

## Incentive Programs Help District Residents Improve Water Quality

Several incentive programs continue to be available to residents interested in protecting water quality in District lakes, rivers, and streams.

### Shoreline Buffer Incentive

District residents with lake or riverfront property can receive a one-time incentive of \$250 to plant a shoreline buffer. These buffers of beautiful native plants protect water quality by preventing sediment and nutri-



Rain gardens and lakeshore buffers capture sediment and nutrients and attract wildlife.

ent runoff. They also attract a variety of birds, butterflies, and other wildlife. Technical assistance to plant a buffer is available from local Soil and Water Conservation District offices. Buffers must meet a minimum size to qualify for the incentive.

### Farm Buffer Incentives

Farmers who have a lake or river near their property can receive an additional incentive from the District for joining the federal conservation program. The District will offer a one-time payment of \$200/acre to a farmer who enrolls or establishes a buffer in the Conservation Reserve Program.

Farmers who plant seeded, harvestable buffers along rivers, streams, or county ditches for a three-year period will receive a one-time payment from the District of \$350/acre.

These are just two of several incentives available to farmers.

Please contact the District office to learn about more opportunities.

### Rain Garden Incentives

The District will pay a one-time incentive of \$2.50 per square foot to plant and maintain a rain garden on lakeshore property. The payment is limited to an area no more than 10% of the impervious surface on the property. The rain garden plan must also be pre-approved by the District to qualify.

For more information about rain gardens and their benefits to water quality, visit the web site for Rice Creek Watershed District's Blue Thumb educational program at <http://bluethumb.org/why/>.

### Animal Feedlot Upgrade Incentive

Animal producers upgrading their feedlots to reduce phosphorus runoff may be eligible

for financial assistance from the District. The amount is based on the degree of phosphorus reduction required and the distance between the feedlot and surface water. Contact the District Administrator for more information.

### Septic System Upgrades

Incentives for homeowners to upgrade their septic systems are available through county Soil and Water Conservation Districts. Please contact the following individuals for more information.

Stearns County: Call Mark Latterell at 800-450-0852 or 320-656-3613.

Meeker County: Contact Jerry Vanderboort at 320-693-5290.

Wright County: Call Bill Stephens at 763-682-7338.



75 Elm Street NW, Annandale, MN 55302 (320) 274-3935 [www.crw.org](http://www.crw.org)

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## Area Farmers, Lakes Benefit from District Actions

Area farmers are saving money and helping improve water quality by participating in a Clearwater River Watershed District program to reduce fertilizer application.

The program aims to reduce phosphorus runoff by testing soil nutrient content on 600 acres of cropland. Based on the results of the soil tests, which are mapped on a grid, fertilizer is applied using global positioning system (GPS) technology only to the extent that a deficiency exists in a particular part of the grid.

This targeted application marks a shift in agricultural practice, which traditionally has applied fertilizer at a uniform rate across farm fields. By applying fertilizer only in the amount that can be taken up by crops, ex-

cess nutrients, particularly phosphorus, do not accumulate in the soil and therefore are not carried in runoff to area water bodies.

This program, developed by an area farmer and supported by a local co-op, offers a number of benefits. Where soil test results indicate less need for fertilizer, farmers can reduce the rate of application and save money in the process. This immediate pay-off is complemented by the long-term benefit of improved water quality that results from less nutrient runoff.

Results from test plots are encouraging: On average, fertilizer application rates were reduced 10% using the program's targeted approach.

The District has applied for



Area farmers participating in a District program to target fertilizer application are saving money and helping improve water quality.

a grant from the Minnesota DNR to expand the program to include up to 10,000 additional acres. The grant would pay for soil testing and a portion of GPS-aided fertilizer application on participating farm fields. Soil mapping would be accomplished with the help of Soil and Water Conservation District staff in Meeker, Stearns, and

Wright Counties, as well as local farmers, a local co-op, and the District. The District will also recruit participants and monitor and report water quality and crop yields.

For more information about this program, contact the District.

## Meet Your CRWD Board Members and District Staff

### Board of Managers

**Marvin Brunzell**  
Chairperson  
Wright County  
320-274-5018  
[marv@lkdlink.net](mailto:marv@lkdlink.net)

**Jerry Risberg**  
Vice-Chairperson  
Stearns County  
320-274-3635  
[jandprisberg@hotmail.com](mailto:jandprisberg@hotmail.com)

**Roland Froyen**  
Public Relations and Information  
Stearns County  
320-274-6414

**Robert Schiefelbein**  
Treasurer  
Meeker County  
320-398-8400  
[rgaaa@juno.com](mailto:rgaaa@juno.com)

**Mark Kampa**  
Secretary  
Wright County  
320-274-5332  
[mkampa@lakedalelink.net](mailto:mkampa@lakedalelink.net)

### District Staff

**District Administrator**  
Merle Anderson  
507-736-2413  
[pacma@frontiernet.net](mailto:pacma@frontiernet.net)

**Assistant District Administrator**  
Dennis Loewen  
320-274-3935  
[loewen.dennis@yahoo.com](mailto:loewen.dennis@yahoo.com)

**District Attorney**  
Gray Plant Mooty Mooty & Bennett  
Stan Weinberger  
St. Cloud, Minnesota  
320-202-5334  
[Stanley.Weinberger@gpmlaw.com](mailto:Stanley.Weinberger@gpmlaw.com)

**District Engineer**  
Wenck Associates, Inc.  
Norm Wenck, P.E.  
763-479-4201  
[nwenck@wenck.com](mailto:nwenck@wenck.com)  
Rebecca Kluckhohn, P.E.  
763-479-4224

### Mailing address

Box 481  
Annandale, Minnesota 55302

### District Governance

A five-member Board of Managers governs the District. The Managers serve staggered three-year terms. The Wright County Board of Commissioners appoints two Managers, the Stearns County Board appoints two, and the Meeker County Board appoints one. The largest portion of the District lies in Wright and Stearns Counties, with a smaller portion in Meeker. The powers and duties of Watershed Districts and their Boards of Managers are set forth in Minnesota Statute 103D.

### CRWD Board Meetings

Regular meetings of the District Board of Managers are held twice a month and are open to the public. The Board meets on the second Wednesday of the month at 7:00 p.m. at the Annandale Middle School. Workshops are held on the fourth Wednesday of the month at 7:00 p.m. at Kimball City Hall. Meeting notices and minutes are published in the Annandale, Kimball, and Watkins weekly papers and are posted on the District website at [www.crw.org](http://www.crw.org).

### Did You Know?

- Parts of three counties make up the CRWD: northeastern Meeker County, southeastern Stearns County, and northern Wright County.
- The CRWD covers 159 square miles and includes 7,336 acres of lake basins contained mostly in 19 lakes.
- The headwaters of the Clearwater River are in Meeker County. From its headwaters the river flows east-northeast until it meets the Mississippi River at the City of Clearwater. The river is approximately 39 miles long.

### District News/Inside This Issue

The District's upper watershed TMDLs were recently approved by EPA region 5. The studies address impairments caused by excess nutrients in the Clearwater Chain of Lakes and bacteria in the Clearwater River between Clear Lake and Lake Betsy. **See related article on page 2.**

The District recently won a highly competitive grant to fund the Kimball stormwater project, part of its efforts to improve water quality in the Clearwater Chain of Lakes. **See page 2 for more information about this project.**

Restoration on the Cedar Chain of Lakes continues. **See page 3.**

Incentive programs for landowners continue. Meet Board members and District staff. **See page 4.**

### More Projects Planned for Implementation

The targeted fertilizer application program described above is one of several projects launched as the District's TMDL study enters its implementation phase, the fourth and last part of the study's efforts to understand and correct the causes of impaired water quality.

For more information about the TMDL study and additional projects proposed to implement its recommendations, see the article on page 2.



## Projects Launched as TMDL Study Enters Final Phase

Anticipation of improved water quality is building as a multi-year study of the causes of and solutions to declining water quality in the Clearwater River and associated lakes enters its final phase.

The study began in 2003 after the MPCA listed two stretches of the Clearwater River and 11 lakes in the District as impaired by excess nutrients, dissolved oxygen and bacteria.

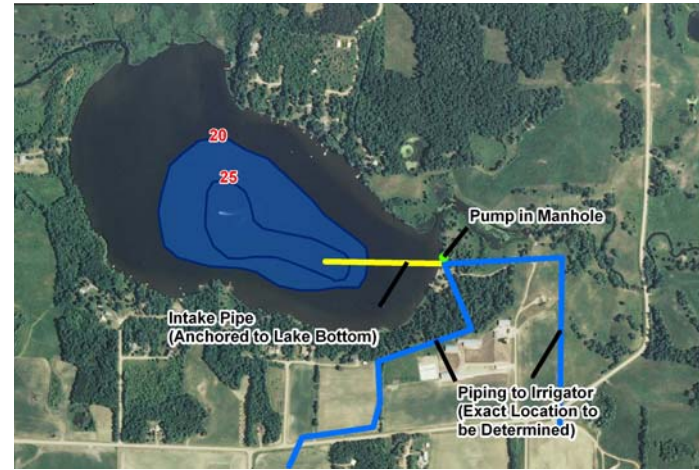
The listing required the District to complete a study to determine the causes of the impairments and set a total maximum daily load, or TMDL, for these waters. The TMDL is the total amount of a pollutant that a water body can assimilate and still meet water quality standards.

The TMDLs call for reductions in the amount of phosphorus entering the District's impaired lakes of

up to 90% , an ambitious goal requiring aggressive action. The implementation phase of the TMDL study (its final phase) takes this action by implementing practices such as the targeted fertilizer application program described on page 1. Several additional projects are proposed for 2010, some of which are described below. All would be funded by grants sought through the Clean Water Fund.

### Lake Betsy Hypolimnetic Withdrawal and Irrigation Project

The TMDL study estimates that the phosphorus load in Lake Betsy must decline by 87%. To help meet this goal, the internal phosphorus load would be reduced by withdrawing nutrient-rich water from the hypolimnion, the lowest layer of the lake, and us-



The proposed Lake Betsy Hypolimnetic Withdrawal and Irrigation Project would remove nutrient-rich water from the lake and use it to irrigate nearby farm fields.

ing the water to irrigate nearby farm fields. This would permanently remove an estimated 480 pounds of phosphorus annually and would reduce fertilizer application on agricultural land. The irrigation water would be applied so that excess water infiltrates the soil and does not run into the lake.

Because Lake Betsy is upstream of other lakes on the Clearwater chain, reducing its phosphorus load is critical to reducing the load in lakes downstream.

### City of Kimball Stormwater Infiltration Project

The District is working with the City of Kimball and Maine Prairie Township to capture the city's stormwater runoff, which now drains untreated into Willow Creek, a nearby trout stream tributary to Lake Betsy. Runoff from the city is proposed to be routed

into small retention ponds and then infiltrated in sandy soils around the city using spray irrigation. Reducing stormwater runoff would both protect a valuable trout stream and reduce the amount of phosphorus entering Lake Betsy.

### City of Watkins Stormwater Impoundment

Stormwater runoff from the City of Watkins is conveyed to the Clearwater River, which in turn flows through Lake Betsy. To reduce the phosphorus load sent downstream, the project would construct an impoundment and limestone filter to contain and treat runoff from the city's storm drainage system. The impoundment also has the potential to reduce the bacterial load and biological oxygen demand of water entering the Clearwater River.

For more information about any of these projects, contact the District.

## Cedar Lake Project Continues with Monitoring, Evaluation

A restoration project on the Cedar chain of lakes closed its third year with a round of monitoring and evaluation to measure the success of efforts to reduce phosphorus concentrations and control carp populations.

The project began in 2007 after Cedar Lake shore residents petitioned the District to address declining water quality and severe algae blooms.

The District determined that the problems were caused by excess nutrient runoff into the chain of lakes, which includes Cedar, Albion, Henshaw, and Swartout Lakes.

High numbers of carp also contributed to the problem. Their bottom-feeding activities disturb sediments, releasing phosphorus into the water and blocking sunlight that would support plant growth and nutrient absorption.

To address these problems, the District set goals and implemented practices to reduce the amount of

phosphorus in Cedar Lake. Selected tile inlets, ditches, and streams were buffered with vegetation for 1-3 years. Segner Pond, a 2.9-acre sedimentation basin with a limestone treatment system, was constructed on the Cedar Lake inlet. Movement of carp and other rough fish were controlled by installing fish barriers that impede migration to upstream spawning grounds, which not only reduces their numbers but also prevents them from stirring up nutrient-rich sediments in upstream lakes.

Rough fish harvests were also part of the prescription for the Cedar chain of lakes. Through December 2008, nearly 62,000 pounds of rough fish were harvested from Swartout and Henshaw lakes.

Water quality monitoring continues to evaluate the success of these projects. The results show an overall improvement in water quality in some lakes, but a need for continuing efforts

in others.

In Albion and Henshaw lakes, the summer average phosphorus levels and chlorophyll-a concentrations (a measure of algal growth) have generally declined, and water clarity has improved. In addition, submerged aquatic vegetation was observed to be growing more abundantly in the lakes in 2009. This overall improvement is attributed to below-normal precipitation leading to lower water levels and natural fish kills, both of which favor more vigorous growth of aquatic plants.

In Swartout Lake, summer average total phosphorus and chlorophyll-a concentrations remained high, but stable. Because of severe algae blooms in the lake last summer, water clarity remained low.

In Cedar Lake, the summer average phosphorus concentration has decreased since 2006, but it remains above the project goal of 20 micrograms per liter. De-

spite a decrease in the external phosphorus load in 2009, the concentration of that nutrient in the lake increased last year. Internal cycling of phosphorus is suspected to be causing some of this increase, perhaps due to curly leaf pondweed growing in small areas of the lake.

The average water clarity in Cedar Lake has not improved since 2006, but individual Secchi depth measurements have at times been remarkably high: The greatest depth reading increased from 5.2 meters in 2007 to 9.4 meters in 2009.

The restoration project continues, with recommendations to keep these practices in place, add curly leaf pondweed control, and continue monitoring. Noticeable results are expected in 10 years. The District is betting its patience will pay off.



Before and after: Segner Pond in December 2007 and August 2009. This treatment wetland was constructed on the inlet to Cedar Lake to remove phosphorus from water before it enters the lake.

### CRWD Applauds the Clear Lake Association

Hats off to the Clear Lake Association for its work with landowners to install a sanitary sewer system around Clear Lake and to control curly leaf pondweed. Their efforts go a long way toward improving lake water quality. Well done!