

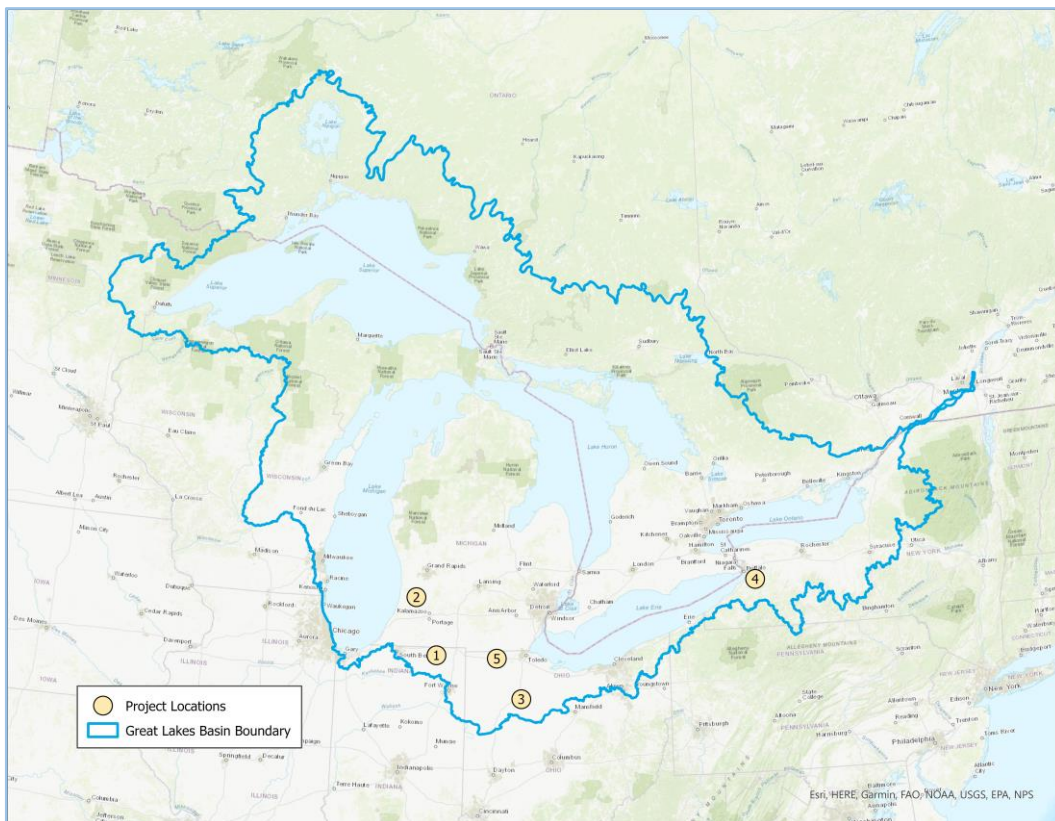
Great Lakes Sediment and Nutrient Reduction Program

REPORT ON AGREEMENT 8 OUTCOMES

The **Great Lakes Sediment and Nutrient Reduction Program** is a state and federal partnership managed by the Great Lakes Commission in cooperation with the USDA's Natural Resource Conservation Service (NRCS), U.S. EPA, and the eight Great Lakes states. Through this program, the GLC has provided grants to nonfederal units of government and watershed organizations to install erosion and sediment control practices in the Great Lakes basin for over 30 years.

Since 2010, funding for the program has been provided by the Great Lakes Restoration Initiative. The funding has been directed to innovative projects that help address sources of nutrient and sediment losses within the basin. The program is directed by a Task Force that includes representatives from the states, NRCS, and U.S. EPA; the Task Force identifies priorities for funding and reviews proposals to award funding each year.

The 2018 grantees faced ongoing issues due to the COVID pandemic. GLC worked with grantees to amend project timelines and scope as needed, extending the project length for several grantees.



Locations of Agreement 8 grantees. Overall, five projects were funded through this agreement. Each number corresponds to a description below.

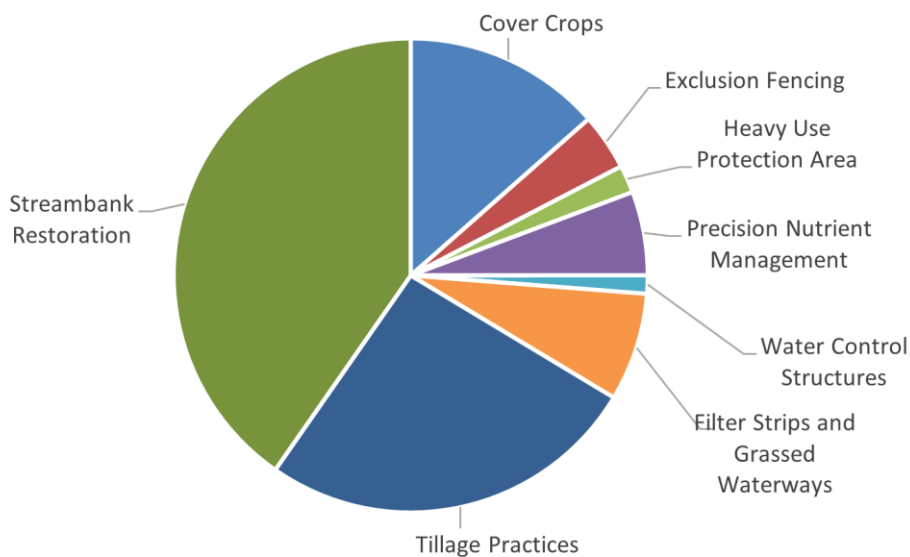
Great Lakes Sediment and Nutrient Reduction Program BY THE NUMBERS

FIVE GRANTS, \$794,744 IN TOTAL FUNDING

State	Number of Grants	Total Funding
Indiana	1	\$138,000.00
Michigan	1	\$180,000.00

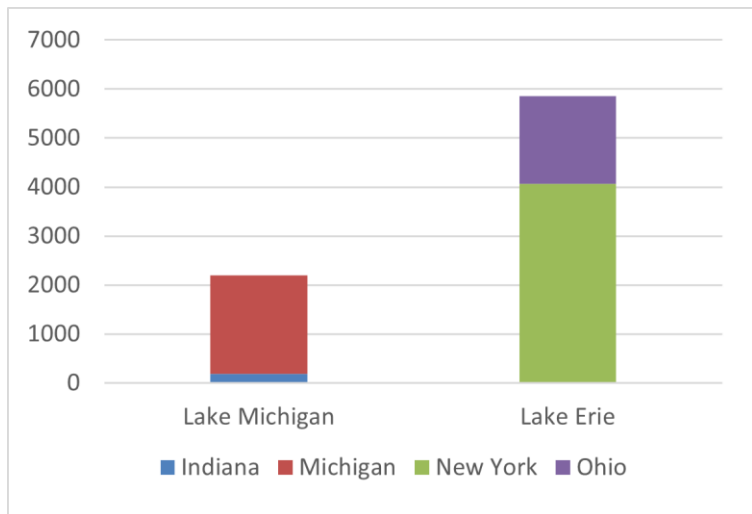
State	Number of Grants	Total Funding
Ohio	2	\$315,140.00
New York	1	\$161,604.00

AGREEMENT 8 GLSNRP PRACTICES



Under Agreement 8 the Great Lakes Sediment and Nutrient Reduction Program funded a variety of best management practices.

TOTAL PHOSPHORUS REDUCTIONS AGREEMENT 8



For Agreement 8, practices were installed in four states with total phosphorus reductions occurring in the watersheds of two Great Lakes. Close to half of funds were spent in Ohio for this award, with three of the five projects benefitting the western Lake Erie basin.

Phosphorus reductions were estimated using the Region 5 model, STEPL, and NTT, which were translated to estimated phosphorus reductions for the life of the installed practice. Estimated total phosphorus reductions amount to 3,644 pounds per year. For more information, see Appendix 7C.

The average lifespan for practices installed under this agreement is 2.4 years.

1. Fawn River Sediment and Phosphorus Reduction

LaGrange County Soil & Water Conservation District (Indiana)

The goal of the Fawn River Sediment and Phosphorus Reduction project was to utilize barnyard manure management and filter strips to reduce pollutant loads from land owned by Amish producers in the Fawn River watershed. Though COVID presented a challenge to the project timeline and a change in the target population reduced the number of livestock producers in the area, LaGrange County SWCD was able to adjust to produce sediment and nutrient reductions through other means.

After some amendments to their project plan, the project oversaw the installation of 6,700 linear feet of exclusion fencing and 3,200 square feet of heavy use protection area management within the watershed. Additionally, 587 linear feet of bank stabilization was established throughout the watershed to reduce sediment loading to the Fawn River. Six producers benefitted from this GLSNRP project and commented on the improvements to local water quality.

“I rotationally graze beef cattle on my farm and my in-laws farm in northeastern LaGrange County, Indiana. The Fawn River runs through both our farms. The Great Lakes Commission grant allowed me to make more efficient use of my grazing lands, while at the same time helping to maintain the condition of streambanks and keep the river water clear and clean. I’m happier, my cattle are happier, and I’m sure the county surveyor is happier as well. We put in close to 3,500 lineal feet of exclusion fence with the help we received from this grant!”

Zachary Bolla
Fawn River watershed beef grazier



LaGrange County SWCD in Indiana installed a combination of practices including exclusion fencing (left) and shoreline stabilization (right).

2. Performance-Based Agricultural Conservation Project in the Gun River Watershed

Allegan Conservation District (Michigan)

Allegan Conservation District's GLSNRP project utilized a pay-for-performance model for agricultural BMPs. In total, the project supported 345.6 acres of reduced till management, 246.3 acres of no till management, 8.4 acres of cover crops, and 4.2 acres of filter strips across three producers for a total

"The GLSNRP staff was extremely helpful in supporting our project through administrative hurdles, allowing us to focus on supporting conservation in the critical areas of our county."

Brian Talsma
Allegan Conservation District

reduction of 2,011.95 pounds of phosphorous and 5,409.17 pounds of nitrogen. Payment rates were set at \$150 per pound of phosphorus reduction as modeled through the [Great Lakes Watershed Management System](#).

Challenges were presented in that two fields enrolled in the program were removed due to a lapse in the lease agreement and were no longer under the control of the enrolled producer. This project also highlighted interesting insights into the pay-for-performance model. The current

federal cost-share rates for no till were not as competitive as paying for pollution reductions; therefore, there was significant interest for no till management from this project. Conversely, pay-for-performance was not effective in incentivizing cover crops because pollutant reductions from cover crops are typically low, and this led to lower payment offerings. This was reflected in the larger acreage for tillage management compared to cover crops in the project outcomes.



Cover crops planted with a pay-for-performance model in Allegan County, Michigan.

3. Sediment and Phosphorus Reduction in the Tiderishi Creek Watershed

Blanchard River Watershed Partnership (Ohio)

With a project award of \$147,330, the Blanchard River Watershed Partnership (BRWP) reached out to landowners in the Tiderishi Creek watershed with land bordering the creek. Interested landowners enrolled in cost share to install 1,178 acres of cover crops, 1,436 acres of conservation tillage, and 910.5 acres of precision nutrient management plans in total. Additionally, about 1,800 square feet of the creek underwent an in-stream sediment removal process to remove approximately 6.3 tons of sediment which was spread onto the farmer's field after heavy metal testing.

This project also included an innovative experiment to test a phosphorus filter in the creek. Streamside Systems, Inc. installed three panels containing PO_4 sponge media developed by MetaMateria designed to capture and trap dissolved phosphorus. The panels were deployed for one year from 2018 to 2019 and then for nine months from March to December 2021. The initial testing revealed 10.2 pounds of phosphorus captured. After clearing sediment and placing the panels on a pallet to prevent sediment from covering them, the second round of testing showed 13.9 pounds of phosphorus recovered. The experiment showed that the filter would be useful in areas with limited sediment and the BRWP is currently identifying locations and interest to use this filter.

Although complications with timing due to COVID and communication problems with grantees enrolling fields in the H2Ohio program hindered some project work, all project goals were met and additional project work was completed to add conservation tillage acres beyond the original proposal's planned amounts.



Installation of panels containing PO_4 sponge media to capture dissolved phosphorus.

4. Upper Buffalo Creek Sediment and Nutrient Reduction Project

Erie County Soil and Water Conservation District (New York)

To prevent nutrient and sediment loading into the eastern basin of Lake Erie, the Erie County Soil and

“The Great Lakes Sediment and Nutrient Reduction Program has been an integral tool for the Erie County Soil and Water Conservation District’s efforts to mitigate streambank erosion issues and reduce agricultural sources of nonpoint source pollution impacting the Buffalo Creek Watershed.”

Mark Gaston
Erie SWCD

Water Conservation District employed a two-pronged approach within their GLSNRP project. One strategy focused on streambank stabilization with riparian buffers, while the other focused on agricultural management on fields within the Buffalo Creek watershed, many directly adjacent to the stream channel.

Despite higher than average material costs during the COVID pandemic, Erie County SWCD exceeded all projected goals due to secured additional in-kind funding from state resources. In total 2,620 feet of streambank were stabilized to prevent erosion, while 1,285 feet of riparian buffers were also installed utilizing native tree species. Four

participating farms created nutrient management plans for manure and fertilizer application on a total of 3,291 unique acres. Cover crops were also planted on 329 acres.



Streambank stabilization with riparian buffer plantings on Buffalo Creek in Erie County, New York.

5. Western Fulton Phosphorus & Sediment Reduction

Fulton County Soil and Water Conservation District (Ohio)

The agricultural and highly erodible watersheds of Brush Creek, Deer Creek, Flat Run, and Stag Run were the focus of Fulton County SWCD’s GLSNRP project. Using a project award of \$167,810, a multitude of

practices were installed across 39 unique producer fields. In total five acres of filter strips, 13.5 acres of grassed waterways, and 422 acres of cereal rye cover crops were planted. Additionally, three water control structures and 15 erosion control structures were installed.

“Landowners were extremely pleased with the results of this grant and are eager to install more conservation in the future. Landowners are cooperative with tours, installing signs and educating the public. We look forward to working with GLC on future grants.”

Pete Carr
Fulton SWCD

Due to challenges with weather, COVID, and landowner interest in certain practices over others, original practice goals shifted during the project duration. Fulton County SWCD shifted funds to install one-third of the projected filter strips; however, this shift allowed for the installation of more erosion control structures than the proposed 13.



Landowners install conservation practices ranging from cover crops (left) to erosion control structures (right).

Disclaimers

This material is based upon work supported by the Natural Resources Conservation Service, U.S. Department of Agriculture, under award NR183A750022C001 funded by the Great Lakes Restoration Initiative.

Any opinions, findings, conclusion, or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the views of the U.S. Department of Agriculture.

This publication was authored by Great Lakes Commission staff Nicole Zacharda, with help from Great Lakes Sediment and Nutrient Reduction Program grantees.

The Great Lakes Commission is a binational government agency established in 1955 to protect the Great Lakes and the economies and ecosystems they support. Its membership includes leaders from the eight U.S. states and two Canadian provinces in the Great Lakes basin.

The GLC recommends policies and practices to balance the use, development, and conservation of the water resources of the Great Lakes and brings the region together to work on issues that no single community, state, province, or nation can tackle alone.

