

2011



[2011 ANNUAL REPORT]

The mission of the Clearwater River Watershed District is to promote, preserve, and protect water resources within the boundaries of the district in order to maintain property values and quality of life as authorized by MS 103D.

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Executive Summary

As the photo on the first page shows, the big news event in the Clearwater River Watershed District (CRWD) was the excessive high water that occurred in July of last year. The CRWD received precipitation amounts well above average the previous 12 months, with near record snowfall causing high runoff in the early spring. This in turn filled the basins and saturated the soils, so that when a series of heavy precipitation events occurred in June and July, the water simply could not drain fast enough from the river system. As a result, the river and many area lakes (some on the river and others off) flooded property owners, causing extensive damage and mitigating normal use of the waters. This high water remained for the rest of the year, but was helped out by drought conditions in the later part of 2011.

These weather events remind us that although we use our natural resources to further our lives, we by no means maintain complete control. Those who have lived in the area long enough, or had relatives who lived in the area, likely remember that a similar high water event occurred back in the 1980s. In fact, it was that event that brought about four District projects: 1) the School Section Lake Outlet Control Structure, 2) the Pleasant Lake Outlet Control Structure, 3) the Clearwater / Grass Lakes Bog Removal Project, and 4) the Lake Augusta Bog Removal Projects. While no project was specifically instituted this year in regards to high water, these four past projects demonstrate that the CRWD has always been an organization whose purpose centers on managing our water resources so that all can enjoy these resources for generations to come.

It is with that in mind that the District accepted two similarly-minded petitioned projects this year. Both focus of providing a funding source for future aquatic invasive species (AIS) management: one is on Cedar Lake on the eastern end of the District; the other is on Lakes Louisa and Marie in the middle of the District. These two project show concerned citizens taking an active approach to addressing their concerns for water quality in the District, to the point that they sought to tax themselves by special assessment so they could address AIS concerns on their lakes.

On top of these two petitioned projects, the District completed its unique stormwater infiltration / reuse system in the City of Kimball. This project treats the 1.5 inch or less rainfall event over a 428 acre drainage area, resulting in an estimated phosphorous load reduction to Willow Creek and Lake Betsy of 244 pounds per year. Also, this system provides time for the warm stormwater to cool before entering Willow Creek via infiltration and recharge through groundwater, thereby protecting this delicate trout stream. And if that wasn't enough, the city has the option to use the collected stormwater to irrigate its nearby city ball field, instead of using costly treated water from their well system.

And let's not forget the District's upstream work on stabilizing the streambank and channel in at-risk sections of the Clearwater River. This project leverages grant-funded labor from the Conservation Corp of Minnesota to stabilize eroding streambanks and gouging channels through clearing overgrowth, placing grade control structures to the eroding banks, and planting locally harvested willows to create extensive root systems in the banks and stop erosion for the long-term.

Also, the CRWD begin work on the Kingston Wetland Feasibility Study and Restoration Project. This project focuses on restoring the Kingston Wetland Treatment System to increase its useful life and

treatment efficiency. Work completed in 2011 focused on gathering field data to be used in modeling and project design, which will take place this year. This project received a large grant from the Environmental Protection Agency's Section 319 Nonpoint Source Management Program.

The District has also joined in the Mississippi (St. Cloud) Watershed Project, which focuses on applying the Minnesota Pollution Control Agency's "One Waters" approach to implement the Total Maximum Daily Load process across hydrological-linked regions of the state. Be sure to go to <http://www.pca.state.mn.us/index.php/water/water-types-and-programs/watersheds/mississippi-river-st.-cloud.html> for more information on this project.

Of course, the District continues to operate and maintain its extensive portfolio of projects and programs, all aimed at improving the quality of our water resources. From rough fish mitigation through trapping and seining, to incentives aimed at the implementation of best management practices in agricultural production and residential dwellings, the CRWD is as involved as ever in promoting, preserving, and protecting the water resources of the District. For a complete listing of the status of the District projects and programs, be sure to keep reading. And be sure to check out our newly updated website, at <http://www.crw.org/>.

On behalf of the Board of Managers,



Dennis Loewen

Assistant Administrator

Clearwater River Watershed District

Clearwater River Watershed District Board of Managers

	<p>H David Wagner, Treasurer H David was appointed to the CRWD Board in 2011 as a Manager by Wright County Board of Commissioners. His appointment expires in 2014.</p> <p>Address: 7656 Isaac Avenue NW, Annandale, MN 55302 Phone: (320) 274-1164 E-mail: dwagner@lakedalelink.net</p>
	<p>Jerry Risberg, Vice-Chair Jerry Risberg was appointed to the CRWD Board in 2011 as a Manager by Stearns County Board of Commissioners. His appointment expires in 2014.</p> <p>Address: 231 Alder Rd, South Haven, MN Phone: (320) 274-3635 E-mail: jandprisberg@hotmail.com</p>
	<p>Mark Kampa, Secretary Mark Kampa was appointed to the CRWD Board in 2009 as a Manager by Wright County Board of Commissioners. His appointment expires in 2012.</p> <p>Address: 13934 101st St NW, South Haven, MN 55382 Phone: (320) 274-5332 E-mail: mkampa@lakedalelink.net</p>
	<p>Robert Schiefelbein, Chair Robert Schiefelbein was appointed to the CRWD Board in 2009 as a Manager by Meeker County Board of Commissioners. His appointment expires in 2012.</p> <p>Address: 35359 732nd Ave, Kimball, MN 55353 Phone: (320) 398-8400 E-mail: rgaaab@meltel.net</p>
	<p>Ben Drewes, Public Relations & Information Ben Drewes was appointed to the CRWD Board in 2012 as a Manager by Stearns County Board of Commissioners. His appointment expires in 2013.</p> <p>Address: 12662 Louisa Court, South Haven, MN 55382 Phone: (320) 398-2245 E-mail: bend@marconet.com</p>

Clearwater River Watershed District Staff

The District, in order to save costs and mitigate risks, operates on a contractual basis. All administrative, bookkeeping, and other work is performed by contracted service providers.

	<p>Merle Anderson, Administrator</p> <p>Merle has been the Administrator of the Clearwater River Watershed District since 1996. His extensive experience working in partnership with local units of government, state and federal government, lake associations, and related natural resource management groups has provided him with the basis for long-term planning that helps guide watershed district activities.</p> <p>Address: PO Box 87, Odin, MN 56160 Phone: (507) 736-2413 E-mail: pacma@frontiernet.net</p>
	<p>Dennis Loewen, Assistant Administrator</p> <p>Dennis Loewen has served as the Assistant Administrator since 2008. He serves the citizens of the District by working closely with and on behalf of the Board of managers through overseeing the day-to-day operations of the District, as well as long-term planning, project management and oversight, and serving as advisor to the Board.</p> <p>Address: PO Box 481, Annandale, MN 55302 Phone: (320) 274-3935 Fax: (320) 274-3975 E-mail: loewen.dennis@yahoo.com</p>
<p>Norm Wenck, Wenck Associates, Inc.</p> <p>Norm has served as the District's Engineer for over 30 years. His firm, Wenck Associates, Inc., supplements the District's administrative staff with engineering and technical support. Their collective knowledge and expertise are invaluable to fulfilling the District's mission.</p> <p>Address: 1800 Pioneer Creek Cir, PO BOX 249, Maple Plain, MN 55359 Phone: (763) 479-4201 Fax: (763) 479-4242 E-mail: nwenck@wenck.com</p>	
<p>Stanley J. Weinberger, Gray Plant Mooty</p> <p>Stanley has served as the District's Attorney for over 30 years. His knowledge and expertise assists the District's Board and staff in day-to-day operations as well as long-term planning and legal issues.</p> <p>Address: Gray, Plant, Mooty, 1010 W St Germain, Suite 500, St. Cloud, MN 56301 Phone: (320)202-5334 Fax: (320) 257-5739 E-mail: stanley.weinberger@gpmlaw.com</p>	

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Septic Check, Clearwater Harbor, Hidden River, and Rest-A-While Sewer Systems Operator

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E-mail: info@septic-check.comWebsite: <http://www.septiccheck.com>**Miller's Sewage Treatment (WRM Service), Wandering Pond Sewer System Operator**Address: 9075 155th Street, Kimball, MN 55353

Phone: (320) 398-2705

Fax: (320) 398-2705

Website: <http://www.millerssewage.com>**District Office**

The District's office is located at 75 Elm Street East, Annandale, MN, 55302. Normal office hours are 8:00am to 4:00pm Monday through Friday. Staff may be in the field during normal office hours.

Address: 75 Elm Street East, Annandale, MN 55302

[\(Map\)](#)

Phone: (320) 398-3935

Fax: (320) 398-3975

Website: <http://www.crw.org/>**District Meetings**

The Board of Managers meets the second Wednesday of the month at the Annandale Middle School in the School District's board room [\(Map\)](#) at 7pm, and the fourth Wednesday of the month at the Kimball City Hall [\(Map\)](#) at 7pm. Meetings are open to the public.

In 2011, the Board of Managers held 21 meetings. Meeting notices and minutes are published in the Annandale Advocate (Annandale, MN), the Tri-County News (Kimball, MN), and the Journal Patriot (Eden Valley, MN). Meeting minutes can also be found on the District's website at: <http://www.crw.org/>. The 2011 Budget Hearing was held on September 14th, 2011. Other special hearings were held throughout the year.

Clearwater River Watershed District Advisory Committee

The CRWD Advisory Committee met on November 15, 2011, at the Triple R Restaurant in Kimball, MN. Present at the meeting were members John Sedey, Gerry Auge, Jerry Finch, Dean Flygare, and Ron Graham. Manager Dave Wagner and Assistant Administrator Dennis Loewen were also present. Member Orv Jonsrud was excused.

At this meeting, the advisory committee discussed several topics, including:

- Shoreline Protection
- Bogs & Bog Removal
- Information Sharing
- Wake Ordinance
- Septic Systems
- Future Requests for Proposals
- Quarterly Meetings and Locations
- Other Compelling Issues

Currently, the committee members are: John Sedey, Gerry Auge, Jerry Finch, Art Bauer, Dean Flygare, Orv Jonsrud, Ron Graham, and Jeff Golden.

Background & Beginnings

The area encompassed by the Clearwater River Watershed District (CRWD) is rich in soil and water resources. The presence of those resources has encouraged the growth of two economic mainstays in this Central Minnesota territory – farming and tourism. Around these basics have grown the communities that support their needs. As population and industry grow, those priceless resources, which we often take for granted, may deteriorate.

In the 1960s and early 1970s, those who fished and enjoyed the waters of the Clearwater Chain of Lakes began to notice a decrease in the clarity of those waters, an increase in the number of rough fish (bullheads and carp), and an increase in the growth of algae on the surface of the water. Property owners sought new tests from scientists interested in water quality. Those tests revealed that the nutrient content of the water had increased substantially since 1946 – phosphorus was coming into the lake at a rate almost double the rate considered damaging.

The lakes through which the Clearwater River flowed were aging much too quickly. That process, which is a natural phenomenon called "eutrophication," was being helped along at an alarming rate via pollution entering the river system from cities, farmland, private property, and industry.

Further reports concluded that the rate of phosphorus input could be reduced by as much as 50% if the cities of Watkins, Kimball, and Annandale, and the Modern Craftsmen's Milk Association of Watkins installed on-land waste treatment systems instead of discharging sewage and industrial effluents into the Clearwater River and Warner Creek. In addition, if the phosphorus input from all non-point sources (such as septic tanks, agricultural wastes, storm water runoff, and soil erosion) could be significantly reduced, the water quality in the watershed could be restored to an acceptable level.

After a lengthy series of meetings and legal research, those concerned came to the conclusion that only a watershed district, with its powers of enforcement and its abilities to assess and to obtain federal and state funding, could tackle the pollution problem in the Chain of Lakes. The Clearwater River Watershed District was the culmination of years of hard work and the beginning of many more years of work aimed at undoing some of the damage done over a long period of time to one of our most important resources – our lakes and streams.

The Clearwater River Watershed District was established as a unit of local government on April 9, 1975, by order of the Minnesota Water Resources Board, acting under authority of Chapter 112, MSA (the Minnesota Watershed Act). Though the original thrust of the CRWD and its five-member Board of Managers was the improvement of water quality in the Clearwater River Chain of Lakes, its scope has grown into a complete program of water management within its boundaries.

2011 Work Progress

CCM Streambank Stabilization Project

60 days of labor were provided by the Conservation Corp of Minnesota (CCM) to continue this bank and channel stabilization project in the upper reaches of the Clearwater River. Work was broken up into three parts: harvesting and planting live willows into streambank to provide stabilization, clearing overgrowth to allow sunlight to reach streambanks, creation and placement of brush bundles (or waddles) onto streambanks to provide erosion control.

The flooding experienced this year highlighted the importance of these measures, as sections of the river that had stabilization work conducted suffered less bank loss than sections that did not.

Cedar, Albion, Swartout, Henshaw Project #06-1: Operation & Maintenance

With the high water throughout the District for much of the year, the maintenance of the fish barriers increased compared to past years. This maintenance focused on keeping the barriers clean of floating debris that clogged the barriers and cause strain on the structures. This maintenance occurred throughout the year.

Also completed was a widening of the channel directly below the Segner Pond fish barrier to allow for increased capacity and ease-of-use of the area as a fish trap for rough fish removal. 4,000 lbs. of rough fish were removed from this area this year, and with this change, the District hopes to improve on that number.

Finally, the limestone berm that provides water quality treatment at Segner Pond was repaired with assistance from work crews of the Conservation Corp of Minnesota. Several low spots on the berm were filled, providing ongoing treatment of phosphorus.

Cedar Lake Aquatic Invasive Species (AIS) Project

The District was petitioned by residents on Cedar Lake through the Cedar Lake Conservation Club to initiate an Aquatic Invasive Species project for the lake. Following the process set forth in statute, the District Board implemented the project at their meeting on Sept. 14th, 2011. The Cedar Lake Conservation Club runs this project (in conjunction with the MN DNR), with the District acting as fiscal agent and providing broad oversight. Treatment under this project is slated to begin in late spring 2012.

Clear Lake South (Cory Meierhofer) Notch Weir Project

The District has been working with the Clear Lake Property Owners Association on placing a notch weir project on the southern stream inletting to Clear Lake. The District acquired a permanent easement to allow construction and temporary holding of water on Cory Meierhofer's property along the southern stream. Construction of the weir is scheduled to begin in spring 2012.

Kingston Wetland Feasibility Study and Restoration Project

The District received \$404,000 through Section 319 funding with the MPCA to conduct this project, which aims to extend the useful life of the Kingston Wetland and provide on-going water quality

benefits to downstream waters. Work completed in 2012 involved water quality monitoring and modeling to provide a baseline for design and implementation.

Lake Augusta West Channel Cleanout Project

The District was petitioned by property owners along the Lake Augusta West Channel to clean out the channel to allow access to Lake Augusta for owners along the channel, as well as remove sediment entering the lake from the channel. Around 560 feet of channel were cleaned out, with the benefitted property owners being assessed for the work.

Lakes Louisa and Marie Aquatic Invasive Species (AIS) Project

The District was petitioned by residents on Lakes Louisa and Marie through the Chain of Lakes Association to initiate an Aquatic Invasive Species project for the lake. Following the process set forth in statute, the District Board implemented the project at their meeting on Oct. 26th, 2011. The Chain of Lakes Association runs this project (in conjunction with the MN DNR), with the District acting as fiscal agent and providing broad oversight. Treatment under this project is slated to begin in late spring 2012.

Willow Creek (Kimball PH I) Stormwater Retention / Reuse project

This project was completed this year. Project partners were the CRWD, MN Board of Water and Soil Resources (BWSR), MN Department of Natural Resources, MN Department of Health, Stearns Soil and Water Conservation District, and the City of Kimball. This project treats the 1.5 inch or less rainfall event over a 428 acre drainage area in the City of Kimball, resulting in a phosphorus load reduction to Willow Creek and Lake Betsy (a listed impaired water with the MPCA) of around 244 pounds per year, with estimated sediment reduction of four cubic yards per year. The system also provides time for the warm stormwater to cool before entering Willow Creek (a designated trout stream) via infiltration and recharge through groundwater. Warm water is detrimental to the health of a trout stream.

Project was completed with a \$70,900 grant from the BWSR, and a local match of \$47,100. The grant money is from the Clean Water, Land, and Legacy Amendment.

2012 Work Plans

Most of these work plans are summarizations of more detailed plans, usually taken from engineer's reports, inspection reports, and/or grant work plans. If you would like more detail, contact the District office.

CCM Streambank Restoration Project

Another 30 days of work crews were awarded to the District by the Conservation Corp of Minnesota (CCM) to continue this bank and channel stabilization project in the upper reaches of the Clearwater River. Work will focus on continuing restoration above and below areas restored via this project in the last two years. The areas restored in the past two years will be inspected for loss of restoration due to the high water last year, and if needed, replacements will be made.

Cedar, Albion, Swartout, Henshaw (CASH) #06-1 Operation & Maintenance

The limestone berm at Segner Pond will need minor work, mainly involving adding limestone to low areas of the berm. Seining of rough fish in Henshaw is planned for the fall of 2012. Treatment of Curly-leaf pondweed is planned for this summer 2012. Treatment will be conducted by the Cedar Lake Conservation Club via PLM Lake & Land Management Inc., with oversight provided by the Minnesota Department of Natural Resources and the CRWD.

Cedar Lake AIS Project

Treatment of Eurasian Watermilfoil will be conducted this summer 2012 by the Cedar Lake Conservation Club via PLM Lake & Land Management Inc., with oversight provided by the Minnesota Department of Natural Resources and the CRWD.

Clear Lake South (Cory Meierhofer) Notch Weir

The permitting and hearing process is complete. The project is currently being quoted, and is expected to be constructed this spring 2012.

Clearwater River Chain of Lakes (1980) Restoration Project Operation & Maintenance

The carp trap along State Highway 55 will again be operated this year to facilitate removal of rough fish from the upper chain of lakes (i.e. Louisa and Marie). Seining of Louisa and Marie is planned the winter of 2012/2013. Minor maintenance work will be conducted on several projects, such as weed control and fence repairs.

Kimball Stormwater Phase II

The District received \$738,750 from the MN Board of Water and Soil Resources as part of the Clean Water, Land, and Legacy Amendment. The project focuses on the installation of infiltration basins on the west side of the City of Kimball to allow stormwater treatment of another 108 acres while increasing the effectiveness of phase I by allowing it to treat a higher volume from a smaller drainage area. Work will be done concurrently and in cooperation with the City of Kimball while they upgrade their street design

using green street principles where possible. Currently, the District is working on the design of the project, with construction slated to begin late fall 2012.

Kingston Wetland Feasibility Study & Restoration Project

Water sampling has been completed, providing a basis for modeling and design work, which is expected to be completed by summer 2012. After modeling and design are completed and approved, construction will begin, probably in the fall/winter of 2012/2013. As part of this project, civic education components will be developed to inform the public on the project. This work is expected to be done concurrent to the construction phase of the project.

Lakes Louisa & Marie AIS Project

Treatment of Curly-leaf pondweed will be conducted this summer 2012 by the Chain of Lakes Association via PLM Lake & Land Management Inc., with oversight provided by the Minnesota Department of Natural Resources and the CRWD.

Targeted Fertilizer Application Reduction Project

The contract for this project is currently awaiting execution at the MPCA office in St. Paul. Assuming the contract will be executed timely; the District will begin project coordination in early summer 2012, with the first batch of gridded soil testing in fall 2012. The first application of fertilizer based on the results of gridded soil testing will be in early spring 2013. This project also has a civic education element which will be developed to inform the public on the project in early summer 2012.

Other Work Plans

Education Program

As part of the District's ongoing efforts to engage the local citizenry in the activities of the District, the CRWD has established an education program to provide the mechanisms for this engagement. The District's education program is oftentimes aligned with project-specific education components to capitalize on similar activities. This year, the district expects to perform several different educational activities, such as:

- Attendance at civic groups and local government meetings
- Capitalizing on the recently revamped CRWD website
- Publishing a new brochure focusing on recent District work
- Conducting a watershed tour in the summer to introduce citizens to their watershed
- Sending staff to local school events for outreach activities, such as 5th grade field days
- Increase contact with local schools to provide materials and speakers as needed

District Efficiency

As a tax-funded unit of government, the District is expected to always operate in the most efficient manner possible. The work plan to achieve this expectation is as follows:

1. Identify inefficiencies
2. Analyze identified inefficiencies
3. Review options to address inefficiencies

4. Address inefficiencies
5. Monitor results and adapt as needed.

Grant Opportunities

The District wants to capitalize on its recent grant successes by continuing its successful work plan for grant opportunities. The plan has four steps:

1. Determine which projects the District is seeking to undertake are eligible for the various grant opportunities. Prioritize project based on need, readiness, and fit in CRWD Watershed Management Plan. As new opportunities present themselves, adapt projects or create new projects to meet these opportunities.
2. Create a grant proposal tailored to the project & grant type. Communicate early in the process with the granting entity to make sure proposal meets the entity's expectations.
3. Submit proposal, keeping in close contact with the granting entity throughout the review process for clarification and answering of questions.
4. Once grant is awarded, follow all requirements and complete the project, keeping the granting entity informed of the progress.

As part of the Minnesota Board of Water and Soil Resources' (BWSR) new biennial budget review process, the District will be asked to present to the BWSR high priority tasks every two years.

Incentive Programs

As part of the CRWD's multi-faceted approach to water quality management, the District offers targeted incentives to its citizens to implement best management practices (BMPs). The District also seeks various opportunities to join with partners implementing water quality projects. The current incentive program is listed below.

Agricultural Incentives

The Clearwater River Watershed District offers several incentives to agricultural producers to adopt best management practices (BMPs) in their operations. Listed below are some examples.

1. If you enroll and establish a buffer in the CRP (Conservation Reserve Program), the CRWD will pay you an additional one-time incentive of \$200/acre made directly to you when USDA authorizes your contract.
2. Under the seeded buffer incentive option, the producer can establish a buffer that can be harvested for hay. The one-time up-front payment from the CRWD for a three-year period is \$350/acre. This seeded buffer is intended for use along rivers, streams, and county ditches.
3. The third option is intended for the corn, soybean, or small grain rotation. The CRWD will pay you \$50/acre per year to not till a certain area after harvest. This option is intended for use where soybeans or small grain have been harvested. The following spring you simply till and plant like you always do.
4. The CRWD is willing to pay you \$50/year if you seed a 50'x50' area around your tile intakes into permanent grass. You will be paid \$100/year if the permanent grass area is 100'x100' and \$200/year if the permanent grass buffer around your intake is one-half acre in size. Some producers want to remove their open intakes and replace them with an underground rock inlet. We'll help you do that too. The one-time payment is \$400/intake replacement.

5. The CRWD provides a one-time payment for the establishment of grass waterways installed in the Cedar Lake Subwatershed. This payment will reimburse the property owner 25 percent of the cost of the construction and seeding costs, based on a plan developed and approved by the Natural Resource Conservation Service. The grass waterway must be maintained for five years.

The Clearwater River Watershed District is also involved in assisting livestock producers with adopting BMPs in their operations. The District evaluates these projects on a case-by-case basis, often times joining with the local SWCD (Soil and Water Conservation District).

Residential Incentives

The Clearwater River Watershed District offers an incentive to area residents to establish shoreline buffers on their property. Why does the CRWD provide these buffer incentives? Buffers prevent sediment and nutrients from entering rivers, streams, county drainage ditches, and lakes. The fewer nutrients enter a water body, the cleaner the water body will be.

Lakeshore residents can buffer their lawns and we will help. The DNR (Department of Natural Resources) has grant money available, the local SWCD (Soil and Water Conservation District) has technical assistance available, and the CRWD will pay a one-time incentive of 20% the total cost (up to \$750) for you to participate in buffering your shoreline.

While there are certain requirements for the size of the lakescaping buffer (depending on who is involved in the project), once established the buffer protects the lake, provides beautiful flowers, and attracts wildlife. Ongoing maintenance is very low. Also, for those who have a nuisance geese problem, these buffers help to keep geese off your property by limiting access.

Partnership Incentives

The Clearwater River Watershed District will oftentimes partner with landowners and/or various entities to produce results that further the District's mission. Listed below are examples of activities the District has partnered in. The CRWD is always looking for various ways to partner with others who are working towards promoting, preserving, and protecting water resources, as well as assisting District residents.

Grass Waterway above Lake Caroline

In 2010, the Clearwater River Watershed District partnered with a local landowner along with the Stearns County Soil and Water Conservation District to install grassed waterways in an agricultural field that suffered from erosion caused by runoff from rain events. The District contributed \$5,000.00 towards the cost of installation of the grassed waterways, which serve to correct the erosion issue, keeping the sediment and nutrient-laden runoff from entering Lake Caroline.

Clearwater River Channel Stabilization (CCM Riparian) Project

In 2010, the Clearwater River Watershed District pursued and won a grant with the Conservation Corps of Minnesota to provide work crews for a streambank restoration and channel stabilization project in the upper reaches of the Clearwater River. The District sought and received landowner approval to conduct this work on private land (most of the land along the Clearwater River is privately held). To learn more about this project, go to page [26](#).

Installation of Rain Gardens

The CRWD provides a one-time \$2.50 per square foot incentive for installation and maintenance of a rain garden on private property where installation will provide a benefit to cleaner water. The incentive cannot exceed payment for more than an area equal to 10 percent of the impervious surface on the property. The plan must be pre-approved by the CRWD.

Project Inspections

Projects that the District has the responsibility for ongoing operation & maintenance are inspected yearly, normally in the early spring. The District conducts ongoing maintenance of these projects based on a triage approach, where inspections reveal which maintenance actions are to be completed first, and the necessary timeframe for those actions. A maintenance plan for the year is created based on these inspections. Once the Board approves the plan, the maintenance actions are completed based on their timeframes. The Annual Inspection Report and maintenance plan is available on the District's website, at: <http://www.crw.org>.

Special Projects

New opportunities may arise that call for the District to begin the process of implementing a special project. The District follows the applicable rules as defined by MN Statutes 103D regarding the creation of new projects. A general work plan follows. Please note that petitioned projects have their own unique rules in MN Statutes 103D, and as such will deviate from this work plan.

1. The Board determines whether the proposed project benefits the District, fulfills the District mission, fits in the District's Watershed Management Plan, and is feasible.
2. If necessary, the District's Attorney and Engineer are consulted.
3. Staff seeks out partnerships and grant opportunities to assist in bringing the project to fruition.
4. Project design is completed (if applicable). Reports are written as needed.
5. After approval from board, the project is implemented. Reports and operation & maintenance plans are written as needed.

2011 Water Quality Monitoring Report Summary

Note: What follows is the executive summary from the 2011 Water Quality Monitoring Report. This report is available at the CRWD's office, or online at:

http://www.crwd.org/water_quality_monitoring_reports.html.

Executive Summary

This report was prepared by Wenck Associates, Inc. (Wenck) for the Clearwater River Watershed District (CRWD) to provide a description of District's monitoring program, summarize and analyze 2011 monitoring data, and provide a progress report of TMDL Implementation activities in the District.

Significant findings in this report include the following:

1. Annual precipitation was slightly above normal at monitored locations for the year in 2011, but was nearly 8.5 inches above normal in the months of January through August. Precipitation in July was especially high, as over 10 inches of rain was recorded at the Watkins precipitation station. Rainfall was well below normal from September through December.
2. Runoff over the District was among the highest on record in 2011. Runoff at CR 28.2 was 14.5 inches, and at CR 10.5 was 18.8 inches, which is the second highest runoff recorded in the District. The higher than normal runoff in both portions of the District is due primarily to high precipitation during the fall of 2010, followed by near record snow fall during the winter, followed by a series of high precipitation events during June through the end of August. The higher than normal runoff contributed to high water elevations in many District lakes in July and August that damaged property and inhibited recreation on some lakes.
3. Phosphorus loads from the Clearwater River were also higher than those observed in recent years due to the higher than normal runoff. The Clearwater River phosphorus load was estimated at 10,986 pounds at CR 10.5. The 2011 phosphorus load is higher than loads in recent years due to increased runoff from above average precipitation, but similar to historical averages in years with similar high runoff.
4. The upper watershed load measured at CR 28.2 was 29,967 pounds, which was significantly higher than loads measured in recent years due to increased runoff. The load from the upper watershed in 2011 is an order of magnitude higher than the phosphorus load goal established for downstream lakes: Lake Betsy's goal is 2,280 lbs; Clearwater Lake's goal is 4,000 lbs. Flow-weighted average concentrations were 26 µg/L and 269 µg/L at CR 10.5 and CR28.2, respectively. These concentrations were lower than historical averages at both sites and similar to concentrations seen in recent years; owing to the diluative effect of high runoff volumes.
5. Phosphorus loading at Warner Creek was 4,854 lbs in 2011, which is the highest load measured at this location since the mid-1980s. Mean phosphorus concentrations have been increasing at this location since 2009. The expansion of monitoring efforts on Warner Creek may help in identifying the source of the increased phosphorus in the stream.
6. Although soluble phosphorus did not make up as large a percentage of total phosphorus at monitoring stations downstream of wetlands as in the past, soluble phosphorus concentrations still made up approximately half of the total phosphorus at CR 28.2 downstream of the Kingston

Wetland and at Warner Creek (Site WR 0.2) downstream of the Annandale Wetland. This indicates the export of soluble phosphorus from the wetlands, although lower in a high runoff year, is still a significant problem. Projects implemented to reduce phosphorus should also contain a component to reduce soluble phosphorus if possible. The Clear Lake project proposed for construction in early 2012 includes a sand-iron filter to target removal of soluble phosphorus from the inflow to Clear Lake.

7. With the exception of the 11 lakes that are impaired in the District, the water quality of CRWD lakes is generally good. Lake water quality was impacted by higher than normal runoff in 2011, as phosphorus concentrations were higher than in recent years in most lakes. Chlorophyll-*a* concentrations declined and water clarity improved in many of these same lakes, indicating that water was flushing through these lakes too quickly for algal production to occur. Water quality has generally improved or remained stable in the majority of the lakes in the District in recent years. The exception is Scott, Louisa, Marie, Caroline, Union, and Augusta Lakes where an increasing phosphorus trend has been observed over the last three years. This increasing phosphorus trend in these lakes reflects the increase in phosphorus loads during the same time period.
8. Additional lake monitoring efforts conducted in 2011 confirm the impact of internal loading of nutrients in some District lakes, as evidenced by monitoring data showing high bottom phosphorus concentrations that typically increase steadily throughout the summer, and periods of anoxia (dissolved oxygen concentrations < 2.0 mg/L) in some lakes. Monitoring data indicates that lakes especially susceptible to internal nutrient loading include Albion, Swartout, Henshaw, Augusta, Caroline, Louisa, Marie, Betsy, Scott, and Union. CRWD will continue to evaluate potential actions identified in the Watershed Restoration and Protection Plan (TMDL Implementation Plan) that address internal loading in future years.
9. Dissolved oxygen (DO) monitoring conducted on the Clearwater River upstream and downstream of the Kingston Wetland and downstream of the Grass Lake Dam confirmed the DO impairments previously identified in these locations. This monitoring confirms the conclusions drawn in the TMDL, that DO violations that occur downstream of Kingston Wetland are driven primarily by wetland sediment oxygen demand (SOD). Oxygen deficiencies were also noted in water bodies downstream in July 2011 as DO concentrations were below or near the anoxia limit in Lake Betsy, Lake Louisa, and Scott Lake.
10. *E. coli* bacteria monitoring data was collected from the Clearwater River upstream of Lake Betsy at site CR 28.2 to track TMDL implementation progress and on the Clearwater River at the outlet of the watershed just upstream of the Mississippi River (monitoring site CR 0.1) at the MPCA's request. The data collected at CR28.2 exceeded the state chronic standard during late summer, which was consistent with the findings of the TMDL. The data collected at CR 0.1 exceeded the chronic standard one time in September.
11. Continued monitoring as part of Cedar Lake Project #06-1 indicated that the external phosphorus load in 2011 to Cedar Lake of approximately 3,800 lbs was well above the project goal of 1,000 lbs. Summer average phosphorus concentrations in Cedar Lake did not increase significantly in 2011. Chlorophyll-*a* concentrations were above minimum water quality standards in 2011, while water clarity declined. Summer average phosphorus concentrations

remain above the Project goal of 20 µg/L in Cedar Lake, indicating that additional load reductions, additional actions, and time are necessary to meet lake water quality goals.

12. The CRWD conducted rough fish removal in Lake Betsy and Segner Pond in 2011. Approximately 80,000 lbs of carp were removed from Lake Betsy in July while 8,000 lbs of carp were removed from Segner Pond in June. Rough fish removal efforts will continue in the District in 2012.
13. The 2011 monitoring results in Swartout, Albion, and Henshaw Lakes continue to demonstrate the connection of lake water quality to the status of fish communities in these lakes. The aggressive management of rough fish leads to clear state shallow lakes in this system.
14. In 2011, the CRWD made progress towards water quality goals established in the Watershed Restoration and Protection Plan (TMDL Implementation Plan) by:
 - ❖ implementing additional monitoring tasks to fill data gaps identified in the TMDL and which will assist in final design of capital improvement projects and targeting BMPs;
 - ❖ conducting rough fish removal in two locations in the District
 - ❖ applying for and securing grant dollars for two projects;
 - ❖ beginning monitoring and data collection tasks on the grant funded Kingston Wetland Restoration and Feasibility Study;
 - ❖ securing land and completing design and permitting for a notched weir and iron-sand filter water quality improvement project on a tributary stream south of Clear Lake.
 - ❖ continuing work on three projects implemented in 2010, including:
 - completing construction on a stormwater reclamation and reuse project in the City of Kimball,
 - quantifying data from a targeted fertilizer application reduction project in the upper watershed and enrolling additional participants in the program,
 - and conducting streambank restoration and stabilization project on the Clearwater River
 - ❖ continuing to seek grant funding, monitoring, and securing land for additional projects including:
 - Watkins impoundment, and
 - Lake Betsy hypolimnetic withdrawal
15. In 2012, the CRWD plans to continue progress towards TMDL goals by:
 - ❖ continuing additional monitoring efforts to track effectiveness and improve efficiencies of implementation projects,
 - ❖ conducting rough fish removal
 - ❖ implementing the Soil Testing and GPS Fertilizer Application Project by enrolling landowners, formulating a monitoring plan, and beginning soil testing
 - ❖ continuing monitoring and project design for the Kingston Wetland Feasibility Study and Restoration Project,
 - ❖ begin Kimball Phase II project, and
 - ❖ continuing to apply for grant dollars to fund other CRWD projects

Status of all District Projects

This information is compiled on a yearly basis as part of the District's Inspection Program. Projects are inspected at various times throughout the year, with a District-wide Inspection conducted in the spring of every year, dependent on weather conditions.

Aquatic Invasive Species Projects

The CRWD currently has four projects aimed at controlling aquatic invasive species on several district lakes. Each project is financed by a special assessment against riparian properties of the particular lake. The projects are listed below.

Cedar Lake Aquatic Invasive Species (AIS) Project

The District was petitioned by the Cedar Lake Conservation Club to institute an aquatic invasive species (AIS) project for Cedar Lake. Currently, Cedar Lake is infested with two invasive species, Eurasian Watermilfoil, and Curly-leaf Pondweed. The project provides a funding mechanism to combat present and future AIS. Treatment is conducted annually by Cedar Lake Conservation Club, and the treatment program and permitting are developed with the Minnesota Department of Natural Resources.

Clearwater Lake Eurasian Watermilfoil Control Project

As part of the Clearwater Chain of Lakes Restoration Project, the District is required to maintain the quality of the lakes benefit by the project. Therefore, when Eurasian Watermilfoil was discovered in Clearwater Lake, the District undertook a treatment program. The program is funded by a special assessment of properties benefitted by Clearwater Lake. Treatment programs and permitting are developed with the Minnesota Department of Natural Resources. Treatment is carried out annually by the Clearwater Lake Property Owners Association. The project continues to be effective. It is expected that a petition will eventually be submitted by residents of Clearwater Lake to change this project from Eurasian Watermilfoil to all Aquatic Invasive Species.

Lake Augusta Eurasian Watermilfoil Control Project

As part of the Clearwater Chain of Lakes Restoration Project, the District is required to maintain the quality of the lakes benefit by the project. Therefore, when Eurasian Watermilfoil was discovered in Lake Augusta, the District undertook a treatment program. The program is funded by a special assessment of properties benefitted by Lake Augusta. Treatment programs and permitting are developed with the Minnesota Department of Natural Resources. Treatment is carried out annually by the Lake Augusta Association. The project continues to be effective. It is expected that a petition will be received by residents of Lake Augusta to change this project from Eurasian Watermilfoil to all Aquatic Invasive Species.

Lakes Louisa and Marie Aquatic Invasive Species (AIS) Project

The District was petitioned by residents on Lakes Louisa & Marie institute an aquatic invasive species (AIS) project for these two lakes. Currently, Lakes Louisa & Marie are infested with one invasive species, Curly-leaf Pondweed. The project provides a funding mechanism to combat present and future AIS. Treatment is conducted annually by the Chain of Lakes Association, and the treatment program and permitting are developed with the Minnesota Department of Natural Resources.

Bog Control Projects

In response to high water levels in the mid-1980s that caused severe floating bog problems on Augusta, Clearwater, and Grass Lakes (which lead to several emergency bog removal activities), the CRWD set up two bog control projects with the cooperation of the lake property owners involved. These projects included acquisition and improvement of access areas for bog removal, and the funding (via assessment) and process for removal of floating bogs deemed harmful. Estimated cost for the two projects was \$17,000, and they were initiated in the summer of 1985.



In 2011, the Clearwater River Watershed District experienced high water that rivaled the water levels in the mid-1980s. Currently the District has agreements with the Lake Augusta Association and the Clear Lake Property Owners Association for 50/50 cost-share to remove bogs that threaten to block river flows - thereby threatening to cause flooding on those lakes. The CRWD works in conjunction with the Minnesota Department of Natural Resources as well as other local authorities in removal of problematic bogs. The CRWD only becomes involved with bog removal when the flow of the Clearwater River is threatened.

Cedar, Albion, Swartout, Henshaw (CASH) #06-1 Project

The Cedar #06-1 project was implemented in 2006 to mitigate the effects of nutrient-rich waters in the Cedar Lake sub-watershed. This watershed is made up of four lakes: Henshaw and Albion lakes flow into Swartout Lake, and Swartout flows into Cedar Lake. From Cedar Lake, water flows into Clearwater Lake and down the Clearwater River into the Mississippi River. The project is made up of three separate parts, listed below.

The project also has ongoing water quality monitoring conducted to assess its effectiveness and make adjustments as necessary. Results from this monitoring can be found in the District's Water Quality Monitoring Reports, online at http://www.crw.org/water_quality_monitoring_reports.html.

Rough Fish Migration Barriers

Rough fish mitigation barriers are placed at three separate points on the streams connecting the four lakes. One is located at the outlet of Henshaw Lake, another at the outlet of Swartout Lake, and the final one below the wetlands between Swartout Lake and Cedar Lake. The fish barrier stops the movement of rough fish, which cause nutrient release in the bottom sediments of the lakes. By placing the barrier in these locations, the rough fish are forced into shallow wetlands, where winter kill occurs nearly every year.



These fish barriers continue to prove quite effective at controlling the rough fish population. The barriers were inspected in March 2012. They were found to be working properly.

Rough Fish Removal

Rough fish removal occurs on Henshaw and Swartout lakes. Carp cause a great deal of phosphorous



movement within the sub-watershed due to their stirring up of bottom sediments rich in phosphorous. Carp can also cause a lake's ecological balance to tip due to their interruption of the food chain and their foraging method causing a loss of beneficial aquatic vegetative plants. By removing the carp, the bottom sediments are not disturbed and the phosphorous remains trapped in the sediments instead of the water column, leading to increased water quality. This has been especially beneficial in Swartout Lake, which has seen dramatic

improvements in water clarity due to the removal of carp from the lake.

Carp seining continues on an as-needed basis, with seining being done during the winter months being the preferred method. Open water seining may be conducted if winter conditions are not favorable.

Segner Pond

The Segner Pond treatment system uses a large sediment basin and a limestone berm to remove incoming sediment and phosphorous from the flows of Henshaw, Albion, and Swartout lakes before entering Cedar Lake. The system also has a fish barrier at the inlet to the pond to halt the movement of rough fish, such as carp.



Improvements were made to the inlet this year near the existing fish barrier to allow for the trapping and removal of rough fish this spring. This system was inspected March 2012, where it was found to be working properly.

Clearwater River Chain of Lakes (1980) Restoration Project

The Clearwater River Chain of Lakes Restoration Project is a series of eight lakes and watershed restoration measures undertaken in the 1980s to improve the water quality of the Clearwater River Chain of Lakes. The Chain of Lakes Restoration Project was a \$4.4 million project spanning the 1980s-1990s designed to significantly improve water quality on Clearwater Lake and several smaller lakes that make up the chain. The bodies of water benefitted from the overall project include: the Clearwater River, Grass Lake, Clearwater Lake, Lake Augusta, Lake Caroline, Lake Marie, Lake Louisa, Scott Lake, and Lake Betsy. Six of the eight original projects continue operation today. The eight original projects are described briefly below, along with their status.

County Ditch Twenty Wetland Treatment System (Watkins)

Wetland Treatment Systems serve as the backbone of the restoration project. Wetlands excel at removing pollutants from our waters. The County Ditch 20 Wetland Treatment System contains approximately 40 acres of wetlands, which are served by a diversion structure and two channels. A total of approximately 7,000 feet of diversion channels distributes the contaminated runoff over the wetland. The approximate expense of this project was \$200,000 and it was completed in late 1984. This wetland system removes approximately 1,000 pounds of phosphorus annually.

This system was inspected in April 2012. It was found to be working properly.

Kingston Wetland Treatment System

The Kingston Wetland Treatment System is the major facility of the project and contains nearly 300 acres of wetland. Over 19,000 feet of diversion channels were constructed, with more than 150 distribution pipes installed along the length of the channel. The construction cost of this project was approximately \$394,000 and it was completed in 1985. The system removes approximately 5,600 pounds of phosphorus annually.

This system was inspected in April 2012. It was found to be working properly.

Kingston Wetland Feasibility Study and Restoration Project

As part of the ongoing operation and maintenance of the Kingston Wetland Treatment System, the District is undertaking this major feasibility study and restoration project. For more information on this TMDL Implementation Project, go to page [27](#).

Annandale Wetland Treatment System

The Annandale Wetland Treatment System consists of approximately 40 acres of wetland in two locations, with 4,600 feet of diversion channels. The approximate construction expense of this project was \$120,000 and it was completed in late 1984, with an approximate phosphorus removal capacity of 750 pounds per year.

This system was inspected in April 2012. It was found to be working properly.

Upper Lakes Aeration and Mechanical Fish Removal (Discontinued)

The Upper Lakes Aeration and Mechanical Fish Removal Project included the hypolimnetic aeration of Lakes Louisa and Marie. These aerators were installed in 1985-1986. In addition, mechanical removal of rough fish (carp, bullhead, etc.) was performed on Lake Betsy, Scott Lake, Union Lake, Lake Louisa, Mill Pond, and Lake Marie during the fall of 1984 and the spring and fall of 1985-1988. Being bottom feeders, rough fish mix large amounts of nutrients into the water from the sediments. The estimated cost of this project was \$285,000, and it removes an estimated 1,800 pounds of phosphorus annually. The aerators were removed in the 1990s due to operation costs. Other projects were implemented to take the place of the aerators. See the replacement projects listed below.

Lake Augusta Erosion Control Project

This project consisted of building a sedimentation basin along with riprap and energy dissipaters. The goal of the project was to alleviate a serious erosion problem leading to sediment entering Lake Augusta along the southwestern portion of the lake. The original estimated phosphorus removal capacity was 50 pounds per year.



This system was inspected in March 2012. It was found to be working properly.

Monitoring Program

From 1981 through 1992, a monitoring program including lake and stream water quality, stream flows, and precipitation (beginning in 1983) was a part of the Clearwater Chain of Lakes Restoration Project. The monitoring program helped bring about important modifications, including the addition of the Upper Watkins Wetland isolation and the Nonpoint Source Pollution Abatement Projects.

This monitoring continues as part of the District's yearly Water Quality Monitoring program. Go to page [17](#) for a summary of the District's 2011 Water Quality Monitoring Report.

Upper Watkins Wetland Isolation Project

The Upper Watkins Wetland Isolation Project was added to the project in 1983. Formerly, untreated wastewater from a cheese plant discharged into the Upper Watkins Wetland. This transformed the wetland from a nutrient trap (its natural state) into a nutrient source – in fact, the largest nutrient source in the entire watershed. The project diverts runoff and channel flow around the edge of the wetland and includes more than 11,000 feet of isolation dikes and channels plus overflow structures and ditch crossings. The estimated expense of this project was \$460,000 and it was completed in late 1984. It has resulted in a phosphorus load reduction of approximately 30,000 pounds annually.

This system underwent minor maintenance work in 2011 to correct problems developing in the dikes and channels. Several breaks in the dikes were repaired, and a large section of the channels were cleared to remove vegetative growth that threatened the stability of the diversion system. It was inspected in April 2012 and found to be in need of further berm work.

Non-point Source Pollution Abatement Project

The Nonpoint Source Pollution Abatement Project was added to the project in 1985 and later extended to 1993. This project aimed to institute farming practices that will protect the public from water quality degradation while at the same time reducing soil loss, lowering farm operating costs, and increasing profits. The infrastructure developed to implement this was the Tri-County Conservation Project (TCCP), composed of the Stearns, Meeker, and Wright Soil and Water Conservation Districts, along with CRWD. To demonstrate conservation tillage practices, a no-till drill was purchased. Also, tillage demonstration plots were used. A local farmer group was formed to provide grass roots input on implementing conservation practices through the project. Critical erosion and nutrient export areas were identified using a computer model. Runoff and groundwater monitoring, including pesticide impacts, was conducted. The project, with a budget of some \$1.5 million, worked through cooperation among individual farms, the agri-business community, the TCCP member soil and water conservation districts, Minnesota Pollution Control Agency, Board of Water and Soil Resources, Agricultural Extension Service, U.S. Soil Conservation Service, Environmental Protection Agency, and others.

Fertilizer Field Trial, now the Targeted Fertilizer Application Project

The ideas and methods of this project continue today with the District's Fertilizer Field Trial program. For more information on this TMDL Implementation Project, go to page [27](#).

Community Sanitary Sewer System Projects



The Clearwater River Watershed District owns and operates four communal sanitary sewer systems. Their names are: Clearwater Harbor Sanitary Sewer System, Hidden River Sanitary Sewer System, Rest-A-While Sanitary Sewer System, and Wandering Pond Sanitary Sewer System. Clearwater Harbor is located along Grass Lake and Beachwood Road along Clearwater Lake in Stearns County. Hidden River is located adjacent to the northern end of Clearwater Harbor along the Clearwater River in Stearns County. Rest-A-

While is located on Lake Louisa on Aspenwood Road in Stearns County. Wandering Pond is above Lake Louisa on the north end of Reed Court in Stearns County.

Both Clearwater Harbor and Hidden River are permitted by the Minnesota Pollution Control Agency. Both systems were petitioned by Stearns County to be constructed and maintained by the District. Rest-A-While and Wandering Pond are permitted by Stearns County Environmental Services. Both systems were petitioned by two separate developers to be constructed and maintained by the District. The systems treat wastewater from serviced properties in a manner that protects the groundwater as well as the nearby surface waters from sewage pollution.

All systems are maintained by a certified operator, found on page [7](#).

Outlet Control Projects

In response to the high water experienced in the early 1980s, the District was petitioned by property owners on Pleasant Lake in Wright County and School Section Lake in Stearns County to create two outlet control structures to help control the water levels of Pleasant and School Section Lake. The outlets are permitted by the Minnesota Department of Natural Resources and operation of the outlets follow strict DNR guidelines to protect the waters and properties downstream as well as Pleasant and School Section Lakes.



TMDL Studies & Implementation Projects

The Clearwater River Watershed District was one of the first Watershed Districts in the state to complete its Total Maximum Daily Load (TMDL) Implementation Plan. The CRWD has undertaken several water quality projects that were listed as part of this plan to reduce pollution loads to the impaired waters of the District. An explanation of each project and its current status is listed below.

Clearwater River Channel Stabilization (CCM Riparian) Project



This project began in 2010 and is located in the upper reaches of the Clearwater River near Meeker County Highway 17. The purpose of the project is to provide vegetated slopes and ground cover, as well as stream bank toe and head cutting protection, to targeted sections (private land) of the Clearwater River where the streambanks are eroding. To combat this erosion problem, three different stages of the project are preformed along the target sections.

1. Trees along the streambank are thinned to allow sunlight to reach the ground. The felled trees and the corresponding brush were reused as slope breaks, toe protection, and grade controls. The brush was formed into bundles and staked in place to act as toe protection along the water's edge.
2. Willows on-site are harvested and planted into the streambank to create root systems that will anchor the streambank and help prevent erosion.
3. The project is re-evaluated after a set time to see if more thinning and placing of breaks and bundles, as well as more plantings, are needed.

This project is a grant-funded project with the Conservation Corps of Minnesota (CCM). The District provided materials and guidance, the CCM provides work crews, and landowners agree to allow work to be completed on their property. Contact the District if you are interested on have this type of work done on your property.

Targeted Fertilizer Application Project (an expansion of the Fertilizer Field Trial Project)

Agricultural runoff is a significant source of polluting nutrients to waters of the CRWD. In response to this, the CRWD began a pilot project aimed at demonstrating the feasibility of a large-scale targeted fertilizer application project. Known as the Fertilizer Field Trail, the focus was on demonstrating the benefits received by participating farmers and the District's surface waters by assisting farmers in changing from standard fertilizer application technology to variable fertilizer application technology.

Many farmers apply fertilizers to their fields at standard rates, even though field fertilizer requirements vary significantly throughout a given field. By testing the soil throughout a given field to determine fertilizer requirements, the farmer can apply the fertilizer at variable rates throughout a field. This results in a tested field receiving the correct amount of fertilizer needed. Benefits achieved are a significant monetary savings for the farmer, due to increased yields and decreased purchase of fertilizer, and a decrease in phosphorous entering the District's waters, since no excessive fertilizer is applied and washed out of the field during rain events.

Based on the success of the pilot project, the District applied and received a large EPA Section 319 grant to increase this project over a large area. Now known as the Targeted Fertilizer Application Project, this project is focused on enrolling up to 16,000 acres into this systematic soil testing program from the upper watersheds of Lake Betsy. The result of this project is estimated to be about 17% of the required load reduction for Clear Lake from agricultural sources. This project will have a trickle-down effect for all the waters downstream of Clear Lake.

Kingston Wetland Feasibility Study and Restoration

The District was awarded a grant in 2010 for the Kingston Wetland Feasibility Study and Restoration Project. This project seeks to improve dissolved oxygen (DO) concentrations in a DO impaired reach of the Clearwater River, to reduce the seasonal export of soluble phosphorus to downstream impaired lakes, and to improve steam and wetland habitat, as well as an annual 1,970 pounds reduction of soluble phosphorus being exported downstream. The project was slated to begin in early 2011, but was postponed due to contracting issues. Water quality sampling did begin in spring 2011 for this project. See the Work Plan for 2012 section for more information regarding this project.

Willow Creek (Kimball Phase I) Stormwater Retention / Reuse Project

Stormwater runoff from the eastern half of the City of Kimball was draining untreated into Willow Creek, a designated trout stream and tributary to Lake Betsy. Untreated stormwater runoff is full of nutrients and chemicals that are detrimental to the health of the District's waters. To correct this problem, the CRWD applied for and received a Clean Water Fund grant through the Minnesota Board of Water & Soil Resources, in the amount of \$70,900.

In concert with a \$47,100 local match, a stormwater management system in Willow Creek Park (a City of



Kimball park) was constructed. The system treats the 1.5 inch or less rainfall event over a 428 acre drainage area, resulting in an phosphorous load reduction to Willow Creek and Lake Betsy(a listed impaired water with the Minnesota Pollution Control Agency) of around 244 pounds per year. Sediment reduction estimates achieved by the system are estimated to be four cubic yards per year kept from entering Willow Creek. Also, this system provides time for the warm stormwater to cool before entering Willow Creek via infiltration and recharge through groundwater. Warm water is detrimental to the health of a trout stream.

This project was completed due to the cooperation between the Clearwater River Watershed District, the Minnesota Board of Water & Soil Resources, the Minnesota Department of Natural Resources, the Minnesota Department of Health, Stearns County Soil & Water Conservation District, and the City of Kimball.

Water Quality Monitoring Program

The Clearwater River Watershed District has been monitoring quality of the District's water since its inception. Water quality monitoring is the backbone of the District's water management plans, programs, and projects. The District monitors to establish trends, set goals, determine targeted implementation of programs and projects, and evaluate their effectiveness. Without the monitoring program, the District would not be able to continue its mission.

As part of the Cedar, Albion, Swartout, Henshaw Project #06-1, the District has established a water quality monitoring program specifically designed for this sub-watershed. This program's goals are similar to the larger monitoring program listed above, but is focused only on Lakes Cedar, Albion, Swartout, Henshaw, and their surrounding watersheds. Results from this monitoring are included with the District's annual water quality monitoring reports.

For a summary of the District's 2011 Water Quality Monitoring Program, go to page [17](#). Also, the data from the District's monitoring program are sent to the Minnesota Pollution Control Agency for inclusion in their Environment Database. Check it out at: [MPCA EDA](#).

Other Projects

Lake Augusta West Channel Clean Out Project

The District was petitioned by property owners along the Lake Augusta West Channel in 2011 to clean out the channel to allow access to Lake Augusta for owners along the channel, as well as remove sediment entering the lake from the channel. Around 560 feet of channel were cleaned out, with the benefitted property owners being assessed for the work. This project was inspected in March 2012 and was found to be in order.

Ostmark Basin



The Ostmark Basin was completed in 2004 to correct a developing erosion problem in conjunction with Meeker County Soil and Water Conservation District. Before the basin was installed, runoff was causing a gully to form along 360th Street (Meeker County), and the sediment from this gully was being deposited in Clear Lake. The basin slows the runoff, effectively stopping the creation of the gully, and keeping sediment from entering Clear Lake. The basin was

inspected in March 2012 and found to be working properly.

Norton Avenue Basin



This basin, located above Lake Augusta near Norton Ave on 100th Street NW (Wright County), serves to slow the flow of water downhill to Lake Augusta. This basin was constructed to correct a developing erosion problem that was sending a large amount of sediment into Lake Augusta. By allowing runoff to pond in the basin during rain events rather than gouging the hillside, sediment is kept on the land instead of in the lake.

The basin was inspected in March 2012 and found to be working properly.

2011 Financial Report

The Clearwater River Watershed District conducts an independent audit every year. The audit for fiscal year 2011 is slated to be completed in May 2012. CRWD audits are available for public review at the District's office during normal business hours, at the Annandale Public Library, and online at: http://www.crwd.org/audit_reports.html. Please refer to these audits for detailed information on the financial condition of the District.

2011 Budgeted Expenditures

NOTICE TO ALL CITIZENS OF THE CLEARWATER RIVER WATERSHED DISTRICT

Notice is hereby given that the Board of Managers will hold a public hearing on the proposed 2012 budget for the Clearwater River Watershed District as follows:

Date: September 14, 2011 Time: 7:00 p.m.

Place: Annandale Middle School, Superintendent's Conference Room, Annandale, Minnesota

All citizens of the Clearwater River Watershed District are invited to attend the public hearing. The board will vote to approve or disapprove the budget at the hearing.

GENERAL FUND	Budgeted Expenses	Budgeted Transfers
General Government total	\$146,600	
Advisory Committee	\$600	
Grant Applications	\$7500	
Filter Strip Program	\$ 7,750	
Buffer Strip Program	\$4,200	
Education Program	\$7,050	
Other Maintenance – Special Projects	\$3,000	
Plan/Plat Review	\$700	
Web Site	\$1,800	
Clearwater/Grass Bog Removal	\$4,400	
Other Special Projects	\$28,300	
Transfers to Data Acquisition Fund		\$46,100
Total General Fund	<u>\$212,000</u>	<u>\$258,000(w/ TSFs)</u>
Other Funds		
Augusta Bog	\$100	
Pleasant Lake Outlet	\$480	
Data Acquisition Fund ⁺	\$46,100	
1980 Project Maint. Fund	\$31,130	
Transfer to Kingston Wetland Fund		\$67,000
Transfer to Fertilizer Field Trial Fund		\$88,200
Cedar #06-1 Maintenance	\$28,150	
Cedar Lake AIS Project	\$16,100	
Clearwater Lake Milfoil	\$39,600	
Lake Augusta Milfoil	\$4,125	
Kingston Wetland Restoration ⁺ *	\$147,860	
Fertilizer Field Trial ⁺ *	\$148,200	
Hidden River Maintenance	\$20,100	
Rest A While Maintenance	\$5,800	
Clearwater Harbor Maintenance	\$41,700	
Wandering Ponds Maintenance	\$5,250	
Total Other Funds	<u>\$534,695</u>	<u>\$689,895(w/ TSFs)</u>
Total All Funds	<u>\$746,595</u>	<u>\$947,895(w/TSFs)</u>

⁺ denotes a fund that received a transfer from another fund

* denotes a project receiving grant funding: \$86,860 for Kingston Wetland and \$60,000 for Fertilizer Field Trial By order of the Board of Managers, Clearwater River Watershed District.