits to ensure practices were successfully installed and offer additional assistance as needed. They will also be ready to photo-document improvements in problem areas and resulting reductions in sediment runoff.

Step Four: Disburse payments and make any plan modifications necessary for following year
Once verification of installation is completed by the BRWP outreach specialist, the appropriate SWCD, BRWP or NRCS, the BRWP will issue a check to the producer for the incentive cost share funds. The BRWP will require receipts for costs incurred, or reliable documentation from the producer that the work was done according to the conservation plan. The BRWP will disburse the funds to the producer in full only after the practice has been successfully installed, and after the BRWP outreach specialist, BRWP, appropriate SWCD or NRCS personnel have provided documentation that the work was completed and the practice successfully installed. At this stage producers might discuss any desired modifications to the practice – such as a different cover crop for the following year, different methodology for planting, inter-seeding, etc.

The conservation plans are meant to be a guide for producers and partners to follow, however flexibility should be allowed in order to adaptively manage the practices and implement any improvements required once producers and partners see how the practice is actually performing. Costs for maintenance on grassed waterways and filter areas are already built into the table on page 5 listing cost share rates, because these two practices are the most likely to need re-seeding, widening or re-shaping. If, for example, the producer and partners document that a rainfall event overwhelms the capacity of an installed practice such as a grassed waterway, plans will be made to increase the acreage in the grassed waterway as appropriate and according to a reasonable schedule for planting. These additional acres must also be cost-shared, because they are acres that are additional to the acres already installed. However, every attempt will be made to ensure that the original practice is designed to meet its purpose and reduce runoff by the expected amount.

Step Five: Conduct public outreach

The Blanchard River Watershed Partnership will publicize the Great Lakes Basin grant program implementation updates on its website periodically and in its quarterly newsletter. The BRWP also holds a public meeting annually where the Great Lakes Basin program implementation and steps completed will be presented by both BRWP and partners. The BRWP and local SWCDs will jointly sponsor one Field Day annually to demonstrate practices installed under the Great Lakes Basin program, for both the public and producers interested in participating in the program. See the table below for more detail.

Project Sponsor Blanchard River Watershed Partnership

PROJECT Title Sediment and Phosphorus Reduction in the Upper and Lower Riley Creek Watershed

Deliverable	# of Units to be Completed (hrs.)	\$Cost per Unit	Total Est. \$Costs	Description
Outreach	250	\$25	\$6,250	Meet with partners, assess records, meet with producers, analyze needs
Technical Assistance, conservation planning & practice installation	750	\$25	\$18,750	Walk fields, write conservation plans, meet with producers, finalize plans, solicit work, carry out plan
Inspections, maintenance checks and follow up	620	\$25	\$15,500	Pre-payment of incentive dollars to certify practice installation, once each spring/early summer for follow up on each practice
Total Technical Assistance Costs Associated with this Project	\$40,500			

Step Six: Quantify program impacts

The BRWP and SWCDs will document before and after practice implementation impacts and conduct maintenance and follow up visits and technical assistance as described. The success of the project will be measured in large part through successful practice establishment. The BRWP will document any improvements in stream conditions, but is not expected to quantify the direct impacts from each practice implemented. Any localized improvements due to practice implementation will be measured visually in before and after photos – such as water clarity from field to ditch, visibly improved surface water infiltration rates, evidence of soil biological improvements due to cover crops (worm holes, residue incorporation at surface, etc) and tree/grass survival rates and percent cover improved

Technical Assistance

Technical Assistance will be provided by the BRWP outreach specialists. These specialists are retired NRCS, SWCD, or other people who are familiar with NRCS practices, Lake Erie CREP, and other such programs. They are hired as independent contractors by the BRWP. The chart below summarizes their position. The subcontractor for this work is BRWP outreach specialists. Conservation planning and site specific assessments must be completed by professionals who are experienced in the field, have spent considerable time working with producers in practice design and installation, who have the time it will take to interact individually with some 60 producers over three years, and who will have much greater success achieving project goals than unknown entities either within or outside of the watershed, therefore this subcontract will not be opened for competitive bidding. Any practice installation requiring subcontracted work will be solely at the discretion of the producer, but the work must be inspected and certified as complete by project partners prior to the producer receiving an incentive payment.

BMPs

Name: Cover Crops
Type: Agronomic/Cover-based
Acres: 975
Cost: \$29250 grant; \$19500

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Description

Cover Crops are needed to prevent soil erosion during the non-crop production months. The goal is to install 600 acres in the Upper Riley Creek watershed and 375 acres in the Putnam County portion of the Lower Riley Creek watershed. Estimate load reduction based on 1.5 tons/acre/year. The life expectancy for crop crops is 1 year.

Start Date: October 2012
End Date: September 2015
Incentive Method: Flat Rate
Incentive Rates: \$30/acre
Total Soil Savings: 1462

Name: Conservation Tillage
Type: Agronomic/Cover-based
Acres: 900
Cost: \$13500 grant; \$9000

Description

Start Date: October 2012
End Date: September 2015
Incentive Method: Flat Rate
Incentive Rates: \$15/acre
Total Soil Savings: 225

Name: Filter Strips/riparian buffers
Type: Agronomic/Cover-based
Acres: 175
Cost: \$93975 grant; \$31500

Description

Start Date: October 2012
End Date: September 2015
Incentive Method: Flat Rate
Incentive Rates: \$537/acre
Total Soil Savings: 28115

Name: Grass Waterways
Type: Engineering Practices
Acres: 7
Cost: \$28350 grant; \$9450

Description

Grass Waterways are needed to reduce surface soil erosion from concentrated flow during rain events. The average grass waterway in the Blanchard River watershed is 30' X 1500' or approximately 1 acre. The life span of a grass waterway is 10 years. The average sediment load reduction is 20 tons/acre/year. Based on this data, the estimate sediment reduction from installing grass waterways will be 7 acres X 20 tons/acre/year X 10 years or 1,400 tons. There will a maintenance portion required on the grass waterways. For the purpose of this grant that will amount to \$12,050 from the grant and \$3,375 from the farmers as match.

Start Date: October 2012
End Date: September 2015

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Incentive Method: Flat Rate
Incentive Rates: \$4050/acre
Total Soil Savings: 1400

Media Campaign

Kickoff:

Once the BRWP receives word of being awarded the Great Lakes Basin grant, a news release will be sent to all news agencies in the watershed detailing the award and how farmers can get involved. A kickoff public meeting will be held in each subwatersheds. The grant will also be posted on the BRWP website. An article will be included in the quarterly newsletter of the involved SWCDs and the BRWP. Flyers will be posted in places where farmers visit, such as elevators, restaurants, SWCD offices, and fertilizer/seed stores. State Senator Cliff Hite is the chairman of the State Senate Agriculture Committee. Sen. Hite and State Representative Robert Sprague will be invited to the Kickoff event.

Ongoing:

Fact Sheets on each practice will be distributed by mail to landowners along Riley Creek in the priority watersheds. These fact sheets will be available at several locations throughout the priority watersheds. Two Public Meetings will be held each year to review and update the grant program. The BRWP will discuss and present results from the grant at their Annual Meeting each year of the grant.

A Field Day will be sponsored annually to demonstrate the practices being installed for both the public and producers.

End:

A news release listing the results of the project will be sent to all the media agencies. The results will also be included in the quarterly news letter of the involved SWCD and the BRWP. The results will be posted on the websites of the SWCD and the BRWP.

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