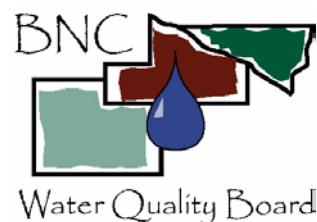


2003 Year in Review

By Kevin Kuehner and Scott MacLean

January 16, 2004



This year marks the 12th anniversary of the creation of the Joint Powers Board. During that period the board has evolved into a major grassroots leader in water resource protection. None of that would be possible without the partnerships secured along the way. To commemorate those partnerships and showcase the many great things accomplished by this Board, I am excited to unveil a website that was created this past year. The website will feature the Water Quality Board, partners and respective projects. It will be a one stop clearing house for Board activities and serve as an example that federal, state, county and private partnerships can have a profound impact on water quality. As water resource related issues continue to grow and federal and state policies like TMDLS, NPDES Phase II, and the Conservation Security Act take hold organizations like the BNC Water Quality Board will become ever more critical in the years ahead.

Kevin Kuehner

Little Cottonwood Clean Water Partnership

The Little Cottonwood River project completed its third year of the implementation phase in 2003. Our education and enrollment efforts focused on two continuous CRP options in the watershed.

—Continuous CRP filter strips: A large potential exists for establishing filter strips along ditches and streams in the watershed. Landowners were mailed aerial photos illustrating their eligible land and estimates of the payments they could receive if they enrolled in CRP.

—FWP: The Farmable Wetland Program is aimed at enrolling small prairie potholes in CRP. Landowners can enroll up to 5 acres of farmable wetland and a 3:1 buffer around the wetland. Eligible landowners within the Little Cottonwood watershed were identified by staff and proposals were sent to these landowners. Our efforts have been aimed mostly at areas on the edges or corners of fields as these wet areas are more likely to be enrolled.

Through letters, visits, and/or phone calls, 155 landowners were contacted and provided with information on these CRP options. Twenty-one of the landowners contacted expressed interest in enrolling in CRP now or in the future. We completed 10 topographic surveys on areas suitable for wetland restorations. Three landowners signed up wet areas for the FWP option totaling 32.3 acres. It is not known at this time how much acreage was enrolled in filter strips. In cooperation with local SWCD, FSA and NRCS offices, we continue to work with the landowners that expressed interest in the conservation programs, providing technical information and revised proposals and maps. There is still a lot of potential for enrollment in conservation programs in the watershed; thus there is a lot of potential for water quality improvements.

Between CRP and CREP over 4,000 acres have been enrolled by an estimated 150 landowners within the 170 square-mile watershed. This conserves about 16,000 tons of soil, and helps prevent an estimated 4,500 pounds of phosphorus and 80,000 pounds of nitrates from entering the river each year!



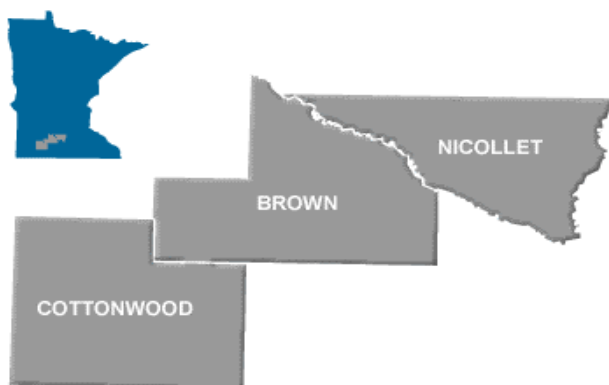
State of the art milk house wastewater treatment system (flocculator) installed at the Steve Hoffman Dairy Farm. Federal EQIP funds were matched with watershed funds to help cost-share this experimental treatment system. Recent water tests show 87-98% reductions in water pollutants.



Website Debut!

After many months of planning, and organizing a web page featuring the BNC Water Quality Board was produced with the help of Kim Musser and the Water Resources Center. The home page features links to everything and anything the board has helped coordinate and implement regarding water quality. A highlight of the site includes a virtual tour of the Little Cottonwood and Seven Mile Creek Watershed Projects. In addition, users will have access to publications, water quality data, and technical and educational information. Having this information on-line will consolidate our information and save time and printing costs in the future. The website will provide watershed residents and stakeholders a way to easily access watershed and water quality information. The site is a work in progress so your comments and feedback will be appreciated. Check it out!

<http://mrbdc.mankato.msus.edu/org/bnc/index3.html>



The Brown Nicollet Cottonwood Water Quality Board is a multi-county alliance in Minnesota with an interest and commitment toward the long-term protection and improvement of water quality.



Proactive Watershed Management

Agricultural drainage is a necessary practice on farmland in Brown, Nicollet and Cottonwood Counties. Although agricultural production has benefited greatly from agricultural drainage, there are concerns about its potential environmental impact. Major concerns include changes in hydrology, water quality, aging and overloaded ditch systems and loss of wetlands. Disputes over drainage have become commonplace, and often aimed at local units of government in the form of litigation during the public ditch hearing process. For instance, in Seven Mile Creek Watershed alone there have been two large disputes against the County regarding action or inaction with respect to drainage related issues and the possible downstream impacts. On a more recent dispute a local conservation organization has proposed possible litigation against Nicollet County regarding a deteriorated dam that has not been fixed. The dam



which is used to maintain the level of a duck hunting lake, deteriorated over the years and in about 1970 a petition was filed by some landowners to clean out the ditch. The permit was granted by the county, apparently with a condition the dam be replaced - at about six inches higher than its previous level. For unknown reasons, the work was never done.



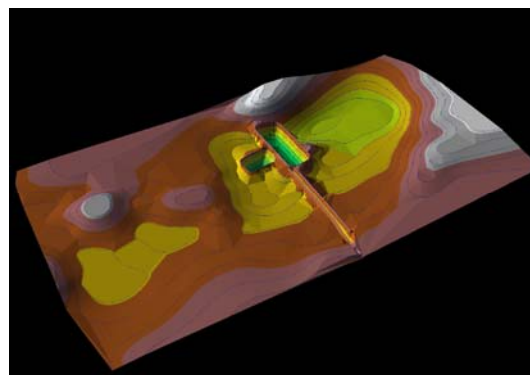
Adjacent drainage tile routed into newly restored wetland basin

In exchange for proposed drainage enhancements to CD 29, a work group identified a restorable wetland and fixing this stream bank erosion site to help offset downstream concerns.

This past year project staff have worked to develop proactive solutions and tools to help address these issues before they turn into litigation, all while striking the balance between the needs of modern agriculture and natural resource conservation.

Case Studies

- ♦ Farming a different Crop—Using Wetlands to Farm Nitrogen out of the System. In just 8 months over 130 acres of wetlands were restored in the SMC watershed. Adjacent public and private drainage tile is routed into the wetland to treat nitrate before it enters the surface water. Farmers are paid a sizeable incentive through our program to “farm” nitrate out of the tile. Water will be monitored to assess the treatment effectiveness.
- ♦ CD 29 Holistic Planning—Landowners in the northern portion of the watershed have petitioned to improve the drainage of public ditch tile 29. We have developed a pro-active work group of lawyers, engineers, petitioners, DNR and County officials to address the downstream concerns. Stabilizing a stream bank erosion site and restoring a nearby wetland have all been identified as ways the project can demonstrate or be “credited” for mitigating downstream concerns.

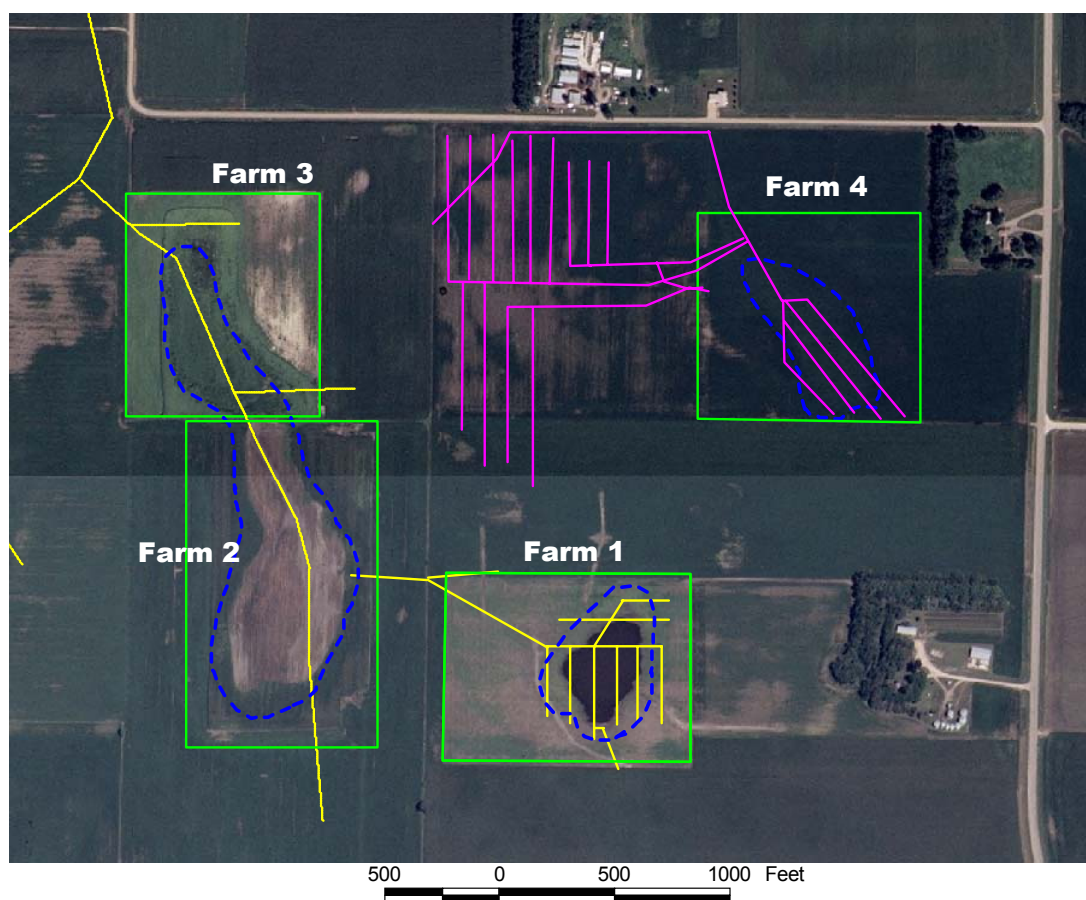


3D View of the proposed drainage ditch and storm water wetland treatment system in the St. Peter Wellhead Area



Proactive Watershed Management

- ♦ Wellhead Protection Wetland Treatment System—An area within the drinking water supply area for the City of St. Peter has long been recognized as a major contributor to the city's groundwater pollution. The area is where nitrate laden drainage water from a county ditch discharges into the sand prairie just west of St. Peter. We are working with the city to develop this area as a wetland treatment system to remove the nitrate before it enters the groundwater. At the same time the design would incorporate storm water treatment for expanding housing subdivisions.
- ♦ CD 58 County Ditch Tile Impoundment and Demonstration Area— A half section area located in the SMC watershed is the focus of a drainage management demonstration site. Four different farmers have recently enrolled part of their land into conservation set aside programs. The conservation areas were designed to intercept public and private drainage tile systems to maximize water quality and quantity treatment.



The map above outlines the layout of the drainage management demonstration project. At farm 2 and 3, a branch of CD 58 will be diverted into a restored wetland. This project will go through the county ditch impoundment procedures of State Ditch Law 103E. At farm 1 and 2 private drainage tile has been diverted into recently restored wetland basins.

Groundwater Vulnerability Project A Water Resource Protection Management Tool

The Groundwater Vulnerability Project continued its implementation phase in 2003. The project was applied to fourteen conditional use permit applications in Brown and Nicollet Counties. The majority of the applications were located in areas with low to medium probability of groundwater contamination. All of these permits were approved with no additional conditions to protect groundwater. One permit in Nicollet County was approved with additional conditions because the location had a high probability for groundwater contamination. The additional conditions included perimeter tile monitoring and soil tests for manure spreading acres. The technical committee met in October to discuss the future of the project and its evaluation phase. Planning and Zoning members from the three counties will be surveyed for their feedback on the project. Posters summarizing the project were made and distributed to the county zoning offices and the technical committee. The project will continue to be applied to permit applications and the final report will be completed in the spring of 2004. Upon completion of the 319 grant, the county Planning and Zoning personnel will continue to apply the groundwater vulnerability maps to incoming permit applications.



County Planning and Zoning Officials discuss applications of the Groundwater Vulnerability Project at a recent meeting.

St. Peter Wellhead Nitrogen Rate Validation Study Completed

A three year study to determine economically optimum nitrogen rates for corn production was completed in 2003. Results verified UM Recommendations that 120 lbs. of nitrogen maximized yield and profit and any rate over may increase the chances of nitrate contamination to groundwater supplies. The three year study on 15 fields found that between 90-120 lbs./N per acre was the optimum rate. A report summarizing the study can be downloaded at the BNC website. A similar study will continue in the Seven Mile Creek and Little Cottonwood River Watershed Projects.



St. Peter Wellhead Protection Nitrogen Rate Results

October 2003

A Demonstration Project Funded Through
Section 319 of the Federal Clean Water Act

Headlines

- ◆ Three Gustavus Adolphus College Interns volunteer throughout the year; Nhia Yang, Rich Heilman and Adam Cordes.
- ◆ A Historical Airphoto Project began in the fall of 2003. Photographs from the late 1930s to present are scanned and registered for use in GIS. Information is used for wetland restoration planning, and locating abandoned wells.
- ◆ Helped coordinate efforts to resolve issues with a failing dam west of St. Peter.



- ◆ Helped support Gustavus Adolphus College application for National Science Foundation Grant to integrate water quality coursework into chemistry and geography departments.
- ◆ June—Presented at the National Farm Bureaus Watershed Heroes Conference in St. Peter.
- ◆ June— Perimeter tile monitor sampled at Northern Plains Dairy for second year.
- ◆ Provided input to Federal EQIP cost share allocation funding.

- ◆ FANMAP survey completed for Seven Mile Creek Watershed. Survey provided information on farming practices.
- ◆ 100 proposals covering over 900 acres of CRP eligible lands were sent to eligible landowners in Seven Mile Creek Watershed.
- ◆ 200 acres of potential wetland restorations were surveyed.
- ◆ Planted willow cuttings, fascines, trees and native prairie plants as part of a stream bank stabilization and fish habitat demonstration project in Seven Mile Creek Park.
- ◆ Coordinated efforts to help St. Peter with storm water and agricultural drainage issues.



- ◆ Seven Mile Creek Fish Survey with MDNR conducted in September.
- ◆ June—Crop residue survey for SMC watershed completed.
- ◆ Nutrient BMP Insurance Pilot implemented at Red Top Farms.
- ◆ Installed 22 metal signs at various locations to increase awareness of the St. Peter Wellhead Protection Area and Seven Mile Creek Watershed.
- ◆ Citizen Stream Monitoring Program up and running for Seven Mile Creek.

- ◆ Groundwater vulnerability and watershed posters created and distributed to county and state offices.
- ◆ November—Milk house wastewater treatment system installed at dairy in LCR watershed.

Water Resource Presentations and Related Educational Events 2002

	<i>Attendance</i>	<i>Month</i>
Children's Water Festival-Mankato	100+	March
N-Rate Validation Meeting-Mankato	60+	March
Watershed Heroes Conference-St. Peter	80+	June
MN Public Works Association-Minneapolis	60+	October

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