

# Conservation Drainage

*To meet the goals of the Iowa Nutrient Reduction Strategy, farmers need practices to reduce nutrients lost through subsurface drainage while maintaining agricultural productivity. Edge-of-field conservation drainage practices are some of the best performing and most cost-efficient ways to reduce nutrients from agricultural land. However, most of them provide little or no economic return to the farmer. The conservation drainage research and outreach activities conducted by ISA Environmental Programs and Services (EPS) continue to help make these practices more effective, easier to install and provide the rationale for public and private financing that will increase implementation.*

## Drainage Water Recycling

Drainage water recycling is one of the few edge-of-field practices that can provide an economic benefit to the farmer as well as downstream water quality improvements. In 2018, EPS collaborated with the regional [Transforming Drainage Project](#), the Iowa Department of Agriculture and Land Stewardship and Iowa State University to evaluate the potential for this practice in Iowa.

Modeling results of potential water supply, irrigation demand, and yield improvement from supplemental irrigation show promise for drainage water recycling. Field sites are being developed to monitor actual performance of the practice for both irrigation benefit and nutrient loss reduction at four locations in Iowa.

## Other Activities

After performing for nearly 10 years, ISA recently recharged one of the first installed denitrifying bioreactors with new woodchips. The used woodchips were collected from the bioreactor for further study. The EPS team is working with the University of Illinois, USDA ARS and Iowa State University to learn more about woodchip decay and implications for recharging aging bioreactors.

Members of the EPS team are active in outreach and education on conservation drainage practices as it is a frequent topic at events such as field days and workshops. ISA also partners regularly with Iowa State University Extension and Outreach on conservation drainage programming. Additionally, EPS staff have contributed to conservation drainage publications through the [North Central Region Water Network](#) and Transforming Drainage projects.

An innovative, walk-through of conservation drainage practices developed by ISA, along with a new summary factsheet, is part of the [Ten Ways](#) on-line package.

Chris Hay, ISA senior environmental scientist, co-chairs the Conservation Drainage Working Group of the [Conservation Infrastructure](#) (CI) initiative, led by the Iowa Agriculture Water Alliance and Iowa Department of Agriculture and Land Stewardship. The CI initiative seeks to increase the investment and engagement from both public and private sectors in implementing the Iowa Nutrient Reduction Strategy. In 2018, the [Conservation Drainage Working Group](#) developed a set of recommendations to increase conservation drainage implementation across the state.



**The Conservation Infrastructure (CI) Initiative group meets several times a year to monitor progress and share ideas between the three working groups: Strategy, Cover Crops and Conservation Drainage, which Chris Hay co-chairs.**