

# Tackling drainage and water quality



Landowner Craig Brose, right, and Wright SWCD wetland resource conservationist Andrew Grean talk about the pond that straddles land owned by Brose and a neighbor. It lies within the 20,000-acre Wright County Ditch 10 drainage area, and is designed to alleviate flooding within the ditch system and decrease downstream nutrient- and sediment-loading. The ditch runs through the pond, which contains a sediment trap that will require clean-out every two or three years. The ditch authority is responsible for pond maintenance.  
**Photo Credit:**  
 Ann Wessel, BWSR

## Wright County farmers, Ann Lake residents anticipate improvements from the SWCD’s \$490,000 multipurpose drainage management Clean Water Fund-supported work



**Video** shows storage and treatment pond, Ann Lake

HOWARD LAKE —A Wright Soil & Water Conservation District (SWCD) project designed to improve both agricultural drainage in farm fields and water quality in a series of impaired lakes and rivers finished this season on a branch of County Ditch 10 (CD 10) a few miles upstream from Ann Lake.

The \$490,000 project — a 12-acre easement including a 10-acre storage and treatment pond that will also reduce fluctuations in water levels downstream — draws from three Minnesota Board of Water and Soil Resources (BWSR) funding sources: a Clean Water Fund grant, Disaster Relief Assistance Program dollars and a North Fork Crow River One Watershed, One Plan grant.

One of the largest ditch systems in the county, CD 10 drains about 20,000 acres. The 16-mile-long system outlets

into nutrient-impaired Ann Lake, which flows through connected lakes and ditches to the North Fork Crow River and, eventually, the Mississippi River.

The pond treats about 10% of the CD 10 watershed — all 2,100 acres drained by the lateral it intercepts.

When it was established in 1906, the ditch was 6 miles long. The ditch system expanded as row crops became more prevalent and communities grew. But it couldn’t keep up with tiling, drainage from laterals outside the system, and increasingly heavy rainfalls.

“Over time, without maintenance their capacity to drain water off those lands

**“ Drainage and water quality — we need both of them, and we need that farmer buy-in. ”**

— Charlie Borrell, Wright County commissioner

is reduced. So they're over-burdened and under-sized. I think that's a big issue with County Ditch 10," said Matt Detjen, Wright County agriculture and drainage supervisor.



**Detjen**

The ditch hasn't been cleaned out for at least 60 years. Accumulated sediment and downed trees have restricted drainage further.

"Areas that were farmed 10 years ago, they can't get equipment in there anymore," Detjen said.

A recent petition for ditch maintenance coupled with lakeshore property owners' concerns about increasingly frequent algal blooms and fluctuating water levels prompted Wright SWCD to pursue multipurpose drainage management.

"If there's momentum to do repairs and invest in cleaning the ditch, can it be done in a way that it not only serves the benefited landowners but can also address some of those water-quality issues?" said Wright SWCD wetland specialist Andrew Grean.

Plans to install a series of smaller best management practices changed after two landowners agreed to the pond, which has the potential to achieve much greater sediment and phosphorus reductions.

By storing water and allowing sediment to settle out, the pond relieves pressure on the over-burdened ditch system and improves drainage along the main artery. It will keep an estimated 514 tons of sediment — 40 dump truck loads' worth — and about 271

## Wright County project details

<p><b>PARTNERS:</b> Wright SWCD, Wright County Commissioners, Wright County Drainage Authority, benefited landowners, Lake Ann Improvement Association, ISG, BWSR</p> <p><b>IMPAIRMENTS:</b> Ann, Emma and Little Waverly lakes are impaired for aquatic</p>	<p>recreation due to excessive nutrients/eutrophication. Twelvemile Creek is impaired for aquatic life due to low oxygen levels. The North Fork Crow River is impaired for bioassessments, E. coli, dissolved oxygen and turbidity.</p> <p><b>CROW RIVER CONNECTION:</b> A Minnesota Pollution Control</p>	<p>Agency (MPCA) snapshot of Upper Mississippi River health from Lake Itasca to St. Anthony Falls noted that nutrient pollution in the Mississippi River doubles at the confluence of the Crow River at Dayton. It lists the Crow River as the No. 1 contributor of Mississippi River nutrient pollution in this stretch.</p>
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pounds of phosphorus out of downstream waters annually. Phosphorus feeds the algae that can turn lakes green.

Annual reduction estimates for the original plan were 14.7 tons of sediment and just under 23 pounds of phosphorus.

Craig Brose of Victor Township won't benefit directly from the pond that straddles part of his field. But in order to advance the ditch clean-out, he and a neighbor sold easements to the ditch authority. They retain ownership of the land.

"We need to get this ditch cleaned out," Brose said. "It needs some attention."

Brose said his great-great grandfather was among those who petitioned in 1901 for the ditch to be built. His father petitioned in the 1980s for a clean-out. The CD 10 system drains about 1,000 acres of Brose's 3,200-acre corn and soybean operation.

Benefited landowners' combined share of the pond project will total about \$180,000.

"Our role of leveraging grant funds is definitely critical to make this happen. To simply ask them to pay for the total cost — potentially half a million dollars for a stormwater pond — I don't think that would have had a chance," Grean said.

Now, water from 2,100 acres drained by the lateral flows through the pond before it's metered into CD 10 through a culvert with a smaller opening that slows its flow. The pond retains water after heavy rains.

"I think of it as a yellow light on the ditch system, to slow the water down. It's going to drop out sediment when you have that decrease in velocity. As the main line can draw down and pass that water through, then the pond will draw down," Grean said.

A rock weir is designed to handle overflow for a once-every-100-years rainfall.

Models estimated the pond would decrease water levels immediately downstream by about 6 inches.

"We're hoping it results in less pollutants coming into Lake

Ann — less sediment," said Gerry McMillan, Lake Ann Improvement Association past president.

McMillan, who moved into his new lakeshore retirement home last year, said association members viewed the project as a good first step. About 65 houses ring the lake. Keeping topsoil on the land is good for farmers, too, McMillan said.

"It's something where we have to work together," McMillan said.

Wright County Commissioner Charlie Borrell, whose district includes Victor Township, is the commissioners' liaison to the SWCD. He said the multipurpose drainage management project was a first for the county, and one of the SWCD's largest undertakings.

"We're getting the sediment out of the system. We're slowing the flooding for Lake Ann. It just has a lot of benefits," Borrell said. "(Wright SWCD) has taken on a lot of soil erosion projects, and we've got buy-in from our farmers like nobody's business."

The success of other conservation projects inspires that buy-in. Borrell cited a large water and sediment control basin near Cokato Lake as one highly visible example that has improved productivity and curbed erosion.

"Drainage and water quality — we need both of them, and we need that farmer buy-in," Borrell said.

Wright County has 44 county and joint ditch systems encompassing 156 miles.

"We think it's a great project that a lot of our other drainage systems could use," Detjen said.