

# Advancing Systematic and Fundamental Changes in Agricultural Water Resources Management

A team led by Kieser & Associates under funding from the Great Lakes Protection Fund (GLPF) set out to reshape traditional agricultural operations by demonstrating approaches that merge drainage management authority objectives with conservation services that follow circular economy principles. The project aimed to improve water quality, rebuild soil health and increase crop resiliency, while benefiting farm economics and creating new business opportunities throughout the region.

Agricultural landowners in legal drainage districts must pay assessments to maintain and improve the public drainage systems that serve them. These assessments are generally based purely on acreage and/or linear extent of the adjacent drainage. This project tested new methods for calculating drain assessments that could reward farmers who implement land management practices that improve soil and water quality. This adaptive drain fee assessment model presents the opportunity to test market-based approaches that work in support of the model.

In addition to a new drainage fee assessment that was piloted in LaGrange County, Indiana, the team tested two other treatment approaches – an innovative phosphorus filter technology and a new compost application. These pilots yielded information on both water quality benefits and economic opportunities associated with phosphorus capture. The project created and propelled a community of practice that includes drainage district authorities, conservation managers, agricultural retailers, commodity buyers, farmers, and food waste generators that will extend this work beyond the initial Great Lakes pilot locations.



This project resulted in a new drain assessment methodology being piloted on a total of 33,369 acres over the course of 2020-2021, raising a total of \$321,000 for drain improvements and maintenance in LaGrange County, Indiana. Reception from both landowners as well as drainage authorities was very positive, and the county will be switching to the new methodology for all future projects. K&A will continue to work with the St. Joseph River Basin Commission to expand the use of this methodology to additional counties.

The phosphorus filter technology that was piloted exceeded expectations and has developed into the CAPTURE™ system, which K&A and the GLPF are further collaborating on with the goal of commercialization. As of early 2023, this system has been piloted in 3 locations throughout Michigan and Wisconsin with 4 additional installations in progress.

### *Contact:*

Mike Foster  
Environmental Engineer  
Kieser & Associates, LLC  
269-344-7117  
[mfooster@kieser-associates.com](mailto:mfooster@kieser-associates.com)

*Project Costs:*

\$1,135,000

*Project Duration:*

2017-2021