

FLOWPA FUNDAMENTALS

FINGER LAKES - LAKE ONTARIO WATERSHED PROTECTION ALLIANCE
FROM STREAMS, TO LAKES, TO GREAT LAKES
PROTECTING OUR WATER RESOURCES BEGINNING AT THE LOCAL LEVEL

In This Issue:

This edition of the newsletter highlights successful Water Quality Monitoring Programs and Education and Outreach Efforts implemented throughout the Finger Lakes – Lake Ontario Drainage Basin.

WINTER 2023



MISSION

The mission of the Finger Lakes Lake Ontario Watershed Protection Alliance is to facilitate processes that encourage watershed partnerships and implementation of action plans to protect and enhance water quality based on:

- Local needs assessment
- Holistic approach
- Information exchange and public education
- Measurable goals and milestones

FLOWPA is a unique, time-tested, organization that plays a critical roll in the protection of New York's freshwater resources within the Finger Lakes — Lake Ontario drainage basin. FLOWPA provides protection through funding for locally supported water quality initiatives that assist farmers, businesses, the tourism industry and local governments within the twenty-five county region. Programs are developed and implemented to address specific water quality needs that are consistent with State priorities and watershed plans.

FLOWPA members and partners have made great strides in the protection of New York State's water resources by integrating innovative approaches to reduce nonpoint source pollution at the grassroots level. This issue of FLOWPA Fundamentals will focus on water quality projects completed by several FLOWPA members, with additional support provided by local landowners, agricultural producers and municipalities in the Finger Lakes - Lake Ontario drainage basin. These projects were visited during the FLOWPA Watershed Tours held in the fall of 2023.

Watershed Tours are organized by FLOWPA's Program Coordinator Kristy LaManche annually and provide an opportunity to show staff from the New York State Department of Environmental Conservation and FLOWPA's New York State Senate and Assembly representatives how efficiently and effectively FLOWPA funds are utilized throughout the watershed. The tours also provide an opportunity for State agency and elected officials to interact with landowners, agricultural producers and key stakeholders who can attest to the importance of FLOWPA funding to implement water quality projects.

NIAGARA AND ORLEANS COUNTY TOUR

A variety of FLOWPA members and stakeholders participated in touring seven FLOWPA supported projects throughout Niagara and Orleans Counties on August 9, 2023. Attendees included; **Kristy LaManche**, FLOWPA Program Coordinator; **Mark Seider**, Niagara County SWCD; **Katie Sommerfeldt**, Orleans County SWCD; **Senator Ortt**; **Matt Mosher**, Senator Ortt's office; **Cameron Kiner**, Assemblyman Norris's office; **John Hornberger**, DEC Region 8; **Aimee Clinkhammer**, NYS DEC Finger Lakes Hub; **Ryan Elliott**, NYS DEC Great Lakes Program Office.

SILAGE LEACHATE COLLECTION SYSTEM

The nutrient-rich leachate from silage can negatively impact water quality. FLOWPA funding was used to install a low flow silage leachate collection system including a concrete channel with curbing and walls to direct leachate runoff from the bunk silo to a low flow collection pad. This project makes it easier for the area to be cleaned out on a regular basis, improves collection and filtration of silage leachate, and protects water quality in the Twelvemile Creek Watershed. The total cost of this project was \$57,299.00. FLOWPA paid \$17,549.06 (30.6% of the total cost) while the remaining amount was paid by the farm and AEM BMP funds.



GRASSED WATERWAY



FLOWPA funds went towards the construction and planting of a grassed waterway on an Orleans County farm to minimize gully erosion and direct water to stable outlets with non-erosive flows. All vegetation and debris were removed from the site prior to grading, then the waterway was regraded to a slope that was non erosive and didn't result in flooding before it was seeded with a grass seed mix. Establishment of the seedbed is critical to the success of the waterway. The total cost of this project was \$17,000.00, FLOWPA paid 75% which was \$12,750.00 and the farm paid the remainder.

MANURE HANDLING FACILITY

A heavy use area was designed to temporarily store and handle manure from a calf barn on a dairy farm close to Lake Ontario using FLOWPA funds. A concrete pad with perimeter walls was designed to provide a hard surface area that could contain the manure and allow it to be easily loaded into a spreader rather than creating a muddy, highly disturbed area that couldn't be easily cleaned up. The runoff from the storage area was sloped to a drain so that it could be collected and properly handled to avoid any water quality concerns. The total cost of this project was \$23,680.00. FLOWPA paid \$17,760.00 (75% of the total cost) and the farm paid for the remaining amount.



HEAVY USE AREA #1 (HUA)



The Orleans County SWCD used FLOWPA and NRCS funds to cost share a manure storage and Heavy Use Area (HUA) with a local dairy farmer. Before this project was installed, the farm pushed manure from the heifer barn to a small uncovered concrete slab. Their cattle also spent most of their time in the feedlot on a concrete slab that sloped downhill to a road side ditch. During rain events, the nutrient rich runoff from the feedlot and manure storage areas would flow into a tributary to Oak Orchard River. The farm was able to install a new covered feedlot, two new manure storages, and decommission both the old barn with

uncovered feeding areas and the uncovered manure stockpile area. The total cost of this project was \$568,600.00. FLOWPA paid \$101,328.09 (17.8% of the total cost) while the NRCS and the farm paid for the remaining amount.

HEAVY USE AREA #2 (HUA)

FLOWPA funds were used to improve the farm's manure lagoon that contains manure from the cattle barn, low flow leachate from the farm's silage bunk and milk house waste, and is surrounded by a gravel driveway for loading the manure spreaders. If spills occurred during loading, they leached into the ground and excess runoff ran downhill into Otter Creek, which runs along the south side of the farm. The Orleans County SWCD used FLOWPA funds to build a new HUA that is pitched back toward the lagoon. The impervious concrete will prevent leaching into the ground and allow for easy cleanup if there is a spill. The pad is sloped towards the lagoon, so that if a spill does occur it will flow back into the lagoon and not off the pad into the surrounding area. The total cost of this project was \$9,365.88 of which FLOWPA paid \$7,024.41 (75% of total project cost) and the farm paid the remaining balance.



STREAM CROSSING



FLOWPA funds were used to install a stream crossing in the Oak Orchard Watershed to replace a severely undersized and collapsing culvert which was making it hard for the farm to access some of the fields and causing flooding issues. The landowner was going to revert to driving through the stream with their equipment to access their fields which would degrade the bank and stream bed in the process leading to erosion, sedimentation and potential pollution of the stream and ultimately, Lake Ontario. The new crossing was sized large enough so that it could

handle the amount of water flowing through the stream without flooding the surrounding areas and was embedded into the stream bed to allow for aquatic life to pass through them. The total cost of this project was \$26,980.00. FLOWPA cost shared this project with the farm and paid 75% of the total cost (\$20,235.00).

AGRICHEMICAL MIXING AND CONTAINMENT SYSTEM

FLOWPA funds were used to assist with engineering reports, operations and maintenance plans, emergency spill plans and construction specifications for a sloped concrete pad at a Niagara County Orchard to provide containment and control of any leaks or spills during sprayer filling operations or from containers used to store pesticides or herbicides. The containment pad was designed with a roof cover to prevent precipitation from collecting in the containment area and preventing the possibility of soil and groundwater contamination. The total cost of this project was \$53,351.94. FLOWPA paid \$18,580.74 (34.8% of the total cost) while the remaining amount was paid by the farm and NYS Grown and Certified AEM plan implementation funds.



SCHUYLER, SENECA AND ONTARIO COUNTY TOUR

A variety of FLOWPA members and stakeholders participated in touring eight FLOWPA supported projects throughout Schuyler, Seneca and Ontario Counties on September 26, 2023. Attendees included; **Kristy LaManche**, FLOWPA Program Coordinator; **Jerry Verrigni**, Schuyler County SWCD; **Jessica Verrigni**, Schuyler County SWCD; **Erin Peruzzini**, Seneca County SWCD; **Alex McGraw**, Seneca County SWCD; **Chris Creelman**, Seneca County SWCD; **Brittany Ward**, Seneca County SWCD; **Curtis Davis**, Seneca County SWCD; **John Hunt**, Seneca County SWCD; **Megan Webster**, Ontario County SWCD; **Betsy Landre**, Ontario County Planning Department; **Craig Pemberton**, Senator O'Mara's office; **Austin Kephart**, Senator Helming's office; **Chris Cicora**, NYS DEC Region 8; **Cecilia McAuliffe**, NYS DEC Region 8; **Abby Johnson**, NYS DEC Region 8; **Lewis McCaffrey**, NYS DEC Finger Lakes Hub; **Aimee Clinkhammer**, NYS DEC Finger Lakes Hub.

The retention pond is in the upper sub reaches of a highly devastated flood prone watershed of Seneca Lake and had been previously used for row crops. During the August 2018 flood event, Camp Meeting Road and many of its homes were destroyed. Several homes ended up in Seneca Lake itself. Steep slopes, inadequate infrastructure, and homes in flood plain areas make it nearly impossible to prevent this same scenario from happening again. The Schuyler County SWCD constructed a retention pond to aid in reducing the peak curve during high intensity short duration storms. This retention pond has the capacity to retain and slowly release over 650,000 gallons of stormwater runoff. By building many retention ponds in the same sub-watershed, there is now a significant reduction in overall peak flow to a downslope area. This project cost \$9,500 in materials, only \$6,000 of that was utilized from FLOWPA. A substantial amount of local in-kind services and equipment were utilized, as the pond was built with SWCD equipment and equipment operators.

RETENTION POND



CULVERT UPSIZING AND STABILIZATION



The culvert project, in one of the many old, now abandoned railroad beds, is located on a road utilized by a local vineyard to access a substantial amount of vineyard acres. There were two, vastly undersized galvanized culverts that failed catastrophically during a flooding event in the area and left a 12' plus vertical area of substantial erosion that was causing flooding of two driveways and New York State Route 414 itself. It was also contributing 88 tons of sediment, 170 plus pounds of nitrogen, and over 80 pounds of phosphorus annually to Seneca Lake, a AA drinking water source, in very close proximity to the Town of Hector drinking water wells. The total project cost would have

been \$40,000; however, with the use of local funding, SWCD equipment, SWCD and equipment operators we were able to complete the project with \$19,000 of FLOWPA funding.

CULVERT REPLACEMENT

The culvert replacement is located on a private road directly adjacent to Seneca Lake. Double undersized galvanized culverts had failed during a flooding event leaving 4 residents unable to reach their home and created a 20' plus vertical area of substantial erosion that caused complete failure of the road. It was also contributing 148 tons of sediment, 290 plus pounds of nitrogen, and over 140 pounds of phosphorus annually to Seneca Lake, a AA drinking water source. This culvert replacement project took an immense amount of aptitude by the Schuyler County SWCD's highly experienced equipment operators as it was one of the most difficult and dangerous site locations they have worked on in the last twenty years. The culverts were replaced with a 7' diameter nearly 14,000 lb steel culvert. Over 300 tons of rip rap were installed to stabilize the inlet and outlet areas. This project was quoted to the landowner association by multiple private contractors for well over \$100,000. The SWCD completed the project for just over \$42,000 in materials with \$10,000 of FLOWPA funding matched with just over \$31,000 from the landowner's association and a substantial amount of in-kind equipment and time from the SWCD, the Town of Hector Highway, Schuyler County Highway, and New York State DOT.



VINEYARD STORMWATER CONTROL



Seneca County SWCD used FLOWPA funds to install a water and sediment control basin to capture runoff from a 9-acre Cayuga Lake vineyard's watershed to help manage water in the vineyard, but also aid in down slope flooding and sedimentation impacting Cayuga Lake. The total project cost was \$8,239.00 of which FLOWPA contributed \$4,739.00 (57.5%).

WATER RETENTION AND WETLANDS



Ontario County SWCD, using FLOWPA funds, partnered with the Town of Geneva, a private landowner, and the Great Lakes Commission through the Conservation Kick Program to implement conservation practices on an agricultural parcel to install several conservation practices to create a vegetated, wetland buffer area along the edge of the agricultural field. This project not only provides water treatment for 42 acres of agricultural land, it also serves as wonderful habitat for wildlife such as birds, insects, amphibians, and so much more. This project cost \$39,282.00 and was completed over several years. FLOWPA contributed \$9,138.00 (23%) towards the project and the NYS Department of Agriculture and Markets – Agricultural Environmental Management Program helped pay for Ontario County SWCD staff time for project planning and technical assistance.

MANURE COMPOST FACILITY

Seneca County SWCD utilized FLOWPA funding to design and install a manure compost facility. Previously, manure was being pushed out of the barn to an area that bordered a water course causing nutrient loading to a nearby stream. A manure compost facility was constructed to provide a safe, dry storage location for the manure to compost before being land applied. Seneca County's FLOWPA program contributed \$3,319.46 towards this project. An additional \$25,000 was provided to this project through the NYS Department of Agriculture and Markets -Agricultural Environmental Management Program.



AGRICULTURAL BEST MANAGEMENT PRACTICES



With financial assistance from FLOWPA, the Ontario County SWCD installed a dual three-quarter acre water and sediment control basin on agricultural lands along Reed Road in the Town of Geneva to collect up-slope storm water and allow it to exit cropland in a non-erosive manner over several hours following a storm event. This project will protect down-slope agricultural land and public infrastructure; while reducing erosion from runoff. A grassed waterway to convey water exiting the system was installed and is maintained by the landowner. This project reduces the volume of water leaving the site from 20 CFS to 5 CFS for a 10-year storm. The total project cost was \$27,900, with

FLOWPA covering \$11,900 in heavy equipment and materials, engineering certification and a modest amount of technical assistance from SWCD. SWCD contributed seed and mulch and in-kind technical assistance. In addition, the Town of Geneva and the landowner contributed materials and land.

WATER AND SEDIMENT CONTROL BASIN (ASCOB)



Seneca County SWCD worked with a local vineyard owner to install a WASCOB to address on site erosion and help prevent the flooding of downslope lake homes. The project utilized FLOWPA funding (\$19,716.51), in addition to a grant from Seneca Lake Pure Waters Association's Sediment Nutrient and Pollution Reduction Program (\$9,750.00).

JEFFERSON AND LEWIS COUNTY TOUR

A variety of FLOWPA members and stakeholders participated in touring six FLOWPA supported projects throughout Jefferson and Lewis Counties on October 12, 2023. Attendees included; **Kristy LaManche**, FLOWPA Program Coordinator; **Patrick Crast**, Jefferson County SWCD; **Nichelle Swisher**, Lewis County SWCD; **Carla Yaw**, Lewis County SWCD; **Fred Munk**, Lewis County SWCD Board; **Assemblyman Ken Blankenbush**; **Tammie Nabywaniec**, Assemblyman Blankenbush's office; **Aimee Clinkhammer**, NYS DEC Finger Lakes Hub; **Emily Fell**, NYS DEC Great Lakes Program Office

RIPARIAN FOREST ENHANCEMENT

Jefferson County SWCD has utilized FLOWPA funding to address flooding, erosion, invasive species, and other water quality issues at their office and on adjacent properties to serve as a demonstration project and easily accessible site for public education and outreach. They have worked with the landowners to remove invasive species, plant native trees, stabilize the streambank, and install grassed waterways and drainage ditches to prevent flooding and filter out sediment and nutrients prior to entering waterbodies within the Sandy Creek watershed. FLOWPA funds (\$7,120.00) were used to pay for this project.



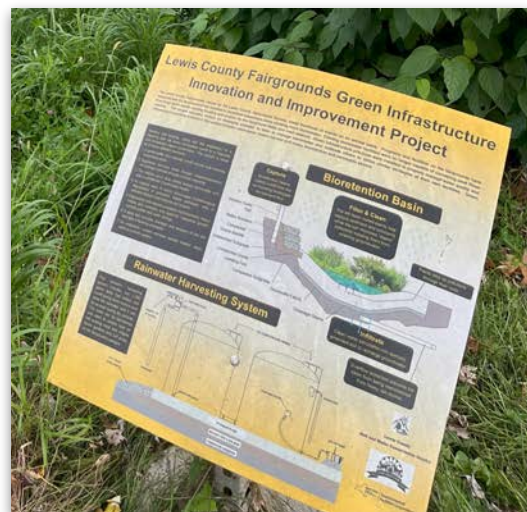
FOREST BRIDGE RECONSTRUCTION



Jefferson County SWCD manages approximately 5,500 acres of county land including 18 miles of recreational trails that are available for public use. FLOWPA funding was used at the Jefferson County Reforestation Land on Williams Road to replace an undersized stream crossing (bridge) at this multi-use public facility. The new stream crossing (bridge) will allow for all permitted public activities to continue safely; while also protecting the stream during timber management and harvesting practices so that heavy equipment is not driving directly into the stream. FLOWPA funds (\$8,807.40) were used to pay for this project.

GREEN INFRASTRUCTURE IMPLEMENTATION

FLOWPA funds were used by the Lewis County SWCD along with other financial support to assist with stormwater improvements at the Lewis County Fairgrounds. Due to facility expansions and development on the adjacent parcels, stormwater issues have been compounded with the ponding of water, ditch erosion, and flooding. FLOWPA contributed \$5,304 toward site assessment and technical assistance to help the Lewis County Agricultural Society (LCAS) apply for a grant to implement green infrastructure to address these stormwater issues. LCAS provided \$25,777 for the feasibility study that would ensure grant eligibility. These efforts were rewarded with a \$575,000 from the New York State Environmental Facilities Corporation grant to install bioswales, stormwater infrastructure, rain gardens and collection equipment, porous pavement and pavers throughout the fairgrounds.



WATER QUALITY MONITORING



Jefferson County SWCD is currently participating in a multi-year project to develop a Nine Element Watershed Plan for the Sandy Creeks watershed using a portion of their FLOWPA appropriation. The first phase of the project, completed in 2023, was water quality testing. District staff were trained by Upstate Freshwater Institute (UFI) to collect water samples from 14 sites around the watershed twice monthly. This data will be compiled and used to create a watershed model and subsequent Nine Element Plan which will help local producers, residents, and municipalities to qualify for a wider range of water quality grants and funding to protect the watershed by identifying a list of best management practices. To date, Jefferson County's FLOWPA program has contributed \$103,708.63 towards this effort.

STREAM GAUGE ON BLACK RIVER

Lewis County SWCD has expanded its water quality monitoring program over the years to include a total of 5 stations in the Black River Watershed. Water levels are monitored not only by the District and local emergency managers, but also town and county highway superintendents in areas that frequently flood. The Hudson River Black River Regulating District (HRBRD) contracted with the United States Geological Survey to develop a flow discharge curve. The Dadville location is used by the National Weather Service in river level forecasting for flooding. This emergency flood warning system and water quality monitoring station is funded by FLOWPA and costs an average of \$9,240 to maintain per year.



INVASIVE SPECIES ERADICATION



The Black River Watershed has an overwhelming population of Japanese knotweed calling for site specific management, as opposed to complete eradication in the watershed, in order to reduce the impacts of the species on the banks of the river. Lewis County SWCD identified an area on the Black River that runs parallel to the Pine Grove Road that has become a significant public hazard as the plant has grown up the bank, through the guard rail and into the pavement. The towering infestation is not only affecting the structure of the riverbank, but the guardrail and the pavement as well. The traditional practice of the highway department was to mow it to keep it down. The District worked with the highway department and

landowner to prevent mowing and allow the elimination of the Japanese knotweed from this site through stem injection. In order to be able to perform stem injection, the District staff became certified pesticide technicians through the NYSDEC certification process.

Unfortunately, the highway department's summer mowing staff was not made aware of the need to keep this site from being mowed in the first year. Despite this setback, stem injection was performed on 25 percent of this knotweed infestation with 90-95 percent success in eliminating viable plants with limited re-growth. Some plants that had stems too small for injection were foliar sprayed. Overall, a 150 foot by 16.5-foot section (or 2,457 square feet) of streambank was treated and knotweed eliminated in the first year. In years 2 and 3 an additional 150x40 foot section (6,000 sq ft) was treated. The three-year treatment area totaled 0.2 acres at a cost of \$12,216.

FLOWPA would like to extend our sincerest thanks to those that have participated in our program to address local water quality concerns - especially those landowners, producers, and municipalities whose projects were featured in the 2023 Watershed Tours. Program Coordinator Kristy LaManche is already planning the 2024 Watershed Tours which will feature a diverse assortment of FLOWPA-supported projects in different parts of the Finger Lakes - Lake Ontario drainage basin. The 2024 Watershed Tours will be recapped in a future installment of the FLOWPA Fundamentals.



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A publication of
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FLLOWPA membership includes the following
New York State counties wholly or partially in the Lake Ontario Drainage basin:

Allegany, Cayuga, Chemung, Cortland, Genesee, Hamilton, Herkimer, Jefferson, Lewis, Livingston,
Madison, Monroe, Niagara, Oneida, Onondaga, Ontario, Orleans, Oswego, Schuyler, Seneca,
Steuben, Tompkins, Wayne, Wyoming, Yates

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