Great Lakes Basin Program GLRI Project

Black and Oatka Creeks Sediment Reduction Project

Size: watershed
Grant Amount: $536,000
Year awarded: 2010

Sponsor: NYS Soil and Water Conservation Committee
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Submitted Project:

II. Project Background

The Great Lakes region of New York is the heart of the State's dairy industry. The watersheds contain 406 square miles or 260,000 acres. The Black and Oatka Creek watersheds cover portions of four counties. While this large area does encompass several villages and suburban areas, most areas are rural. Agriculture, particularly dairy operations, is an important economic industry to the region. The Great Lakes region has been an important focus of New York's Agricultural Environmental Management (AEM) process, which identifies, assesses, plans and remediates agricultural pollution concerns.

The Genesee River is the major source of sediment and phosphorus discharged into Lake Ontario at Rochester, New York. This area is known as the Rochester Embayment and is identified as an Area of Concern (AOC) via the Lake Ontario Lakewide Management Plan (LaMP). These pollutants cause degradation of near shore water quality as evidenced by eutrophication in the near shore areas and outbreaks of harmful algal blooms around the mouth of the Genesee River. Many of these pollutants originate in tributaries such as Black and Oatka Creeks (See Figure 1 for a map of the watershed areas).

Addressing these sediment concerns has been a consideration of watershed planning starting at the broadest Lake-wide assessment to segment analysis for the Black and Oatka Creeks in these formal projects:

- the Lake Ontario LaMP,
- the Rochester Embayment Restoration Action Plan (RAP, 1993, 2002),
- the Genesee River Basin Action Strategy (GRBAS), and
- the *Controlling Sediment in the Black and Oatka Creek Watersheds* project, funded in part by a grant awarded by the Great Lakes Commission (GLC) Program on Erosion and Sediment Control.(2005-2006).
- Agricultural Environmental Management (AEM) planning on the farms within these high priority watersheds, as part of Genesee, Wyoming, and Monroe Counties Agricultural Strategies.

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.

This project will use New York's existing Agricultural Environmental Management Program (AEM) and its companion funding component the Agricultural Nonpoint Source Abatement and Control Grant (AgNPS) Program to implement best management practices (BMPs) on farms in the Great Lakes region.

Projects will be evaluated under the following categories:

Identified Need:

- Watershed analysis been conducted to document the pollutants of concern and likely nonpoint sources of pollution in the watershed.
    - Watershed analysis has been done to prioritize the farms and is consistent with AEM concepts and approach outlined in the AEM Guide.
    - BMP selection is based on an AEM Strategic Plan, a watershed analysis, an AEM Tier 2 environmental risk assessment and a Tier 3A Conservation Plan for the agricultural pollutant source(s) being addressed.
- Project addresses a significant identified need or opportunity.
    - The project addresses the objectives and goals outlined in the County AEM Strategy.
    - The project will address the water quality and/or aquatic habitat problem(s) described in the AEM Strategic Plan, priority planning unit strategy.
    - Agriculture is a verified source of sediment pollution identified by the DEC Priority Waterbody Inventory (PWL), or local watershed analysis.
    - Selected BMPs are needed to address preventative pollution concerns or compliance issues and the need is well **documented.**
        - If the watershed is not documented by the PWL as having impairments, the environmental risk and opportunity to prevent further water quality degradation is explained and well documented.
    - Project location proximity to the water resource being addressed suggests close relationship between impairment of water resource and potential pollutant source.
    - There is good documentation of the problem in the proposal narrative, maps, and other supporting documents and proposed plans or BMPs will address the problem identified.
- Project addresses public drinking water quality impairments or protection.
    - Agricultural pollution prevention or remediation activities are being undertaken to protect a public drinking water supply.
- Project will assist in meeting federal and state water quality laws and program requirements (e.g. CWA, SDWA, CZARA, Farm Bill, CREP, SWAP, etc…).

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Pollution Reduction Capacity as generated by incorporation or the Soil and Water Assessment Tool Variable Source Area Hydrology (SWAT-VSA) models:

- The sediment transport model is a computerized environmental analysis tool that can be used to predict the erosive behavior of a range of soil types under a variety of climactic and/or hydrological conditions. By incorporating V**ariable Source Area Hydrolog**y into SWAT (SWAT-VSA) (Easton et al., 2i008) it can serve as the basis of the modeling approach to target Basins. If this project is funded, the model could be used to yield important data relative to the prevention of soil erosion, and provide a GIS tool to target at the field-scale, additional implementation of BMPs throughout the Watersheds.

Erosion and Sediment Goal

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

2,215 tons (see figure 2)

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

At this point in the development of the work plan it would not be possible to estimate total amount of sediment loading to the watersheds.

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

The major sources of sediment in the Black and Oatka watersheds are from cropland. An analysis of GIS layers for all the counties in the watershed that reflects actual cropland reported to USDA FSA for 2008 calculates that the Black Creek Watershed has 65,135.57 acres of cropland reported or 50.75% of the total land area. Oatka Creek Watershed has 72,191.75 acres of cropland reported or 52.46% of the watershed.

Watershed/ Project Work Area

The project work area will focus on the Black and Oatka Creeks watersheds. Resource concerns on farms will be addressed in Monroe, Genesee and Wyoming County. There are a total of 260,000 acres in the Black and Oatka Creek watersheds. An analysis of GIS layers for all the counties in the watershed that reflects actual cropland reported to USDA FSA for 2008 calculates that the Black Creek Watershed has 65,135.57 acres of cropland reported or 50.75% of the total land area. Oatka Creek Watershed has 72,191.75 acres of cropland reported or 52.46% of the watershed. Forest covers 63,000 acres, or about one quarter of the combined watersheds. When including brushland and open space, there are over 118,000 acres in the watersheds. Fewer than 7,000 acres are in developed or urban land categories.

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

Three local watershed plans are identified as the Monroe, Genesee and Wyoming County Agricultural Environmental Management Strategies. These strategies form the overarching basis for prioritization of operations and practices at the watershed level via priority planning units. The technical elements of these local watershed plans are substantially based on the established documentation provided by the following:

- The NYS Department of Environmental Conservation (DEC)
- Regionally-based plans such as the LaMP, RAP and GRBAS

- Local knowledge of the watersheds

The NYS Soil and Water Conservation Committee (SWCC) formally approve AEM strategies on five year intervals. The most recent strategies were adopted in 2009.

The New York State Departments of Environmental Conservation, Agriculture and Markets, Health, State have all approved and assisted with the technical development of the AEM Program, as well as, Cornell University. All agencies are actively involved in reviewing and approving projects funded under the auspices of AEM Strategic Plan. This process will be used to advance projects under the GLC grant for Black and Oatka Creeks.

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

041300030403	White Creek-Oatka Creek
041300030406	Oatka Creek
041300030405	City of Le Roy-Oatka Creek
041300030602	Headwaters Black Creek
041300030606	Black Creek
041300030605	Mill Creek-Black Creek
041300030604	Hotel Creek-Black Creek
041300030603	Robins Brook-Black Creek
041300030701	Little Black Creek
041300030401	Headwaters Oatka Creek
041300030402	Pearl Creek-Oatka Creek

(See figure 1)

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

The Oatka Creek Watershed encompasses approximately 215 square miles and is about 58 miles long. Oatka Creek begins in Wyoming County then flows north until it turns east where it joins the Genesee River in Monroe County. It is mainly rural and agricultural especially at the southern end of the watershed. The Oatka Creek is a prized trout stream. Agriculture has been identified as a primary source of pollution to the Oatka Creek contributing sources of both silts/sediments and nutrients. The watershed is suspected of being stressed from algal and aquatic weed growth, nutrients and silt/sediment from agriculture, failing on site systems and stream bank erosion. The lower Oatka Creek supports a brown trout fishery and is a stream Class B (T). Above the village of Le Roy it is a Class C stream.

The Black Creek Watershed is also part of the Genesee River Basin that drains into Lake Ontario. The watershed encompasses approximately 202 square miles and is about 46 miles long. The creek begins in Wyoming County and flows generally north and east to its confluence with the Genesee River in Monroe County. Both Black Creek and Oatka Creek contribute to the Genesee River, which outlets to Lake Ontario at the Port of Rochester in Monroe County.

Black Creek in Genesee County is a Class C stream and is on the NYSDEC TMDL List. These are waters with verified impairments that are expected to be addressed by a segment/pollutant – specific TMDL. From the NYSDEC Priority Waterbodies List Black Creek upper and minor tributaries are subjected to phosphorus from agricultural and municipal sources. Concerning Black Creek middle segment and minor tributary's, the

NYSDEC Priority Waterbodies List states aquatic life, recreation and aesthetics are known to be stressed from algal and aquatic weed growth and nutrients from agriculture. In the upper segment and minor tributary's aquatic life is impaired by nutrients from agriculture and municipal sources. Over 50% of the watershed is in agricultural use. Agricultural/vacant land, field and vegetable crops, dairy farming and other livestock operations are the primary use activities.

How many acres are in the watershed?

There are a total of 260,000 acres in the Black and Oatka Creek watersheds.

How many acres are in:

- *Agriculture including pasture landuse?*

  An analysis of GIS layers for all the counties in the watershed that reflects actual cropland reported to USDA FSA for 2008 calculates that the Black Creek Watershed has 65,135.57 acres of cropland/pasture reported or 50.75% of the total land area. Oatka Creek Watershed has 72,191.75 acres of cropland/pasture reported or 52.46% of the watershed

- *Forest including brushland landuse?*

  Forest covers 63,000 acres, or about one quarter of the combined watersheds. When including brushland and open space, there are over 118,000 acres in the watersheds.

- *Urban, suburban, industrial, commercial and rural residential landuse?*

  Fewer than 7,000 acres are in these developed land categories.

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

The project is located in portions or all NY Congressional Districts 25,26,28,29

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:

A. Agronomic/Cover-based Practices installed by Landowners/Landusers with incentives paid for with this grant (ex. Cover Crops, conservation tillage, no-till.) *If you have more than three BMPAs, copy and paste BMPA1 section and change the number as appropriate.*

BMPA1

Description: Cover Crops (Please see Figure 2)

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	

Est. Start Est. Completion

Number of acres/units of BMP to be installed during project:
Installation of cover crops on 400 acres of cropland

Incentive method and rates: Reimbursement to farmer of $56 per acre

Expected soil savings in total tons: 240

BMPA2

Description: Riparian Buffers Strips (Please see Figure 2)

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	

Est. Start Est. Completion

Number of acres/units of BMP to be installed during project:
Install riparian conservation buffers on 250 acres

Incentive method and rates: Reimbursement rate to farmer of $580 per acre

Expected soil savings in total tons: 312.5

BMPA3

Description: Prescribed Rotational Grazing (Please see Figure 2)

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	

Est. Start Est. Completion

Number of acres/units of BMP to be installed during project:

Convert 200 acres of cropland to a prescribed rotational grazing system

Incentive method and rate: Reimbursement rate to farmer of approximately $167 per acre

Expected soil savings in total tons: 542

BMPA4
Description: Conservation Tillage (reduced tillage consisting of zone till, ridge till, no-till practices) (Please see Figure 2)

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

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	

Est. Start Est. Completion

Number of acres/units of BMP to be installed during project:

Implement conservation tillage 400 acres of cropland.

Incentive method and rates: Reimbursement rate to farmer of $25 per acre

Expected soil savings in total tons: 696 tons

B. Engineering Practices installed by Landowners/Landusers with Financial Assistance provided by this grant (ex. Grass Waterway, Streambank Stabilization.) *If you have more than three BMPEs, copy and paste BMPE1 section and change the number as appropriate. (NRCS equivalent or PE sign-off.)*

BMPE1

Description: Erosion and Sediment Control Practices on Cropland (Could include any of the following: waterways, diversions, terraces, etc…) (Please see Figure 2)

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	

Est. Start Est. Completion

Number of acres/units of BMP to be installed during project: 4000 feet

Incentive method and rates: Reimbursement rate to farmer of $5 per acre

Expected soil savings in total tons: 182

BMPE2

Description: Erosion Control Practices (Could include: Water and Sediment Control Basins (WasCoB), grade stabilization structures, stream crossings, etc…) (Please see Figure 2)

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	

Est. Start Est. Completion

Number of acres/units of BMP to be installed during project: completion of 4 Erosion Control Systems

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Incentive method and rates: Reimbursement to farmer of average cost of $7,500 for each practice system installed

Expected soil savings in total tons: 48

BMPE3

Description: Streambank Stabilization (Please see Figure 2)

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	

Est. Start Est. Completion

Number of acres/units of BMP to be installed during project: stabilize 1,460 feet of streambank

Incentive method and rates: Reimbursement to farmer of average cost of $80 per foot

Expected soil savings in total tons: 195

C. Agronomic/Plant-based Practices installed by Landowners/Landusers with the use of equipment purchased by this grant for which you retain ownership (ex. no-till planters or drills, residue management machines, mulchers.) *If you have more than two Equipments, copy and paste Equipment 1 section and change the number as appropriate. Cost-share on equipment*

Equipment1 N/A

Description: N/A (No equipment purchases are planned under this grant.)

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												

Number of acres equipment will be used on during project:

Incentive method:
and rates:

Expected soil savings in total tons:

Equipment2

Description:

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												

Number of acres equipment will be used on during project:

Incentive method:
and rates:

Expected soil savings in total tons:

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 N/A

Description: N/A

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												

Number of acres/units of BMP to be installed during project:

Incentive method:
and rates: NA

Expected soil savings in total tons: NA

E. Easements, purchased in part or whole with grant funds, over which you or your assignees retain ownership. *If you have more than one type of EAS, copy and paste the EAS1 section and change the number as appropriate. (NRCS Equiv or state standards.)*

EASP1: N/A

Description: N/A

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

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

Estimated number of acres of permanent easements to be obtained during the project: NA

Incentive method: NA

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and rates: NA

Expected soil savings in total tons.

EAST1: NA
Description: NA

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

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

Estimated number of acres of permanent easements to be obtained during the project: N/A

Incentive method: NA

and rates: NA

Expected soil savings in total tons.

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.*

A media event will be held at a prominent location within the region to announce this project. Preceding the event a press release will be developed and distributed to the local and regional media outlets. All members of the 25th, 26th, 28th, 29th Congressional Districts will be formally invited in addition to the chair of the GLC delegation of New York State. Commissioners of the participating state agencies will be invited, and the Dean of the College of Agriculture and Life Sciences (CALS) at Cornell University. Participating farmers, Soil and Water Conservation District personnel and board members, county legislators and other local officials will also 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*

The SWCC AEM Outreach Specialist will also prepare a series of media releases for publications such as "Small Farms Quarterly, Country Folks, and local newspapers within the Great Lakes region.

2. Landowners/landusers

Within the State, information will be shared through several channels – monthly SWCC meetings, email notices to Conservation Districts, posting on the CNMP planner list-serve, updates in the SWCC newsletter, posting on the SWCC, DAM and DEC websites and direct mailings to farmers. Farmer workshops focusing on one or

more conservation related topic will be held towards the end of each fiscal year of the project (e.g. cover cropping, riparian buffers, conservation tillage, manure management, etc…).

3. Elected officials

The SWCC will also hold a "Principals Meeting" in the project area. Every two years, the SWCC hosts a Principals Meeting which includes one of its regular board meetings along with a tour of a particular area. Elected officials, Department Commissioners, and the public are invited to attend these meetings. These tours give local partners the opportunity to showcase how they have used the funding they receive and share the success which they have achieved.

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