Red Lake Watershed District

2011 Annual Report

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Letter from the President

Greetings to all the citizens of the Red Lake Watershed District (District) and other interested parties.

The 2011 spring runoff events varied greatly depending on the area in which you lived. Although we saw very limited spring flooding in the vast majority of our District, the folks along the Red River of the North saw extensive flooding mainly from large snowfall melting and spring rains that occurred in southwestern and western part of the Red River Valley. Although for the most part spring rains were not heavy, it was the number of rainfall events in April and May that prolonged spring planting well into June.

In 2011, two of your District Board members were re-appointed by their respective counties to serve another 3-year term. Lee Coe, rural Tenstrike, was reappointed by the Beltrami County Board of Commissioners and LeRoy Ose, rural Thief River Falls, was reappointed by the Marshall County Board of Commissioners. We are very glad to have Lee and LeRoy on board and they look forward in continuing to be a part of the District and hope to serve the folks of northwestern Minnesota to the best of their ability.

This year was a very busy year for our staff as we completed various on-going projects, continuing with projects, as well as starting many new. District staff along with staff from the Middle Snake Tamarac Watershed District hosted the 2011 Minnesota Association of Watershed Districts tour. A few large projects that made great strides in 2011 are Thief River Falls Flood Damage Reduction Project #171, Improvement to Pennington County Ditch #1/Red Lake Watershed District Ditch #14 Project #171A, Grand Marais Creek Outlet Restoration Project #60F and Grand Marais Creek Cut Channel Stabilization Project #60FF. These along with all our projects are listed in detail in this report and I urge you to review them.

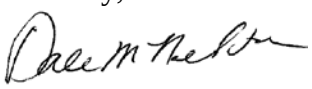
I would like to remind the citizens that the goals of a watershed district are to manage water in the areas of flood control, drainage, and water quality. We continue to hold our meetings on the second and fourth Thursday of each month and welcome public interests and/or attendance at these meetings.

The District office is located at 1000 Pennington Avenue South, Thief River Falls, MN. Feel free to stop in and have a cup of coffee but if you do not have time, please go to our website http://www.redlakewatershed.org and take a virtual tour of our facility as well as get updates of projects throughout the year. A Facebook page was created for the District. By "liking" the RLWD, people can stay updated with meeting announcements, progress of District projects, events, and news. "Like" us at: http://www.facebook.com/pages/Red-Lake-Watershed-District/266521753412008?sk=wall

Our 2011 Annual Audit is included in this report in an abbreviated form. A complete copy of the Annual Audit may be obtained at the District office at 1000 Pennington Avenue South, Thief River Falls.

Once again, it was a pleasure to serve as President of the Board in 2011.

Sincerely,



Dale M. Nelson, President
Red Lake Watershed District

Board of Managers – 2011

Front Row *(left to right*): Albert Mandt, Dale M. Nelson and Orville Knott
Second Row *(left to right*): Lee Coe, Kelly Nordlund, LeRoy Ose and Gene Tiedemann

LeRoy Ose was re-appointed to the RLWD Board of Managers for a 3-year term. LeRoy will represent Marshall County for the years 2012-2014.

Lee Coe was re-appointed to the RLWD Board of Managers for a 3-year term. Lee will represent Beltrami County for the years 2012-2014.

Staff - 2011

Front row: Jim Blix-Water Quality/Natural Resources Technician; Arlene Novak-Accounting/Secretary; Tammy Audette-Accounting Assistant/Secretary; **Back Row**: *(left to right)* Myron Jesme-Administrator; Nick Olson, Summer Intern; Loren Sanderson- Engineering Assistant; Gary Lane-Engineering Technician II; Corey Hanson- Water Quality Coordinator.

Office

The Red Lake Watershed District
Office is located at:
1000 Pennington Avenue South
Thief River Falls, MN 56701
Office Hours:
Monday – Friday, 8:00 a.m. – 4:30 p.m.
Phone: 218-681-5800
Fax: 218-681-5839
Website: redlakewatershed.org
E-Mail: rlwaters@wiktel.com

Meetings

The Board of Managers held twenty-four regularly scheduled board meetings in 2011. These regular meetings are normally held the 2nd and 4th Thursday of each month at the District office at 9:00 a.m. Notice of these meetings are mailed or e-mailed to the Advisory Committees, county auditors, county commissioners, and SWCD/NRCS offices and by subscription. Minutes from board meetings are available by visiting our website at **www.redlakewatershed.org/minutes**. The 2011 General Fund Budget hearing was held on August 12, 2010. Notice for the General Fund Budget hearing was published in at least one newspaper in each of the 10 counties within the watershed district.

2011 Overall Advisory Committee

John A. Nelson, Walker Brook Area
Lloyd Wiseth, Marshall/Beltrami SWCD, Grygla
Steve Holte, Farmer/Landowner
Emmitt Weidenborner, Upper Red Lake Area
John Ungerecht, Upper Red Lake Area
Dan Schmitz, Black River Area
Gilbert Weber, Burnham Creek Area
John Gunvalson, Clearwater River Area
Roger Love, Grand Marais Area
Dave Rodahl, Thief River Area
Joel Rohde, Red Lake Band of Chippewa Indians

2011 Subwatershed Advisory Committee Members

Black River Area
*Dan Schmitz, RLF
Curt Beyer, RLF

Lost River Area
Gary Mathis, Gonvick

Walker Brook Area
*John A. Nelson, Clearbrook

Moose River Area
Wayne Larson, Middle River
Gordon Foss, Grygla
Elroy Aune, Gatzke

Grand Marais/Red Area
Jeep Mattson, EGF
Allen Love, Euclid
Conrad Zak, EGF

Pine Lake Area

Burnham Creek
*Gilbert Weber, Crookston
Dan Geist, Crookston

Poplar River Area

Red Lake River Area
Don Barron, TRF
Keith Driscoll, EGF

Clearwater River Area
Steve Linder, Oklee
*John Gunvalson, Gonvick
Arthur Wagner, Gonvick

Upper Red Lake Area
*Emmitt Weidenborner, Kelliher
*John Ungerecht, Northome

Clearwater Lake Area
John Cucci, Clearbrook

Hill River Area
Jake Martell, Oklee

Thief River Area
Richard Engelstad, Gatzke
*Dave Rodahl, TRF
Larry Hagen, Gatzke

*Overall Advisory Committee Member

The members of the Overall Advisory and the Subwatershed Advisory Committees met on March 28, 2011. Fifteen advisory members, along with District Board members and staff were in attendance. Staff members from the District gave presentations on projects within the District and answered questions from the Advisory Committee members.

History of the Red Lake Watershed District

The Red Lake Watershed District (District) covers an area of approximately 5,990 square miles in northwestern Minnesota and includes all of Red Lake County, most of Pennington County, and parts of Mahnomen, Polk, Itasca, Marshall, Clearwater, Beltrami, Roseau, and Koochiching Counties.

A governmental unit known as the Red Lake Drainage and Conservancy District preceded the District, whose territory included approximately the same land. Under the Conservancy District, three major improvement projects were completed: dredging of the Clearwater, Red Lake, and Lost Rivers.

The Board of Directors of the Red Lake Drainage and Conservancy District felt the District could better function under the Minnesota Watershed Act. The Board petitioned the District Court for the right to operate under Chapter 112, the Minnesota Watershed Act. A hearing was held in Thief River Falls on January 25, 1969, and the Conservancy District was authorized to operate under and exercise all the rights and authorities contained in the Minnesota Watershed Act.

The Board petitioned the Minnesota Water Resources Board (now the Board of Water and Soil Resources) on July 24, 1969, amended January 20, 1970, for a change of name, review of boundary, and distribution of managers of the District. A hearing on the matter was held at Thief River Falls on March 31, 1970, and at Kelliher on April 2, 1970. In their Order, the Water Resources Board stated that the principle place of business shall be at Thief River Falls; that a description of the land within the District be written; specified that the Board of Managers be seven members, the procedure by which county boards shall appoint managers and terms of office for the Managers.

On March 25, 1975, the District adopted the Rules and Regulations pursuant to Minnesota Statutes. They were amended on May 12, 1978; December 14, 1978; August 10, 1989; and reviewed and updated on June 24, 1993, to be entitled “Permit and Drainage Rules of the Red Lake Watershed District.”

In 1977, the District signed a Joint Powers Agreement with other watershed districts in the Red River Basin to form the Lower Red River Watershed Management Board. In 1991, the name was changed to the Red River Watershed Management Board. This organization currently consists of eight watershed districts in the Red River Basin and provides funding to member districts, primarily for floodwater detention structures, which benefit more than one member district. The levy collected is used for funding the development, construction, and maintenance of projects of common benefit to the Red River Basin.

The District currently is governed by Minnesota Statutes 103D, which provides a broader scope for a local unit of government to manage quantity and quality of water within the hydrological boundaries.

2011 District Projects

Grand Marais Sub Watershed Project (RLWD Project #60B)

In 1999, a Project Work Team was organized consisting of Local, State, Federal Agencies and local landowners; this project team was identified as Project 60 Work Team. Through a series of meetings and consensus based agreements, priorities were identified for the Project Work Team to focus on for the foreseeable future.

In 2003, the Project Work Team held 9 meetings in our District office. From these meetings, the Project Work Team identified a series of potential projects to an area east of East Grand Forks, MN that would help alleviate flooding problems to an area consisting of approximately 50 square miles. This area would be later identified as the "Grand Marais Creek Subwatershed Project".

In May of 2003, the Board voted to proceed with the Step 1 submittal for funding to the Flood Damage Reduction Work Group in the event that the Board would decide to proceed with this project. This submittal was accepted by the Work Group and at their June meeting they appropriated $20,000 toward the preliminary engineering of this project.

In the summer of 2003, Governor Pawlenty announced his vision for a Clean Water Initiative. Part of this Initiative was the selection of demonstration projects from four general areas that represent some of the state's most unique and important water challenges. Projects were selected using criteria based on value, measurable results within three years, local support, and alignment of local and state priorities, transferability, and scale. As part of the Initiative, the "Grand Marais Subwatershed Project" was selected by the Governors Clean Water Cabinet as a pilot project for the Red River Basin. Selection of this project acknowledges that the Pawlenty administration has placed a priority on flood damage reduction efforts as well as water quality and Natural Resource Enhancement.

At their meeting in August of 2003, the Board voted to proceed with the preliminary engineers report to better identify the potential costs of this project.

In January of 2004, the Board instructed the District Administrator to proceed with the negotiations for the land required for this project. Discussion with the landowners progressed throughout the year and options were signed for acquisitions of property.

In May of 2004, the preliminary engineers report for both the Euclid East and the Brandt Impoundments was presented to the Board of Managers. Due to the Minnesota Legislature's inaction on a 2004 bonding bill, the board moved and passed a motion to table the two reports until state funding could be secured.

In April of 2005, the State of Minnesota passed a bonding bill which appropriated $2,000,000 to assist in the land acquisition and construction of Euclid East and Brandt Impoundments. Although the District received less than the requested $2,600,000, the Board of Managers instructed the Project Engineer to proceed with the development of the project and start preparations for the hearing at their regularly scheduled meeting held April 14, 2005.

On June 23, 2005, a public hearing was called to order at the Youngquist Auditorium in Crookston Minnesota, for the Grand Marais Creek Subwatershed Project, RLWD Project No. 60B.

On July 14, 2005 the Board of Managers accepted the Findings of Facts as written and approved the Chairman's signature.

On August 25, 2005, the Board adopted a resolution for the Flood Hazard Mitigation Grant Agreement with the Department of Natural Resources for the Grand Marais Creek Subwatershed Project for the Euclid East Impoundment, RLWD Project #60C, and the Brandt Impoundment, RLWD Project #60D. These projects were funded by the following entities: State of Minnesota 50%, Red River Watershed Management Board 37.5%, and the Red Lake Watershed District 12.5%.

At their regularly scheduled Board meeting on April 27, 2006, the Engineer presented the Final Engineer's Report for both the Euclid East (Project 60C) and Brandt (Project 60D) Impoundments. After considerable discussion, the Board approved the Final Reports and instructed the Administrator to proceed with the advertisement for bids with each Impoundment being bid separately.

Bids were opened on May 25, 2006, for the construction of Euclid East Impoundment. Six bids were received with the low bid being awarded to R.J. Zavoral & Sons Inc., East Grand Forks, MN, in the amount of $1,574,672.13. Following the bid opening for the Euclid East Impoundment, the bid opening for Brandt Impoundment was held. Five bids were received with the low bid being awarded to R.J. Zavoral & Sons Inc., East Grand Forks, MN, in the amount of $1,980,388.01.

On September 27, 2007, the Board of Managers held a final payment hearing for R.J. Zavoral & Sons Inc. for the construction of Euclid East Impoundment (RLWD Project 60C) and Brandt Impoundment (Project 60D). Construction cost for Euclid East Impoundment was $1,625,090.36 and total construction costs for Brandt Impoundment to each project was $2,043,389.26. A description of these two projects is provided later in this report.

In 2009, 2010 and 2011, the District continued to meet with the project team to assist in developing and funding of the Grand Marais Outlet Restoration Project which is explained later in this report.

Grand Marais Creek Outlet Restoration (RLWD Project 60F)

Project 60F is a single component of the "Grand Marais Creek Subwatershed Flood Damage Reduction Project – Project 60B" which was described above. This project addresses the Natural Resource Enhancement goals of the 1998 Flood Damage Reduction Mediation Agreement and restoring an adequate and stable outlet to the Grand Marais Creek subwatershed and its several tributaries. The project objective focuses on restoring riparian and aquatic characteristics along the lower six miles of the Grand Marais Creek to its confluence with the Red River. This lower reach was abandoned in the early 1900's as a result of drainage improvements.

The project objectives for the 6 mile Grand Marais Creek Outlet Restoration Project are as follows:

- Restore the original Grand Marais Creek (channel and riparian area) aquatic features and wildlife habitat
- Protect the restored corridor along the entire 6 mile outlet of the Grand Marais Creek through establishment of a perpetual RIM easement
- Restore entire corridor with native vegetation
- Restore fish passage ability along the original Grand Marais Creek
- Enhance water quality in the Red River by significantly reducing existing outlet channel erosion

The project features proposed to achieve the intended project goals are as follows:

- Construction of a diversion structure ("Weir") capable of diverting all low flows from the existing outlet channel (Legal Drainage Ditch) to the restored Grand Marais Creek outlet
- Reconstruct original Grand Marais channel to restore, enhance and protect the original Natural Resource Benefits (riparian corridor, aquatic/wildlife habitat, fish passage, etc.)
- Construct setback levees to contain the diverted high flows and create a riparian buffer between the restored channel and agricultural land
- Construct grade stabilization structures on the existing outlet channel (Legal Drainage Ditch) to reduce erosion and improve water quality on the Red River
- Provide project partner information on site (signage, etc.)

This project is located within the boundaries of the District and the Middle Snake Tamarac Rivers Watershed District (MSTRWD) and because of that on December 15, 2008, the District and the MSTRWD entered into a "Joint Powers Agreement" to follow this project through the necessary procedures. Part of this agreement was to establish a "Joint Board" comprised of three members of the District and two members of the MSTRWD. This Board shall have all powers to exercise any power common to either watershed district Board of Managers.

In 2009, the Joint Board instructed the engineer to proceed with the Environmental Assessment Worksheet (EAW) for the project. On May 28, 2009, the Joint Board approved the EAW and authorized the District staff to proceed with the distribution and advertising of the document. On August 13, 2009, the engineer commented on the EAW submittal and the Joint Board adopted a Resolution approving the Negative EIS Declaration, Findings of Fact, Conclusion of Law, and Order.

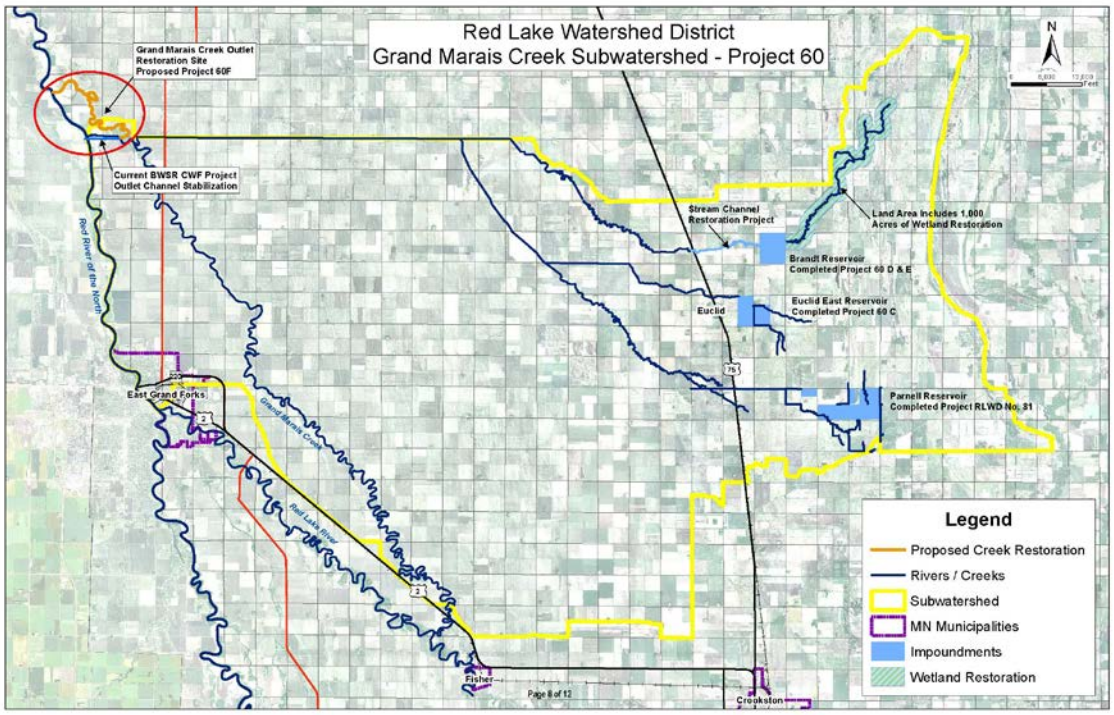
The Joint Board also decided to move forward with land easement acquisition of approximately 470 acres of land which will be funded in part by Reinvest in Minnesota (RIM) program, a grant from Working Lands Initiative and the District. This program will ensure that land easements will be in place at such time funding for the project becomes available.

In 2010, the Joint Powers Board, applied for a grant through the Lessard Sam Outdoor Heritage Council in the amount of $4.7 million. This grant would have been funded through the constitutional amendment voted on and passed by the citizens of Minnesota in 2008. After making it through the hearing phase of the grant application, the District was denied funding for the project.

In 2011, the District Board of Managers decided to separate the Grand Marais Creek Cut Channel, now referred to as RLWD Project 60F, from that of the Grand Marais Creek Outlet Restoration (RLWD Project 60F). This was done in part at the request of the Lessard Sam Outdoor Heritage Council (LSOHC) during the funding request hearings held in 2010. The Council made it very clear that the "Cut Channel" did not fit under their funding criteria and that future funding requests through the Outdoor Heritage Council may be more favorable if that part of the project was omitted.

In 2011, the Joint Board requested the engineer to present a revised preliminary cost estimate based on the separation of the project. Based on the engineers findings, it was determined that the Grand Marais Outlet Restoration Project/Project 60F cost estimate was $5.4 million and the Grand Marais Creek "Cut Channel" Project 60FF cost estimate was $900,000. Based on the revised estimate, the Joint Board once again applied for funding through the LSOHC. Due to the fact the project scope had changed, this year's grant application was for $2,764,000 which was significantly less than the previous request of $4,700,000. Once again the District was asked to present the grant application though the hearing phase but this time we are pleased to announce that we were awarded $2,320,000 for the project. The Joint Board then proceeded to apply for a Flood Hazard Mitigation Grant through the State of Minnesota in the amount of $1.3 million which was approved and are presently waiting for the executed agreement.

It is assumed that we will continue with land acquisition, final engineering and proceed with the hearing late in 2012.



Grand Marais Creek "Cut Channel" (RLWD Project 60FF)

On December 15, 2010, the District was approved for a grant applied for through Board of Water and Soil Resources Clean Water Legacy Competitive Grant Fund. The grant totaling $662,000 which will be used on a portion of the Grand Marais Outlet Restoration referred to as the Grand Marais Creek Cut Channel. The grant along with matching funds will initiate a construction project that will reduce sediment loads that are presently settling into the Red River of the North. The proposed project consists of stabilizing the existing channel and stream banks, establishment of buffer strips along with installation of side water inlet culverts.

In 2011, the District removed this portion of the Grand Marais Outlet Restoration Project from the jurisdiction of the Joint Board due to funding difficulties on Project 60F. This portion of the project has progressed very nicely and is scheduled for a hearing in March of 2012. Construction is anticipated to occur in the summer of 2012.

Looking west towards the Red River of the North

Looking west at erosion area upstream of the Red River of the North.

Looking east at cut-channel from CSAH #64

Petition for a Lateral to Pennington Co. Ditch #75, (RLWD Project #170)

On January 24, 2008, the District Board of Managers received and accepted, upon receipt of the $40,000 bond, a petition for Lateral to Pennington County Ditch #75 located in Star Township, Pennington County. The petition calls for approximately two miles of an east/west ditch to be connected at the northern part of the existing Pennington County Ditch #75. On March 11, 2008, the Board by motion hired Houston Engineering, Inc. to develop a Preliminary Survey Report for this project.

On October 23, 2008, a preliminary hearing was held at the District office. The engineer presented the Preliminary Engineer's Survey Report to the public in accordance to the petition. (A video copy of the hearing is on file at the District office and available for public viewing). Following the closing of the hearing, the Board approved the Preliminary Engineer's Survey Report which they deemed practical and feasible, appointed three viewers, and directed the engineer to prepare a detailed study and final report.

On May 14, 2009, the District Board of Managers received a petition for the Improvement and extension of a lateral to Pennington County Ditch #75 including the lateral petition presented to the Board on January 24, 2008. Due to statutory reasons, the petition was sent back to the petitioner's attorney for clarification.

On October 22, 2009, a preliminary hearing was held at the District office. The engineer presented the Preliminary Engineer's Report to the public in accordance to the petition. (A video copy of the hearing is on file at the District office and available for public viewing). Following the closing of the hearing, the Board approved the preliminary engineers report which they deemed practical and feasible, appointed three viewers, and directed the engineer to prepare a detailed study and final report.

A meeting was held with the Petitioners for the petitioned project in January 2010. As a result of the meeting held in January, on March 9, 2010 at the Districts regularly scheduled meeting, the Board by motion dismissed this project. At the request of some of the petitioners, the District reserved the issue of collection of costs for a reasonable time to see if any other petitions related to this drainage area are presented.

April 14, 2011, due to lack of further action by petitioners to proceed with another alternative for a petition, the Red Lake Watershed Board of Managers instructed Administrator to send letters to petitioners instructing them of the timeline for repayment of the outstanding bond. To date all costs toward the bond have been satisfied and project file has been closed.

Petition for a Lateral to Pennington Co. Ditch #75, (RLWD Ditch #13 Project #170A)

On September 9, 2010, the District Board of Managers received and accepted a petition for a Lateral to Pennington County Ditch #75 located in Star Township, Pennington County. The petition calls for approximately two miles of an east/west ditch to be connected at the northern part of the existing Pennington County Ditch #75. Houston Engineering was appointed by the Board to proceed with the drafting of a Preliminary Engineers Report for this project.

On October 14, 2010, a preliminary hearing was held at the District office. Houston Engineering Inc. presented the Preliminary Engineers Report for a Lateral to Pennington County Ditch #75 to the public in accordance to the petition. Following the closing of the hearing, the Board approved the Preliminary Engineer's Survey Report which they deemed practical and feasible, appointed three viewers, and directed the engineer to prepare a detailed study and final report. (A video copy of the hearing is on file at the District office and available for public viewing).

On January 13, 2011, the Board accepted for filing, the Engineers Detailed Survey Report.

On March 31, 2011, the Viewers Report was received and approved for filing.

On May 12, 2011, the final hearing was held at the District office. There was considerable discussion related to the Viewers Report. Upon completion of the hearing, the Board advised the Viewers to review parcels in question and report back to the Board. (A video copy of the hearing is on file at the District office and available for public viewing).

On May 26, 2011, the Viewers updated the Board on their findings that were questioned during the hearing. Upon completion of the Viewers recommendations, the Board approved by motion the Final Engineers Report and Viewers recommended changes to the Viewers Report and to establish the New Lateral to Pennington County Ditch #75/RLWD Ditch #13 and instruct the Engineer to complete the Plans and Specifications. The Board also instructed legal counsel to draft a resolution for the establishment of the project.

On July 14, 2011, Bids were received for RLWD Ditch #13 with low bid in the amount of $72,546.42 accepted from All Season Contracting, Inc. Blackduck, Minnesota.

On November 10, 2011, Final Payment hearing was held for All Season Contracting in the amount of $7,827.94 with total construction cost of the project was $78,279.38. (A video copy of the hearing is on file at the District office and available for public viewing).

Looking west at Station 14+00

Looking west at Station 24+33

Petition for an Improvement to Pennington Co. Ditch #1 (RLWD Project #171)

On September 24, 2009, the District Board of Managers was presented and accepted, upon receipt of the $40,000 bond, a petition for the Improvement to Pennington County Ditch #1 located in Rocksbury Township, Pennington County, and continues into the city limits of Thief River Falls. The petition calls for the improvement of approximately 4.7 miles of existing legal drainage system. At the same meeting, the Board of Managers appointed HDR Engineering, Inc. as the engineer for the project and instructed them to develop a Preliminary Engineer's Report.

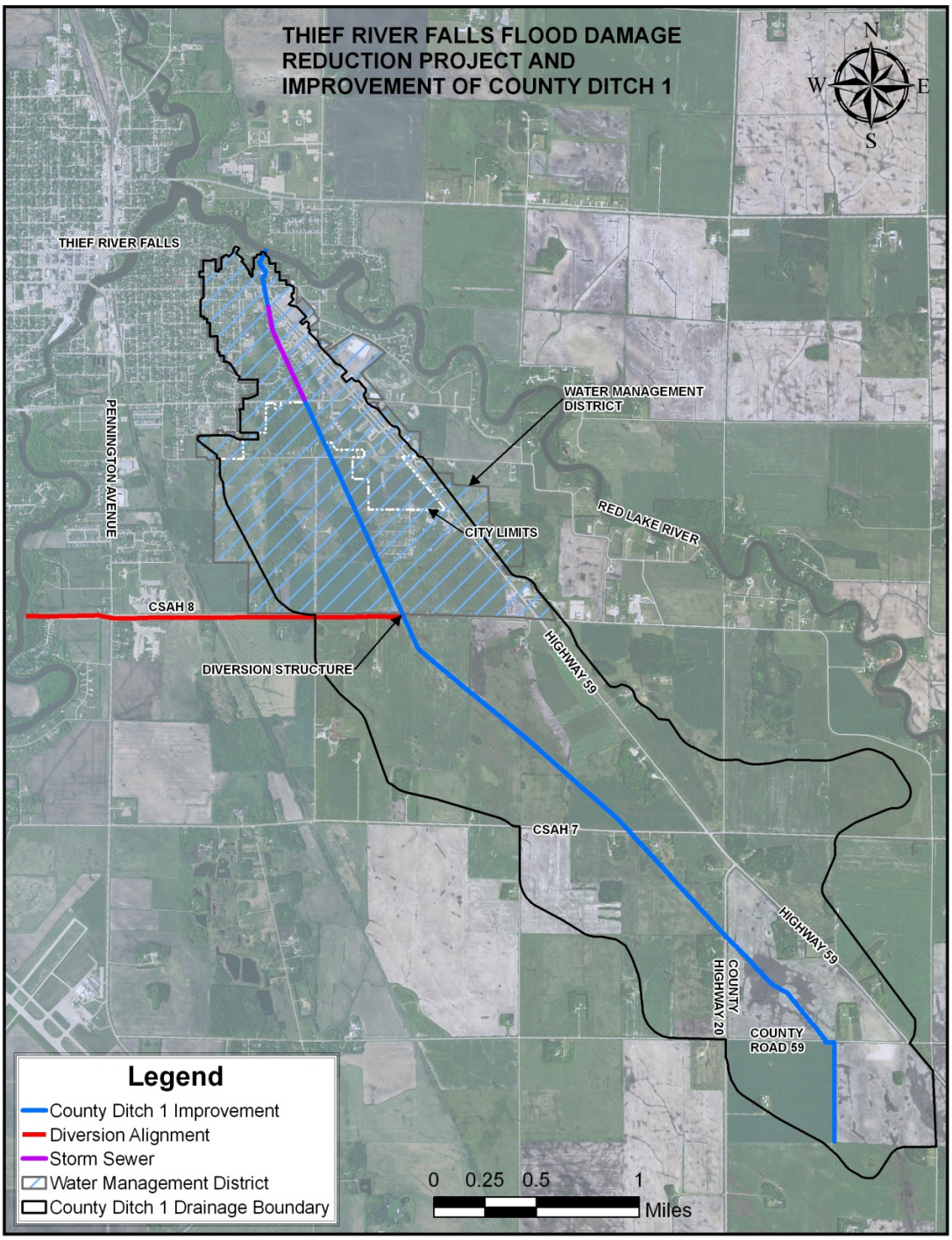
On June 30, 2010, a hearing was held at Ralph Engelstad Arena located in Thief River Falls, MN. The engineer presented the Preliminary Engineer's Report to the public in accordance to the petition. (A video copy of the hearing is on file at the District office and available for public viewing).

On July 8, 2010, at their regularly scheduled Board meeting, a motion was made and passed unanimously to approve the Preliminary Engineers Report which they deemed practical and feasible, appointed three viewers, and directed the engineer to prepare a detailed study and final report.

On July 28, 2011, at our regularly scheduled Board meeting, the Viewers filed their Report to the Board.

On September 13, 2011, a final hearing was held at the Engelstad Arena in Thief River Falls and the Board approved by motion, to establish the Improvement to Pennington County Ditch #1/Red Lake Watershed District #14 according to the Engineers Report and to adopt the Viewers Report of benefits and damages.

It is assumed that we will bid this project in early February 2012 and start construction in the spring of 2012.



Thief River Falls Flood Damage Reduction Project (RLWD Project #171A)

On June 30, 2010, a hearing was held at Ralph Engelstad Arena located in Thief River Falls, MN. The engineer presented the Preliminary Engineer's Report to the public. (A video copy of the hearing is on file at the District office and available for public viewing).

On July 8, 2010, at their regularly scheduled Board meeting, a motion was had and passed unanimously to proceed with the preliminary design for the Flood Damage Reduction Option 3B, which includes a structure and diversion channel to the west.

On September 9, 2010, at their regularly scheduled Board meeting, a motion was made and unanimously passed to amend the motion approved on July 8, 2010, to reflect the Flood Damage Reduction Project under 103D.605 for the Establishment of a Water Management District (WMD) and proceed with the Flood Damage Reduction Option 3B which includes a structure and diversion channel to the west and storm sewer pipe urbanization for the Thief River Falls Flood Damage Reduction, RLWD Project 171A.

On September 23, 2010, the Board was informed that their application to the State of Minnesota for a Flood Hazard Mitigation Grant was approved to assist in the funding of Thief River Falls Flood Damage Reduction Project. The grant agreement will cost share up to 1/3 of the total project cost, not to exceed $700,000. The grant was signed and executed on November 2, 2010.

Early in 2011, the District petitioned the Board of Water and Soil Resources to update the Districts 10 Year Comprehensive Overall Plan to allow the District to establish a Water Management District (WMD). If approved, the establishment of a WMD would allow the District the opportunity to levy a fee to the WMD which would be used to assist in funding the local portion of the Flood Damage Reduction Project.

On March 31, 2011, the Board held a duly noticed public hearing on the proposed plan amendment. Following the hearing, the board directed all comments along with the record of the hearing be transmitted to the Board of Water and Soil Resources for its consideration as part of the plan amendment proceedings.

On April 28, 2011, the Board of Water and Soil Resources issued its order amending the District's Watershed Management Plan to include project number 171A, allowing the creation of a Water Management District for the project, authorizing the establishment and approval of a cost allocation for the project, authorizing the establishment of a WMD Charge allocation for properties within the WMD, and authorizing the imposition of WMD Charges as a mechanism for funding the project.

On August 25, 2011, the Department of Natural Resources issued its report on project number 171A finding no errors or departures from required standards for the project. Rather than submitting an independent report on project number 171A, the Board of Water and Soil Resources incorporated its comments on the project into its order amending the District's Watershed Management Plan to include the project.

On August 30, 2011, the District staff, engineers and viewers held informational meetings regarding project number 171A to provide an opportunity for landowners affected by the project to better understand the project, the method of financing, and the impact of the project on individual properties. Several members of the public attended the meetings and provided information to the District staff relevant to the project.

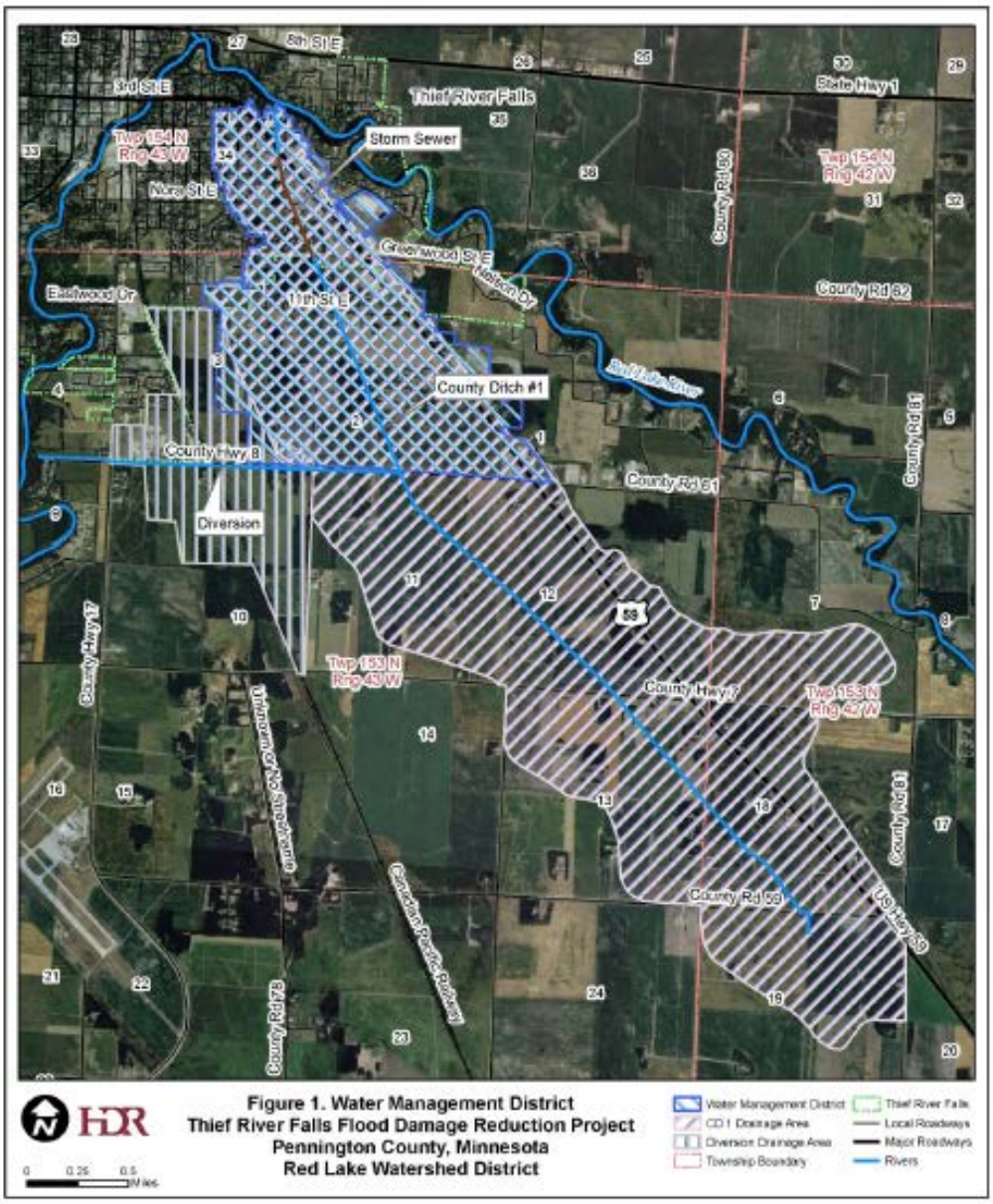
On September 13, 2011, the District held a duly noticed public hearing on project number 171A. Upon the close of public comment at the hearing, the Board deliberated over the establishment of the project and the adoption of a final order for the project. Upon deliberation and after considering the record of the proceedings, the Board determined that project number 171A met the establishment criteria found in statute. The Board approved a motion to establish project number 171A according to the engineer's report and agency advisory reports; to recess the hearing; and to direct legal counsel to prepare findings and an order consistent with the motion for the Board's consideration and adoption.

The Board recessed the hearing to its regular meeting of September 22, 2011, and further recessed the hearing to its regular meeting on October 13, 2011, at which time the Board approved the Final Order Establishing Project and Implement Water Management District charges for the establishment of the Thief River Falls Flood Damage Reduction Project, RLWD Project No. 171A.

It is assumed that this project will be bid in early February 2012 and start construction in the spring of 2012.

Water Management District

The WMD is approximately 1,070 acres in area and is a mix of agricultural, commercial, industrial, and residential properties. See Figure below for a map of the WMD boundary.



2011 Spring Flood

As early as January and into February, "Spring Flood" became a topic of discussion. Throughout the Red River Basin, many cities and agencies held meetings for flood preparedness. Minnesota Governor Mark Dayton and Senator Al Franken also visited the Red River Valley and held town meetings concerning potential flooding.

The Red River Basin experienced significant flooding however portions of the District did not have severe spring flooding conditions. These areas were mainly in the Northeastern and Eastern parts of the District (Beltrami, Clearwater, Pennington, East Marshall, and Red Lake Counties). Most of the flood damage occurred in the western areas of the district, nearer to the main stem of the Red River of the North, primarily in Polk County.

Dry weather conditions and above average temperatures prevailed from about August through December. The first measurable snowfall came on December 30th.

Esther Township, West Polk County

The two pictures listed below are of a ring dike constructed in 2009 in Vineland Township, West Polk County, near the Red River. The picture on the left is during construction and the picture on the right shows the protection during the spring flood of 2011. This was the first high water event after construction of the ring dike.

Flood Control Impoundments

Impoundments operated by the District are quite diverse. Actual project operations are based on available flood storage, outlet structure facilities, and outlet channel capacity. Each impoundment is designed based on upstream drainage area, topography, and runoff conditions. Some of the flood storage facilities are operated with adjustable stop-logs, adjustable flood gates, or fixed crest weir structures.

Projects with adjustable flood gates and/or stop-logs have more flexibility for storing and also for controlling outflows from flood events. Fixed crest structures store water to the specific elevation of a weir, at which time outflows occur automatically. The pictures are examples of non-gated, fixed crest outlet structures.

Baird Beyer Dam, Red Lake County
Tributary to the Black River

Control Structure

BR #6 – Impoundment, Polk County
Upper Burnham Creek & CD #140

Control Structure

During flood and large runoff events, flood waters are stored within the impoundments and, as downstream conditions allow, the stored water is released in a controlled manner. This is done by operating flood gates or by adjusting stop-logs, depending on the respective flood storage facility. Storage is calculated in acre feet which is a volume measurement that is one acre in area by one foot deep. Storage capacity in impoundments varies depending on acreage and depth of the storage area. One foot of water depth in an impoundment can be many thousand acre feet of storage. Some of the impoundments are “dry pools” which means that the pool is basically drained dry after stored flood waters are released. Other impoundments are operated with a small permanent pool throughout the year.

The District’s operation of our flood control facilities, both gated and non-gated, consisted of flood gate operation during runoff, monitoring of pool elevations and routine maintenance work. Some of the impoundments are operated solely by the District others are operated cooperatively with the Red Lake Band of Chippewa Indians, Minnesota Department of Natural Resources, U.S. Fish and Wildlife Service, Natural Resource Conservation Service, and local Soil and Water Conservation Districts.

Routine inspections are performed and the condition of the embankment and control structures is evaluated. Typical maintenance includes flood damage repairs, debris removal, removal of beaver dams/debris, nuisance beaver, and vegetation control (mowing the grassed embankment area and spraying).

The following describe some of the larger impoundment facilities that have gated and/or stop-log control flexibility.

Euclid East Impoundment (RLWD Project #60C)

GENERAL: Construction of the Euclid East Impoundment began on June 15, 2006. Due to excellent working conditions, it was substantially completed by the middle of November. The project became functional for operation in the Spring of 2007. The District and HDR Engineering of Thief River Falls performed construction surveying and inspection duties. The project is funded jointly with the State of Minnesota, Red River Watershed Management Board and the District.

LOCATION: The project is located in Section 24, Euclid Township, and Section 19, Belgium Township, Polk County, approximately 12 miles north of Crookston.

PURPOSE: The project will store runoff and reduce flooding on downstream agricultural lands and urban areas by retaining up to approximately 2,443 acre-feet of floodwater. The storage of water in the reservoir will also reduce peak discharges on legal ditch systems, Branch C of County Ditch #66, County Ditch #66 (Main), and County Ditch #2.

PROJECT COMPONENTS: The embankment and reservoir is constructed of approximately 3.6 miles of earthen clay embankment (332,681 cubic yards, & approx. 12 feet at highest point), a grass lined emergency spillway, 2.4 miles of inlet channels and culvert works, 0.8 mile of outlet channel and a gated concrete outlet structure. The operable components are the gated structure which releases water from the impoundment into an outlet channel. This water then flows northwesterly through legal ditch systems and eventually to the Red River of the North.

FUNCTIONAL DESIGN DATA

	Elev. (ft. – msl)	Storage (ac. – ft.)
Top of Dam (Total Storage)	908.0	2,443 (2.68 in. runoff)
Secondary Spillway	905.0	
Ungated Storage to Emergency Spillway	906.0	565 (0.62 in. runoff)
Gated Storage		1,878 (2.06 in. runoff)
Drainage Area – 17.1 sq. mi.		

OPERATIONAL: Summer 2007

Principal Outlet Structure

Principal Outlet Structure – looking west

In 2011, gate operation and extended storage occurred during spring runoff and also minor operation in late July and early August due to rainfall runoff. The pool crest elevation was on April 21st at Elevation 903.1.

Construction upgrades to the southeast (primary) inlet channel consisted of installation of additional culverts at two locations (township road and field entrance); installation of a rock spillway; and construction of 1500 feet of berm on the north side of the inlet, to contain water in the channel and to enhance flows to enter the impoundment. This work was approved by the Board of Managers at a public hearing on August 12, 2010. However, due to the timing of fall harvest and wet conditions the work was not completed until 2011.

Township Road Site

Field Entrance Site and Berm

Brandt Impoundment (RLWD Project #60D)

GENERAL: Construction of the Euclid East Impoundment began on July 31, 2006, and was substantially completed by the middle of November. The District and HDR Engineering of Thief River Falls jointly performed construction surveying and inspection duties. The project is funded by the State of Minnesota, Red River Watershed Management Board, and the District.

LOCATION: Section 7, Belgium Township, Polk County, approximately 14 miles north of Crookston.

PURPOSE: The project will store runoff and reduce flooding on downstream agricultural lands and urban areas by retaining up to approximately 3,912 acre-feet of floodwater. The storage of water in the reservoir will also reduce peak discharges on the downstream "Brandt Channel" and legal County Ditch #2 system.

PROJECT COMPONENTS: The embankment and reservoir is constructed of approximately 3.5 miles of earthen clay embankment (492,579 cubic yards, & approx. 19 feet at highest point), a grass lined emergency spillway, 2 – lines of 6 x 8 concrete box culverts and a gated concrete outlet structure.

Principal Outlet Structure

Operable components are the gated structure which releases water from the impoundment into an outlet channel. This water then flows west - northwest through the "Brandt Channel" legal County Ditch #2 system and eventually to the Red River of the North.

FUNCTIONAL DESIGN DATA

	Elev. (ft. – msl)	Storage (ac. – ft.)
Top of Dam (Total Storage)	918.0	3,912 (3.1 in. runoff)
Secondary Spillway	914.5	
Ungated Storage to Emergency Spillway	916.0	786 (0.62 in. runoff)
Gated Storage		3,126 (2.48 in. runoff)
Drainage Area – 23.6 sq. mi.		

OPERATIONAL: Spring 2008

In 2011, gate operation and extended storage occurred during spring runoff and also minor operation in late July and early August due to a rainfall event. The pool crest elevation occurred on April 21st at an elevation of 912.0.

Parnell Impoundment (RLWD Project #81)

GENERAL: Construction of the Parnell Impoundment began in 1997 and was completed in 1999. In 2003 modifications were made to the original design by lowering the emergency spillway 1.5 feet, expanding the interpool connecting channel, and installing an operable screwgate on the weir structure in the JD #60 outlet. The impoundment is now better utilized to store floodwaters by operating control gates.

LOCATION: Sections 3 and 4, Parnell Township, Polk County, approximately 12 miles northeast of Crookston. The drainage area above the dam is approximately 23 square miles.

PURPOSE: The project will reduce flooding on downstream agricultural lands and urban areas by retaining up to approximately 4,000 acre-feet of floodwater. The storage of water in the reservoir will also reduce peak discharges on four legal ditch systems, County Ditch #126, Judicial Ditch #60, County Ditch #66, and County Ditch #2.

PROJECT COMPONENTS: The impoundment incorporates a 2 – pool design (no permanent pool), with two separate outlets, and an interpool connecting channel. The embankment and reservoir is constructed of approximately 5 miles of earthen embankment (approx. 18 feet at highest point), a concrete emergency spillway and two gated concrete outlet structures. Operable components are the two gated structures which release water from the impoundment into two separate outlet channels. One of these channels is JD #60, which flows south to the Red Lake River and the other is CD #126, which flows west and eventually to the Red River of the North.

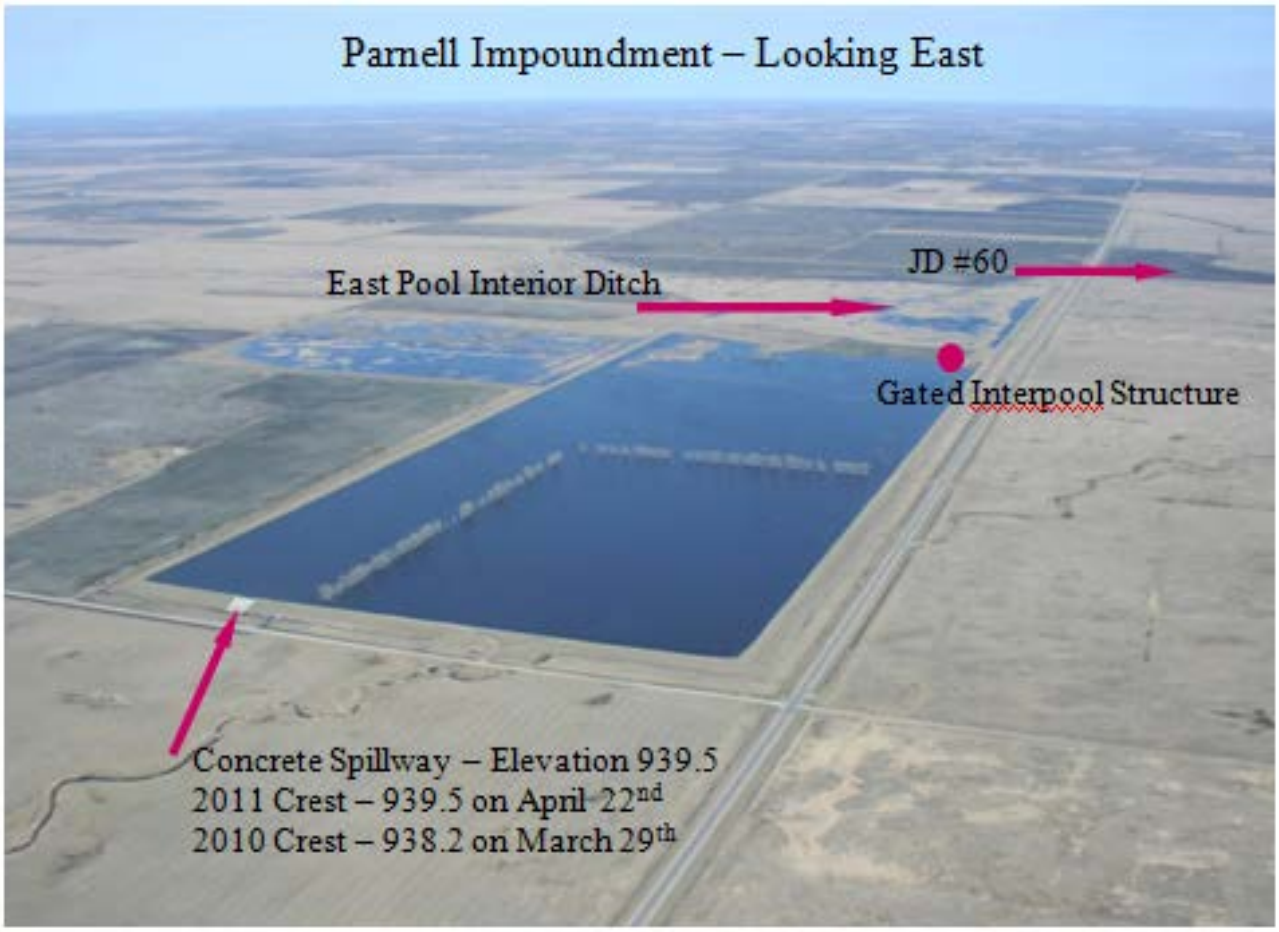
FUNCTIONAL DESIGN DATA:

	Elev. (ft. – msl)	Storage (ac. – ft.)
Top of Dam	943.0	4,000
Emergency Spillway	939.5	3,000
Drainage Area – 23 sq. mi.		

OPERATIONAL: 1999 – Original Design 2004 – Modified Plan

COST: Approximately - $3,200,000
Funded by: Red Lake Watershed District
Red River Watershed Management Board

In 2011, gate operation and extended storage occurred during spring runoff. Controlled releases, when downstream conditions were acceptable were made by adjusting the outlet structure gate. The West Pool Crest elevation occurred on April 22nd at an elevation of 939.50.



Aerial view of Parnell Impoundment (looking east)

Historical ranking of five highest recorded pool elevations		
Ranking	Date	Elevation
1	March 25, 2009	939.75
2	April 22, 2011	939.50
3	April 13, 2006	939.00
4	March 29, 2010	938.20
5	June 12, 2002	937.10

Pine Lake (RLWD Project #35)

GENERAL: In 1980, the Clearwater County Board of Commissioners petitioned the District for an improvement of the Pine Lake outlet. Constructed in 1981, a sheet pile dam with two adjustable stop log bays was built about 800 feet north of the lake on the Lost River.

LOCATION: The site is near the south center of section 21, Pine Lake Township, Clearwater County. The drainage area above the dam is 45 square miles.

PURPOSE: This multi-purpose project designed to provide the public with flood control and wildlife benefits. The Gonvick Lions Club has donated hundreds of man-hours and when necessary, members operate the aeration system, install and maintain signage.

FUNCTIONAL DESIGN DATA:

	Elev. (ft.=msl)
2nd Stage – Top of Dam	1284.5
1st Stage – Top of Dam	1284.0
Typical Summer – top of stop logs	1283.5
Typical Winter	1282.5

The Pine Lake control structure is a sheet pile dam with 2 – four foot wide adjustable stop-log bays. The stop-logs can be adjusted between elevations 1281.5 to 1283.5. There is also 26 feet of fixed crest weir at elevation 1284.0, and 65 feet of fixed crest weir at elevation 1284.5. Based primarily on the lake elevation, stop-logs may be removed from the dam to allow additional outflow until the lake level recede and then are replaced to the typical summer or winter elevation.

High flow during spring runoff

The dam is also designed with a small fixed crest weir at elevation 1282.5, which is one foot lower than the normal summer stop-log elevation. This was an innovative design in the early 1980's, and allows for minor outflows that provides stream flow maintenance. This is very important for keeping some flow in the Lost River especially during periods of low flow. Factors to consider when adjusting the stop-logs are monitoring "inflows" to the lake, existing lake elevation, downstream conditions and predicted runoff .

Some rainfall events during the year generated enough runoff to fluctuate the lake elevation and require stop-log operation. The lake crest elevation occurred on June 30, 2011, at an elevation of 1284.20. The normal Fall drawdown began on October 6th and extended to November 30th. Staff personnel at the Sportsman's Lodge are very helpful in reading the lake elevation gauge located inside the business and a local resident records rainfall data at the lake.

Historical ranking of five highest recorded pool elevations		
Ranking	**Date**	**Elevation**
1	April 11, 2009	1286.0
t2	July 5, 1997	1285.7
t2	June 26, 2002	1285.7
3	April 27, 1996	1285.5
4	April 18, 2001	1285.4
5	April 8, 1999	1285.1

Typical Fall Drawdown with Stoplogs Removed

Elm Lake-Farmes Pool (RLWD Project #52)

GENERAL: Elm Lake was drained in about 1920 by the construction of Branch #200 of Judicial Ditch #11. The Elm Lake project is a cooperative effort of the U.S. Fish and Wildlife Service, MN Department of Natural Resources, Red Lake Watershed District, and Ducks Unlimited. The majority of funding for the project was provided by Ducks Unlimited and at the time Elm Lake was created, it was the largest Ducks Unlimited project in the lower 48 states.

LOCATION: Marshall County, approximately 17 miles northeast of Thief River Falls. The drainage area of Ditch 200 above Elm Lake is 63 square miles.

PURPOSE: Multi-purpose – designed to meet three major objectives: Flood control, increase wildlife values, and upstream drainage improvement.

Stoplog Outlet Structure

PROJECT COMPONENTS: Approximately 9 miles of earthen embankment, an outlet control structure, rock lined emergency spillway, and an enlargement of a portion of Ditch 200.

FUNCTIONAL DESIGN DATA:

	Elev. (ft. – msl)	Storage (ac. – ft.)
Top of Dam	1145.0	19,700
Emergency Spillway	1142.0	11,000
Max Summer	1141.0	7,500
Typical Summer	1140.0	5,500
Typical Winter	1139.0	3,500

Drainage Area – 63.0 sq. mi.

COST: Approximately - $2 million

OPERATIONAL: 1991

Agassiz National Wildlife Refuge staff performs the actual operation of the outlet structure (stop-logs and screw gate) with cooperation from the District. In 2009, repairs were made to the principal outlet structure. Work consisted of repairing stop-log bays and channels, removal of corroded stop-logs and installation of new handrails and safety grates. The 2011 spring runoff was not a big concern in this part of the District. However, water was stored in the spring and also minor storage at various times from rainfall events. The pool crested on April 14th at an elevation of 1141.23.

Historical ranking of five highest recorded pool elevations		
Ranking	**Date**	**Elevation**
1	April 23, 1997	1143.3
t2	April 28, 1996	1142.4
t2	April 4, 1999	1142.4
t2	June 14, 2002	1142.4
3	April 10, 2006	1142.0
4	April 3, 2009	1141.9
5	July 28, 1993	1141.3

Lost River Impoundment (RLWD Project #17)

GENERAL: Approximately in the mid-1970's, the project was constructed by the Minnesota Department of Natural Resources to improve waterfowl habitat. On December 14, 1978, the District entered into a formal agreement with the Minnesota Department of Natural Resources to modify the original impoundment by raising the elevation of the dike and emergency spillway. Four (4) 48 in. diameter gated pipes and a spillway from Ditch 200 of JD #11 supply water to the impoundment which is an "off channel" reservoir.

LOCATION: Marshall County, Grand Plain Township, approximately 20 miles northeast of Thief River Falls. The drainage area above the impoundment is 53 square miles.

PURPOSE: Multi-purpose – designed to increase wildlife values, and provide flood control.

PROJECT COMPONENTS: Approximately 10 miles of earthen embankment, an outlet control structure, and an emergency spillway into Ditch 200.

FUNCTIONAL DESIGN DATA:

	Elev. (ft. – msl)	Storage (ac. – ft.)
Top of Dam	1150.2	14,600
Emergency Spillway	1148.2	10,000
Typical Summer	1146.2	5,500
Typical Winter	1145.2	3,700

Drainage Area – 53.0 sq. mi.

COST: To modify - approximately - $109,000

OPERATIONAL: 1978

The MnDNR staff performs the actual operation of the outlet structure with cooperation from the District.

The 2011 spring runoff was not a big concern in this part of the District. However, water was stored in the spring and also minor storage at various times from rainfall events. The pool crested on April 16th at an elevation of 1147.30.

Gated Outlet Structure

Historical ranking of five highest recorded pool elevations		
Ranking	**Date**	**Elevation**
1	April 14, 1999	1147.8
t2	April 26, 1997	1147.6
t2	June 25, 2002	1147.6
3	April 1, 1985	1147.5
4	April 10, 2006	1147.45
5	August 20, 2001	1147.3

Good Lake Impoundment (RLWD Project #67)

GENERAL: The Good Lake Project is a cooperative effort between the Red Lake Band of Chippewa Indians and the District.

Gated Principal Outlet Structure

LOCATION: The project area lies entirely within the Red Lake Indian Reservation. The impoundment is approximately 30 miles east of Thief River Falls, in Clearwater and Beltrami Counties. The drainage area above the dam is 82 square miles.

PURPOSE: Multi-purpose project to provide wetland habitat, flood water retention, and potential irrigation water supply.

Fish and Wildlife: Enhanced wetland habitat for waterfowl, furbearers, and other wetland species. The reservoir also has the potential for seasonal rearing of northern pike.

Flood Control: The project will reduce flood peaks on both the Red Lake River and the Red River of the North. The dam will store runoff from the 73 square mile drainage area. Spring storage capacity is 11,300 acre-feet and is equal to 2.6 inches of runoff from the drainage area. The project will also reduce flooding on approximately 4,000 acres of private land immediately west of the project, by intercepting overland flows.

Water Supply: The reservoir may be used as a water source for irrigation of wildrice paddies. Paddies have not been built, but there is potential for paddy development in adjacent areas.

PROJECT COMPONENTS: Approximately 9 miles of earthen embankment, 7.5 miles of inlet channels, a reinforced concrete outlet structure, and 2 miles of outlet channel. Water released from the impoundment, enters the Red Lake River approximately 2.5 miles downstream (south easterly) from the outlet control structure.

FUNCTIONAL DESIGN DATA:

	Elev. (ft. – msl)	Storage (ac. – ft.)
Top of Dam	1178.5	27,500
Flood Pool (Emer. Splwy.)	1176.1	13,100
Norm. Summer Pool	1173.0	3,250
Norm. Winter Pool	1172.0	1,800

Drainage Area – 73 sq. mi.

COST: Approximately - $2,129,000

Funding or in-kind contributions were provided by:

Red Lake Band of Chippewa Indians
Red Lake Watershed District
Red River Watershed Management Board
State of Minnesota

OPERATIONAL: 1996

Historical ranking of five highest recorded pool elevations		
Ranking	**Date**	**Elevation**
1	May 25, 1999	1176.8
2	May 6, 1997	1176.2
3	May 20, 1996	1176.0
4	April 21, 2009	1175.9
5	May 14, 1998	1175.8

In 2011, the pool crest occurred on May 24th at an elevation of 1174.70. The normal fall drawdown began on November 2nd by removing some of the stop-logs. This is done to provide storage for the 2012 spring runoff event.

On April 12, 2011 the Red Lake Tribal Council approved a new 5 year Special Land Permit (Resolution No. 61-11) granted to the District. The original permit had expired on January 12, 2010. In part, the permit states "The purpose of this permit is to facilitate cooperative management of the Good Lake Impoundment, where the District and the Red Lake Band will cooperatively inspect, supervise and conduct necessary maintenance at the Good Lake Flood Control project site. Activities will be coordinated with the Red Lake Department of Natural Resources." Also, as part of the land use permit, the District is granted a right of access to the land described for a period of five years, starting on the date the permit commenced. It was signed by the Tribal Chairman and Secretary on April 13, 2011.

April was the first time that District staff was on site in 15 months. At that time, District staff met with the Red Lake DNR personnel to discuss maintenance issues and determine which agency would be responsible for repair items. The DNR performed repair and graveled the access road and they also enhanced habitat for waterfowl, furbearers, and other wetland species.

The District repaired the main outlet structure (as there was additional vandalism), hired a local landowner to perform mowing on the dike and access roads, and in the Fall hired a contractor to remove two culverts that had totally rusted out and were a concern to the integrity of the dike and a possible breach in the Spring of 2012. The dike in these two areas was repaired with select clay borrow material and compacted with a self propelled sheepsfoot.

Removal of Walkway and Gate Structure

Repair of Dike after Removal of Structure

Moose River Impoundment (RLWD Project #13)

GENERAL: The project, which is a two pool design, is the largest impoundment operated by the District. It was a cooperative effort of the District, Red River Watershed Management Board, and the Minnesota Department of Natural Resources for flood control and wildlife management. Flood damages will be reduced by impounding floodwaters in the upper reaches of the watershed. Wildlife and associated recreational benefits will be enhanced by water retained in the two pools. The project is constructed on lands managed by the Minnesota Department of Natural Resources.

LOCATION: The project is located at the headwaters of the Moose and Mud Rivers in northwestern Beltrami County, approximately 15 miles northeast of Grygla, MN. The drainage area above the project is 125 square miles.

PURPOSE: Multi-purpose – designed to provide flood control, streamflow maintenance, increase wildlife values, and benefit fire control.

COST: The total project cost was approximately $3.4 million. Funding was provided by the following:

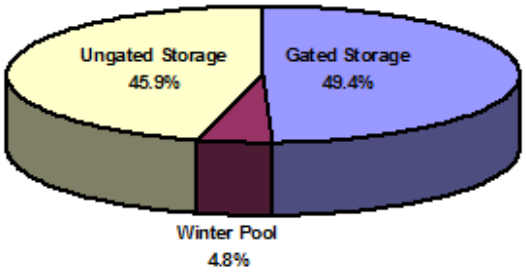
State of Minnesota	$1,690,000
Red Lake Watershed District	$ 612,000
Red R. Watershed Management Board	$ 1,126,000

OPERATIONAL: 1988

FUNCTIONAL DESIGN DATA:

	North Pool	South Pool	Total
Top of Dam Elev. (ft.–msl)	1218.0	1220.0	
Freeboard Flood Elev. (ft.–msl)	1217.2	1219.3	
Freeboard Flood Storage (ac.ft)	16,250	38,250	54,500
Emer. Spillway Elev. (ft.–msl)	1216.0	1218.0	
Emer. Spillway Storage (ac.ft.)	12,000	24,250	36,250
Gated Pool Elev. (ft.-msl)	1215.3	1217.4	
Gated Pool Storage (ac.ft.)	9,750	19,750	29,500
Typical Summer Elev. (ft.-msl)	1211.7	1213.6	
Typical Summer Storage (ac.ft.)	2,000	4,000	6,000
Typical Winter Elev. (ft.-msl)	1210.5	1212.4	
Typical Winter Storage (ac.ft.)	800	1,800	2,600
Max No-Flood Elev. (ft.-msl)	1212.5	1214.5	
Max No-Flood Storage (ac.ft.)	3,000	6,000	9,000
Project Drainage Area (sq. mi.)	41.7	83.3	125.0

This impoundment has a small permanent winter pool to allow for maximum storage capacity as indicated on the graph shown to the right.



Moose River Impoundment – North Pool

The North Pool outlets into the Moose River (JD #21). The major components of the north pool are: 5 miles of diversion ditch, 4 miles of earthen dike with a top elevation of 1218.0, one gated outlet structure, one rock lined emergency spillway at an elevation of 1216.0. Approximately 1/3 (41.7 sq. mi.) of the total project drainage area (125.0 sq. mi.) drains to the Moose River.

North Pool - Gated Principal Outlet Structure

The 2011 spring runoff was not a big concern in this part of the District. However, water was stored in the spring and also minor storage at various times from rainfall events. Due to several months of above average temperatures and dry conditions, the typical Fall drawdown to winter level was easily obtained on October 16th.

The maximum North Pool elevation for 2011 was 1212.25 (8987 ac/ft) which occurred on May 2nd and is the 4th highest recorded pool crest.

Historical ranking of five highest recorded pool elevations		
Ranking	**Date**	**Elevation**
1	May 16, 1999	1215.90
t2	April 22, 1997	1215.85
t2	June 15, 2002	1215.85
3	May 21, 1996	1215.80
4	May 2, 2011	1215.25
t5	August 7, 2001	1214.80
t5	April 19, 2009	1214.80

Moose River Impoundment – South Pool

The South Pool outlets into the Mud River (JD #11). The major components of the south pool are: 3 miles of diversion ditch, 9 miles of earthen dike with a top elevation of 1220.0, 4 miles of earthen dike between the north and south pools, one gated outlet structure, two rock lined emergency spillways at an elevation of 1218.0. Included between the pools is an interpool structure which may be used to pass water between the pools. Approximately 2/3 (83.3 sq. mi.) of the total project drainage area (125.0 sq. mi.) drains to the Mud River.

South Pool - Gated Principal Outlet Structure

The 2011 spring runoff was not a big concern in this part of the District. However, water was stored in the spring and also minor storage at various times from rainfall events. Due to several months of above average temperatures and dry conditions, the typical Fall drawdown to winter level was obtained on October 26th.

The maximum South Pool elevation for 2011 was 1217.25 (17,532 ac/ft) which occurred on May 2nd and is the 5th highest recorded pool crest.

Historical ranking of five highest recorded pool elevations		
Ranking	**Date**	**Elevation**
1	May 16, 1999	1218.05
2	May 9, 1997	1217.90
3	June 7, 1996	1217.80
4	July 11, 2002	1217.65
5	May 2, 2011	1217.25

Schirrick Dam (RLWD Project #25)

GENERAL: The Schirrick Dam was constructed on the Black River in 1984. The project is constructed on property owned by Don Schirrick.

Principal outlet structure hydraulic gate operation

LOCATION: Section 35, Wylie Township, Red Lake County, approximately 20 miles northeast of Crookston. The drainage area above the dam is 107.7 square miles.

PURPOSE: The primary purpose is to provide flood relief on the Red Lake River and the Red River of the North by controlling the flow contribution from the Black River. A small permanent pool is also provided.

PROJECT COMPONENTS: An earthen embankment (38 feet at highest point) and a gated concrete outlet structure. The reservoir has the capacity to detain up to 4,800 acre-feet of water. Operable components are stop-log bays to control the elevation of the permanent pool and hydraulic flood gates to control the flow contribution of the Black River during floods. The gates will normally be open and will only close in the event of severe mainstem flooding.

Looking downstream from outlet structure

FUNCTIONAL DESIGN DATA:

	Elev. (ft. – msl)	Storage (ac. – ft.)
Top of Dam	992.5	6,100
Gated Storage	987.0	4,000
Emergency Spillway	989.3	4,800
Permanent Pool	962.0	70

Drainage Area – 107.7 sq. mi.

The highest recorded pool elevation is 988.75 during historic flood of 1997

COST: Approximately - $1,019,000

OPERATIONAL: 1985

Aerial view of Schirrick Dam looking south

Due to no major spring or summer runoff events in 2011, the predicted downstream river crests did not require gate closure or storage. In June, District staff and personnel from the Minnesota Department of Natural Resources (MnDNR) Dam Safety Division, performed an inspection of the outlet structure and embankment. They did suggest some minor repairs to the structure, which the District will address, and to continue monitoring the embankment for erosion since it is used for grazing. Overall, the MnDNR was pleased with the condition and integrity of the outlet structure and embankment.

Water Quality Report

Red Lake Watershed District Water Quality Program

The District initiated several new water quality projects in 2011 that were funded by the Clean Water, Land, and Legacy Amendment through grants and contracts with State agencies. The Minnesota Pollution Control Agency (MPCA) is funding two watershed restoration and protection (WRAP) projects and a surface water assessment grant (SWAG) monitoring project in the Thief River watershed. The Minnesota Board of Water and Soil Resources (BWSR) is funding a grade stabilization project on Marshall County Ditch 20. Staff got up close and personal with the Thief River and its tributaries while working on a geomorphology assessment of that watershed. Also, the District's regular monitoring program continues to collect data at more than forty sites throughout the district.

Thief River Watershed Assessment Project

Phase I of this project was allotted a budget of $185,000 by the MPCA for 2011 through 2013. Phase II will begin on July 1, 2013, end on June 30, 2015, and has been allotted $100,000. This funding comes from the Clean Water, Land, and Legacy Amendment. The contract for Phase I of this project was officially executed (signed and made official) on April 21, 2011.

The primary goal of this project is the completion of a watershed-based TMDL, which will provide water quality assessments, protection plans and TMDL reports for all the significant (10-digit HUC) waterways in the watershed. There are several objectives that take this project beyond a typical TMDL, including biological monitoring, stream channel stability assessments and civic engagement. Civic engagement is an enhanced version of stakeholder development that is being incorporated into watershed-based TMDL projects throughout the state.

This project's planned work has been divided into thirteen tasks. Here's what was accomplished in 2011:

Task 1: Evaluation of Existing Data

All existing data will be compiled and analyzed for completeness. Gaps in the existing data will be identified and recommendations will be made for additional data collection. The District will plan and coordinate the collection of this additional data using funds from this project and the Thief River Surface Water Assessment Grant (SWAG) project. The results of this process will be summarized in a report that will be provided to the MPCA Project Manager.

In 2011, staff from the United States Geological Survey provided continuous flow, continuous water quality, discrete water quality sample, and discrete flow measurement data for the Thief River monitoring site at the Agassiz National Wildlife Refuge North Boundary Road that was collected from 2008 through 2010 for the Agassiz National Wildlife Refuge Water Quality Study. Work began on an "Evaluation of Existing Data" report for the Thief River watershed. That report will include an assessment of water quality conditions within each subwatershed (HUC10) using existing data. An inventory of existing data was also completed and summarized.

Task 2: Water Quality Sampling

The District will make sure that all the data necessary for the completion of this project is completed by planning and managing the Thief River SWAG sampling and funding additional data collection with WRAP funds.

In 2011, the District was awarded SWAG funds to conduct intensive sampling at nine sites within the Thief River watershed in the years 2011 and 2012. Sample analysis for stressor/pollutant identification was piggy-backed onto samples collected for the Thief River SWAG monitoring.

Task 3: Continuous Water Quality Monitoring

Continuous water quality monitoring will be used to review and verify assessments of dissolved oxygen and turbidity during open-water months.

In 2011, the District deployed Eureka Manta water quality loggers at 5 sites in the Thief River watershed.

- Thief River at the Hillyer Bridge (Site #760).
- Thief River at County Road 7 (Site #40)
- Thief River at the road crossing at the North boundary of Agassiz NWR (Site #140)
- Branch 200 of Ditch 11 (Site #6)
- Marshall County Ditch 20 (Site #41)

The Agassiz National Wildlife Refuge United States Fish and Wildlife Service office loaned 4 Eureka Mantas and 2 Eureka Manta 2 sondes to the District for use during this project. With their loan there is enough equipment for there to be two deployable sondes for each continuous monitoring site. Approximately once every two weeks during the summer, freshly cleaned and calibrated Eureka Manta multi-parameter logging sondes were swapped for the ones that had been deployed at the 5 continuous water quality monitoring sites in the Thief River watershed. After the completion of the 2011 monitoring, the District removed Manta deployment pipes and posts from four of the continuous monitoring sites (sites 40 – Thief River, 6 – Ditch 200, 140 – Thief River, and 41 – CD 20). These pipes were then installed at four new sites in preparation for next year's monitoring (sites X4 - Moose River, 757 – Mud River, Branch A of JD21, and JD30).

Task 4: Biological Data Collection and Analysis

The MPCA biological monitoring crew successfully completed their fish and macroinvertebrate sampling effort in September of 2011. MPCA staff will use the biological data and SWAG sampling data to produce a comprehensive watershed assessment report for the Thief River.

Task 5: Stage and Flow Monitoring

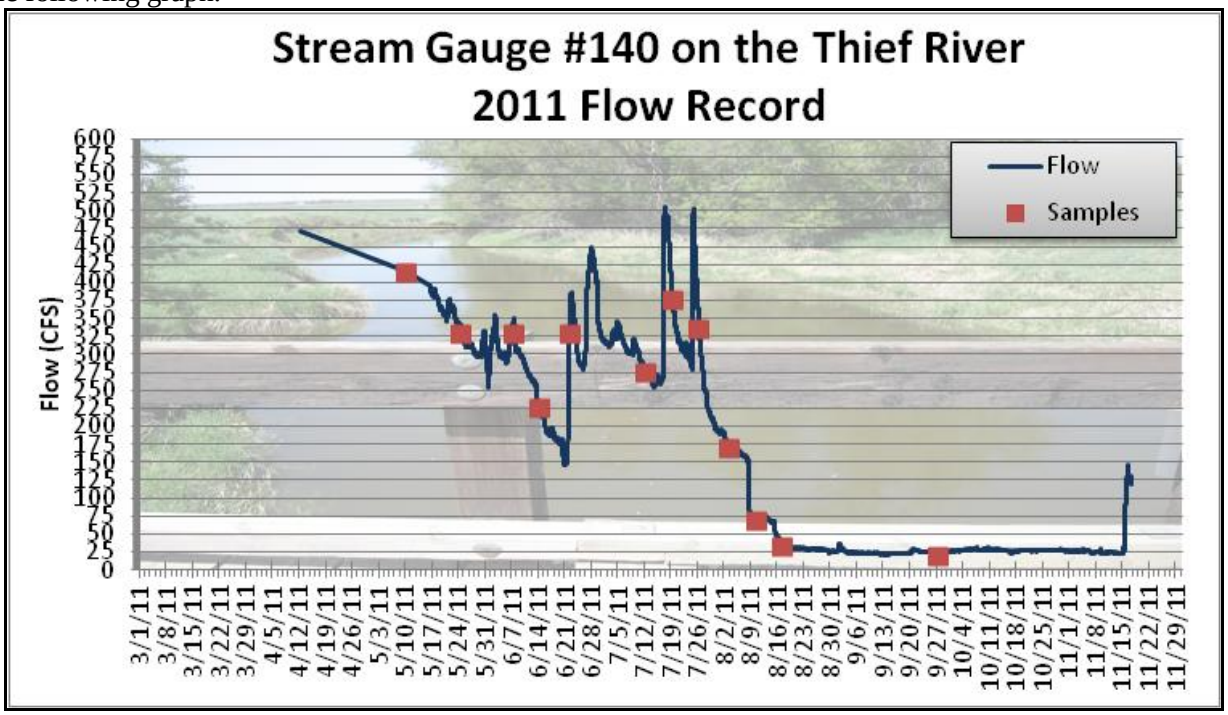
Having a flow record is critical for determining total maximum daily loads. The District, USGS, and MNDNR are monitoring stage and flow throughout the Thief River Watershed. In 2011, the District staff conducted flow measurements at the stage monitoring sites. Two new HOBO water level loggers were purchased in order to meet the needs of this project.

HOBO Water Level Loggers were deployed at:

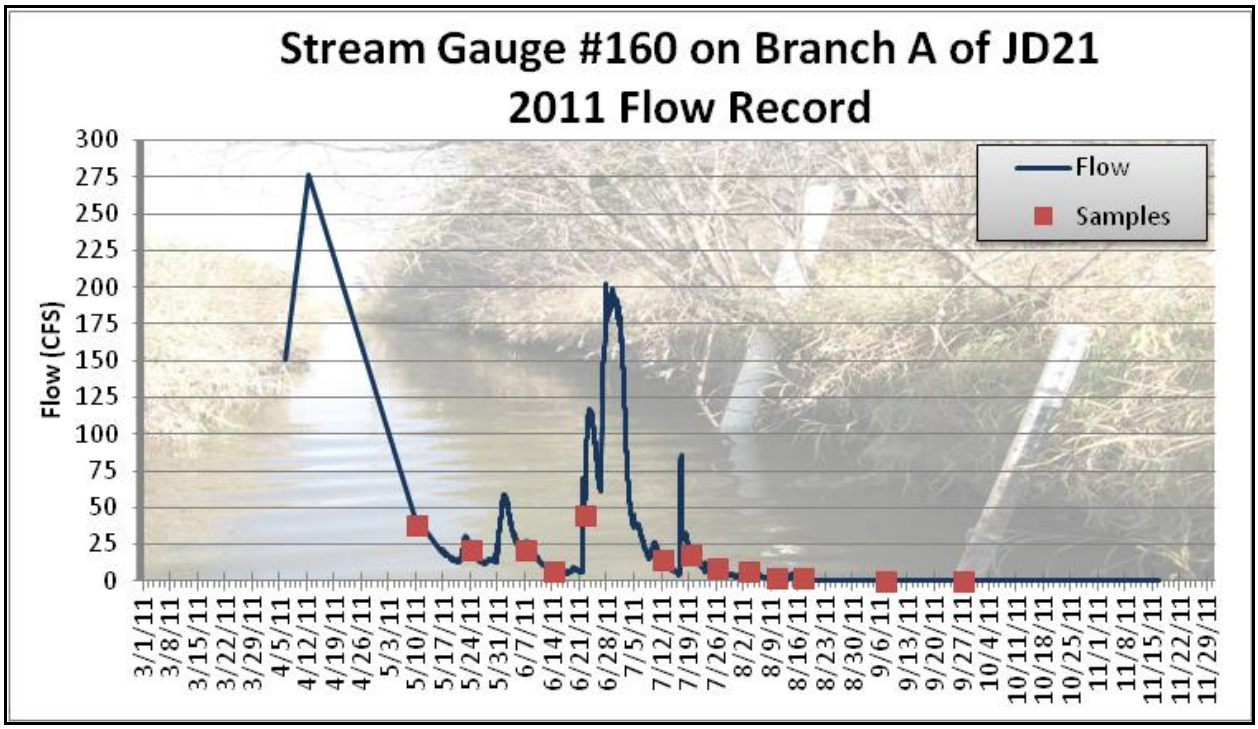
- The RLWD office (Thief River Barometric Pressure)
- JD30
- CD20 at stream gauging site #41
- Branch 200 of JD 11
- Mud River at Hwy. 89
- Thief River at the northern boundary of Agassiz National Wildlife Refuge
- Branch A of JD21
- Moose River at Hwy. 54

A MPCA Hydrologist/Limnologist installed an ultrasonic stream gage at the CR7 crossing of the Thief River (RLWD stream gage number 40). In May, he replaced and reprogrammed the CR10 data logger that will be recording measurements made by the sensor. The MPCA provided the District with a portable storage module so that staff can download data from the gauge once every 2-3 weeks.

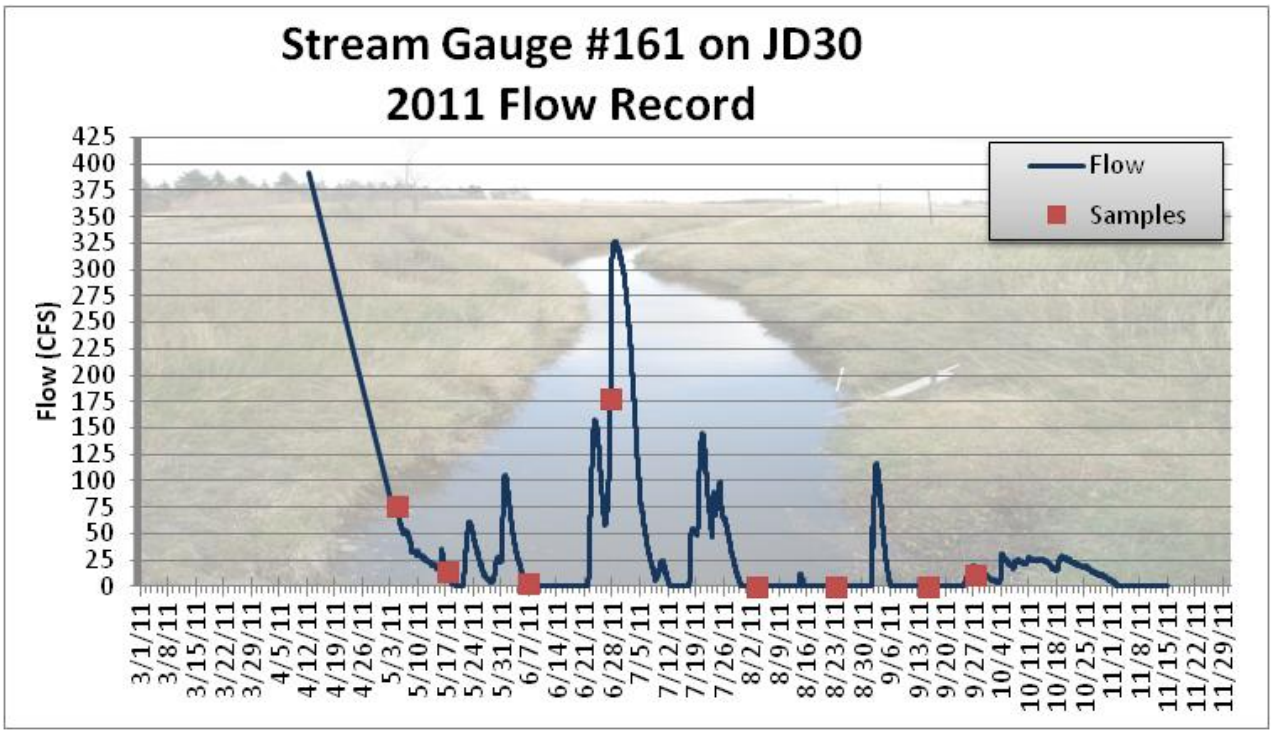
All of the Thief River watershed's HOBO water level loggers were retrieved on November 16th and 17th before they could get frozen into the ice. Data was downloaded from the HOBOs and processed/corrected using data from a barometric pressure logger that was deployed at the District office, and converted into Excel files. The 2008- 2010 (USGS) and 2011 (RLWD) flow records for site #140 on the Thief River (Agassiz North Boundary Road, S004-055) were compiled an plotted. The 2011 flow record is shown in the following graph.



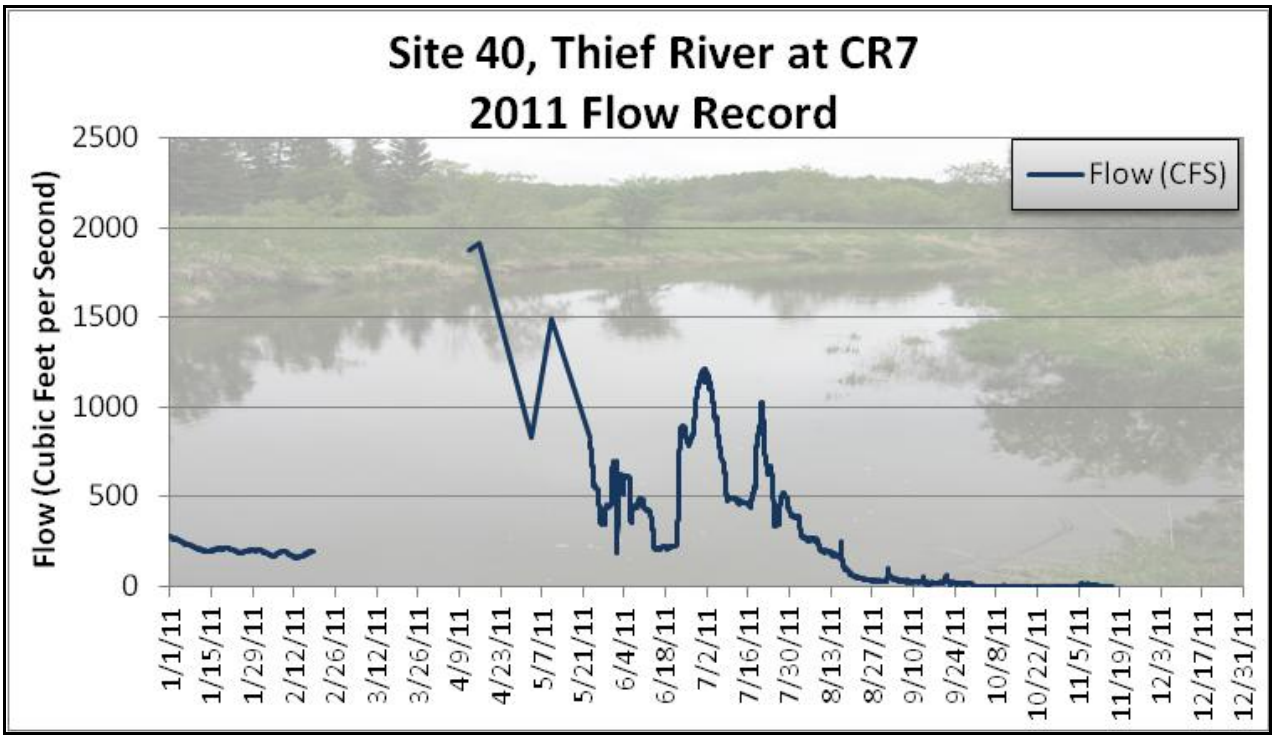
The 2010 and 2011 flow records were compiled and plotted for site #160 on Branch A of Judicial Ditch 21 at County Road 48 (S006-540). The 2011 data is shown in the following graph.



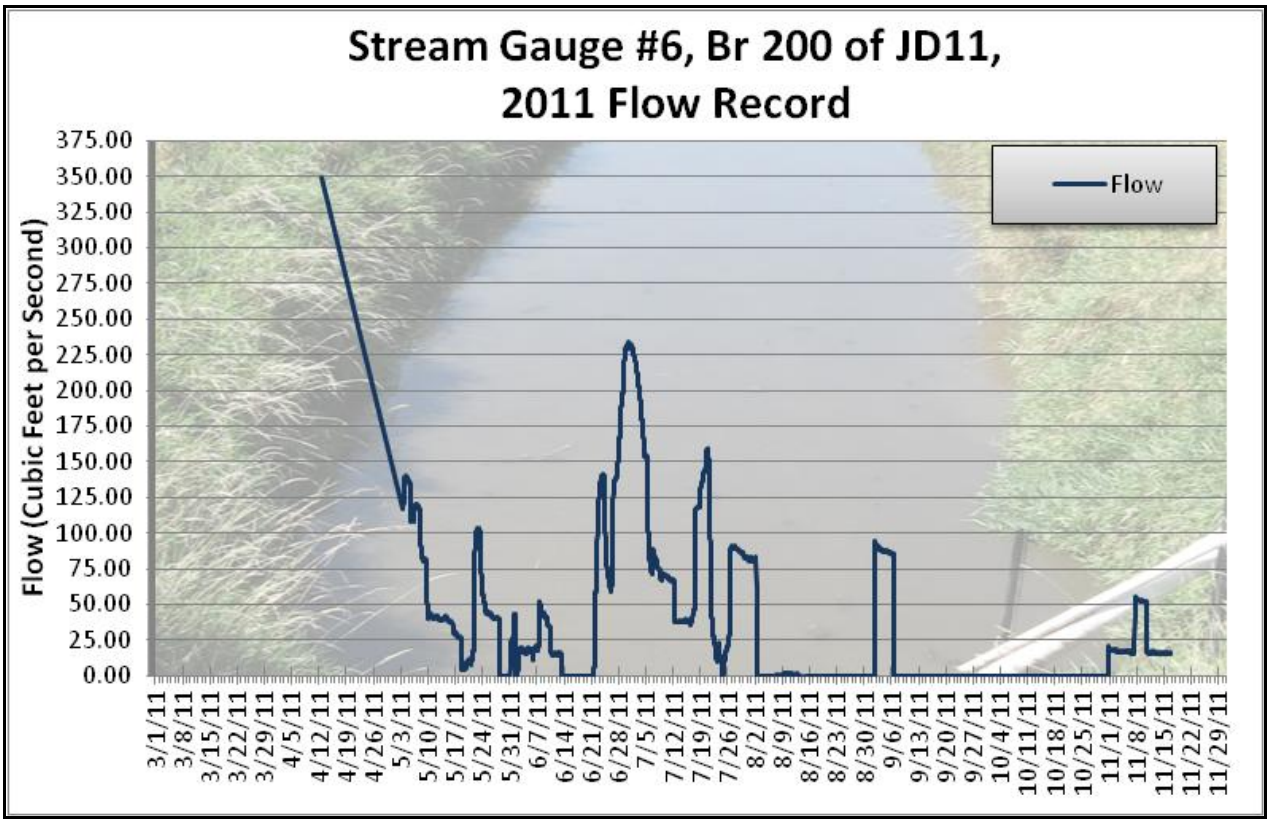
2010 and 2011 flow records were compiled and plotted for site #161 on Judicial Ditch 30 (S004-966). The 2011 data is shown in the following graph.



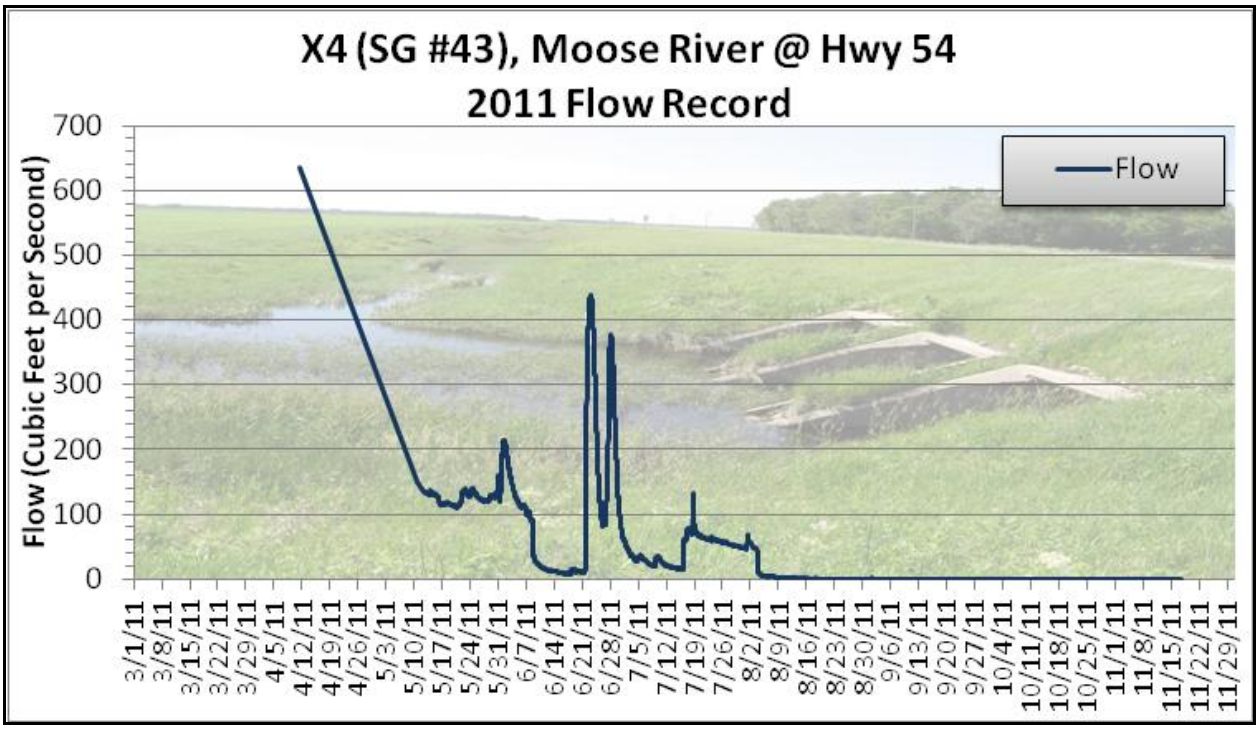
Data was retrieved from the storage module that was used to download data from the CR10 data logger at the Stream Gage #40 site (S002-088) on the Thief River at the County Road 7 crossing. The data logger recorded stage measurements from the ultrasonic gage that was mounted on the bridge. A HOBO water level logger was trapped under the ice in the 2010-11 Winter and actually continued to collect data until it ran out of memory in February of 2011. Here is the completed 2011 flow record for that site:



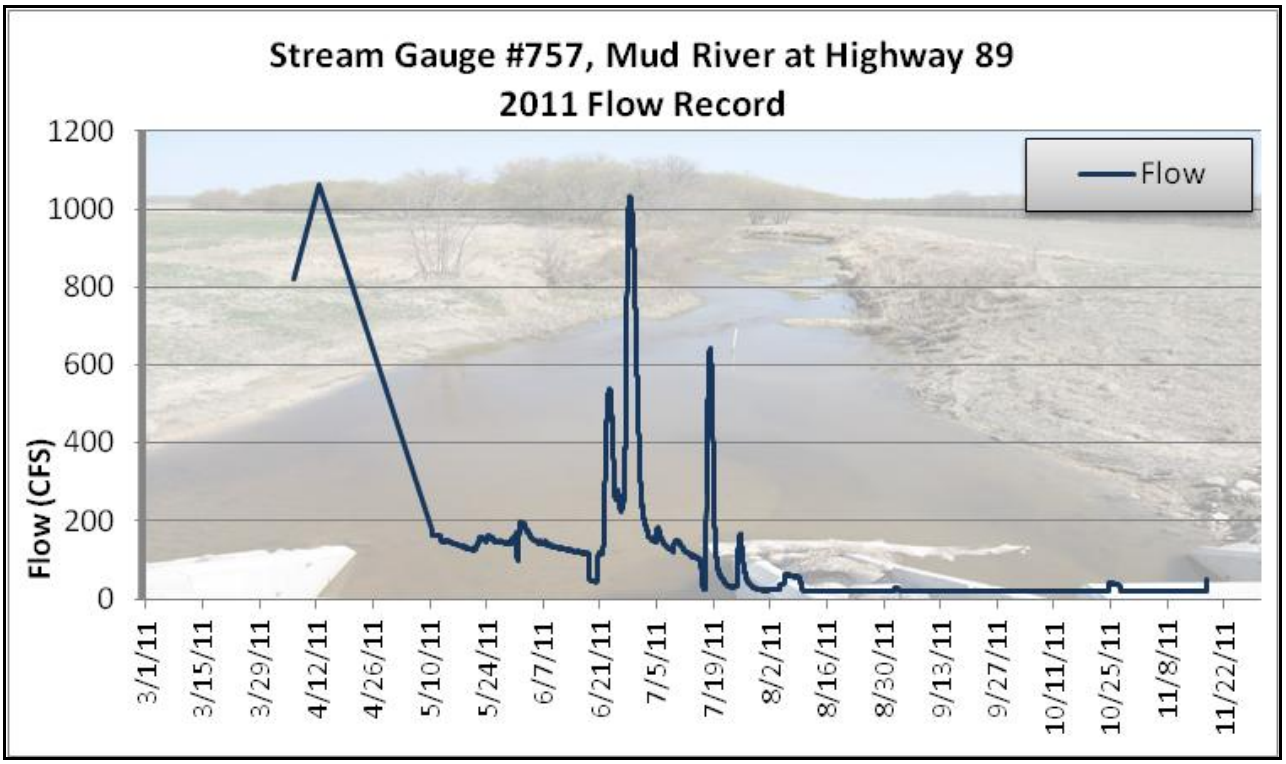
2010 and 2011 flow records were compiled and plotted for Stream Gage #6 on Branch 200 of JD11 (S004-493). The 2011 data is shown in the following graph.



2010 and 2011 flow records were compiled and plotted for Stream Gage #43 (also called X4and S004-211) and on the Moose River at Hwy 54 of Judicial Ditch 11. The 2011 data is shown in the following graph.



The 2011 flow record was compiled and plotted for site #757 on the Mud River (Hwy. 89 crossing, S002-078).



Task 6: Stream Channel Stability Assessment

Erosion and sedimentation are significant problems within the Thief River watershed. Truly understanding these problems will require an understanding of how these processes are being affected by stream channel morphology within the watershed.

In 2011, a reconnaissance via kayak of the CSAH 12 to 140th Ave NE reach of the Thief River was completed by staff from the District and DNR. Erosion sites were GPS'd and photographed. Bank Erosion Hazard Index (BEHI) information was recorded for erosion sites along the way.



Geomorphology work was completed at:

- Geomorph 1: Thief River, between Thief Lake and 410th St.
    - There are lots of young-of-the-year northern pike in the upper reach of the Thief River. We would, no doubt, see larger fish up there if this reach was connected to the lower reach without obstructions to fish passage.
- Geomorph 2: Thief River, between 410th St. and 400th St. NE
- Geomorph 3: Thief River downstream of CSAH 6
- Geomorph 4: Mud River near the St. Petri Lutheran Church, west of Grygla
- Geomorph 5: Mud River, reference reach downstream of 390th Ave NE
- Geomorph 6: Mud River, upstream of Grygla
- Geomorph 7: Thief River 1 mile south of the CR7 crossing near Agassiz NWR
- Geomorph 8: Marshall County Ditch 20, downstream end
    - During pebble counts, we found chunks of coal on the streambed that were spilled there when the ditches were dredged with steam powered floating dredges in the early 1900s. Larger chunks can be found in the Thief River.
- Geomorph 9: Marshall County Ditch 20, relatively stable reach
- Geomorph 10: Marshall County Ditch 20, upper unstable reach
- Geomorph 12: Moose River, along the Moose River Road
- Geomorph 14: on the Thief River upstream of the "Hillyer Bridge" crossing north of Thief River Falls.
- Geomorph 15: Upstream of the northern boundary of Agassiz NWR

Each geomorphology site visit involved a reconnaissance of the reach, pool pebble count, riffle pebble count longitudinal pebble count, surveyed longitudinal profile, surveyed cross section profiles for the riffle and pool, establishment of a bank study site, bank erosion hazard index (BEHI) assessment at the bank study site, vegetation assessment, and monumenting of the cross sections. DNR staff plan to have a summary of the results completed in April 2012.




Task 7: Stressor Identification

In order to recommend effective solutions for solving water quality problems, it is necessary to collect evidence that a particular stressor is affecting water quality. This task will identify those stressors. For example, the pollutant that is having the greatest impact upon dissolved oxygen can be difficult to identify. So, we will need to simultaneously collect sampling data and continuous dissolved oxygen data (true daily minimums and fluctuation) in order to find a correlation between dissolved oxygen and one of the pollutants. Longitudinal monitoring and sampling will be used to track down the sources of pollutants like E. coli. Windshield surveys of the watershed can be used to find erosion problems that are contributing to high turbidity. The District will work with stakeholders to identify specific locations for the implementation of best management practices that will address impairments.

Branch A of JD21 was inspected for erosion problems that would have caused the high turbidity readings that were recorded there on June 7th, 2011. There is a large gully in a field that was not far from the monitoring site. Incidentally, there was another large gully in a field on the east side of CR127 near the middle of Section 22 of Moose River Township.

Task 8: BASINS Model Development

The MPCA has funded ($100,000) the development of a Hydrologic Simulation Program Fortran (HSPF) model of the Thief River Watershed that will coincide with the WRAP project. A Soil and Water Assessment Tool (SWAT model) has already been completed for the Thief River watershed. The SWAT model is good at predicting what is coming off of the landscape. The HSPF model is better at simulating in-channel processes. The HSPF model is also more useful in the development of dissolved oxygen TMDLs. Houston Engineering, Inc. was awarded the contract for this modeling and began work in the Fall of 2011. Completion of Phase I of the HSPF modeling is scheduled for June 2012. The rest of the model should be completed by the end of 2012. Houston Engineering will use flow and water quality data from the USGS and the District to calibrate the model.

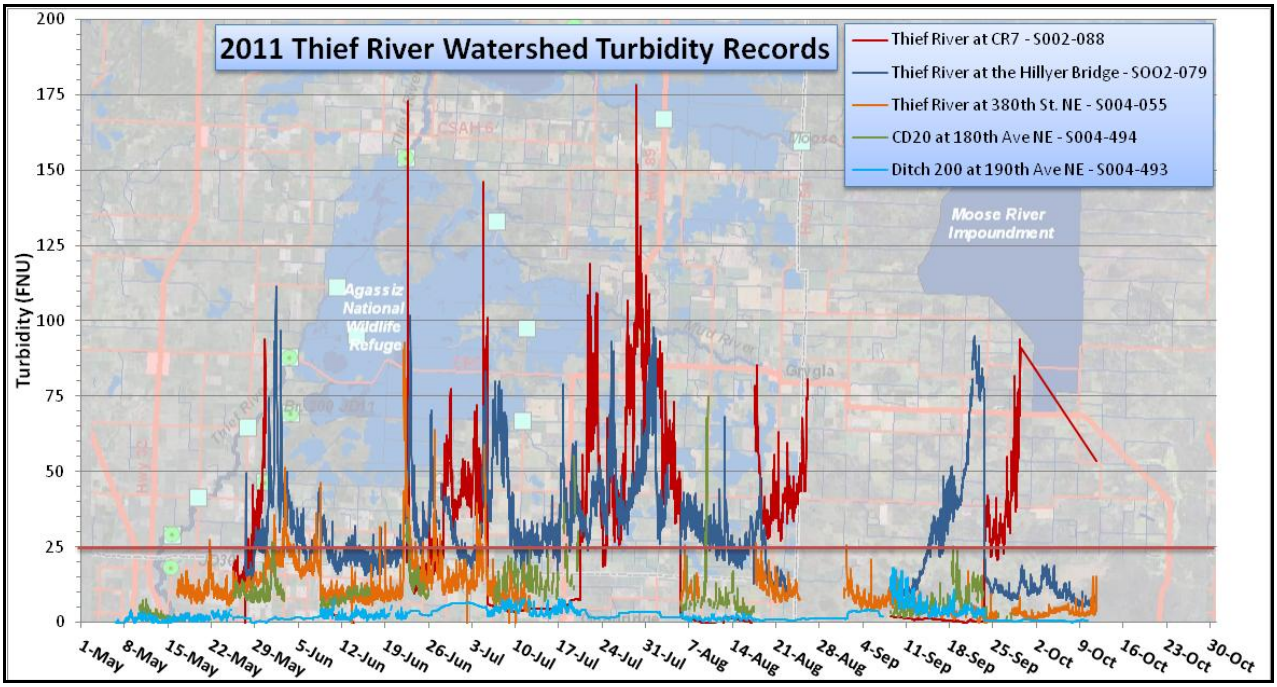
Task 9: Monitoring Data Entry

2011 data from this project was entered into the District water quality database and submitted it to the MPCA for entry into the State's EQuIS database.

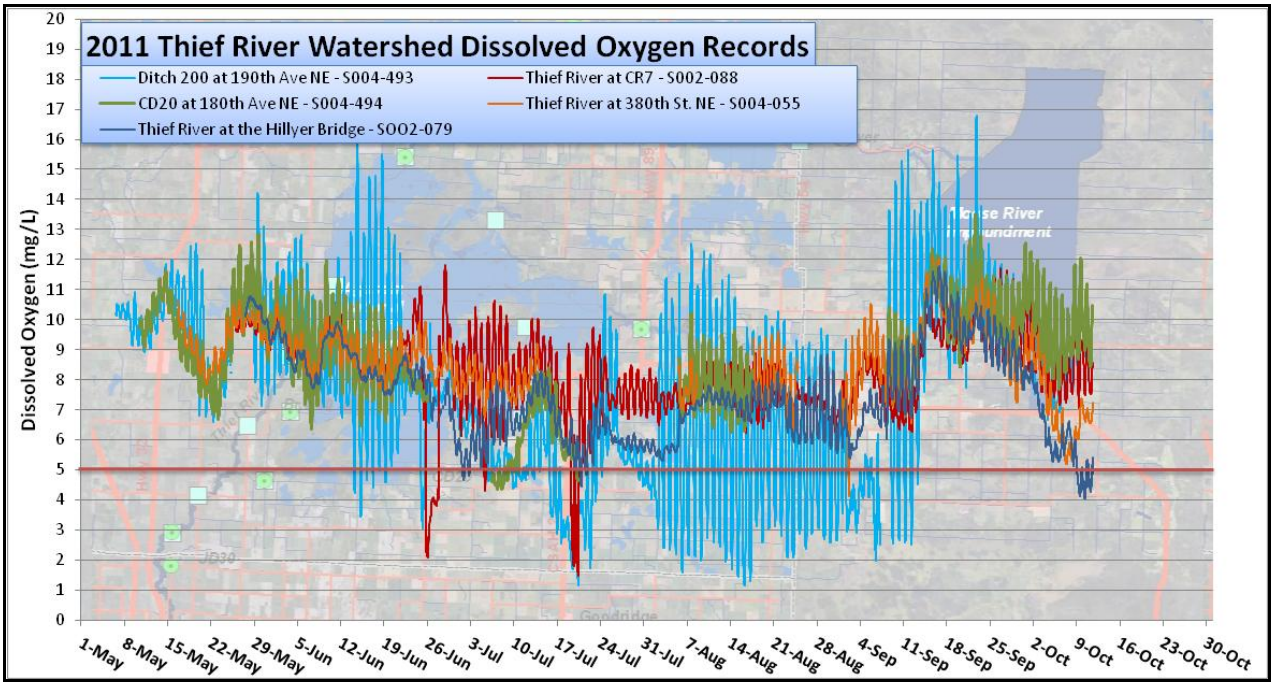
Task 10: Monitoring Data Analysis

Pre/post cleaning and pre/post calibration data for the Thief River Eureka Manta multi-parameter sondes was entered into spreadsheets. This data was used to calculate fouling and calibration drift for each deployment. The data from each of the five 2011 Thief River continuous water quality monitoring sites was compiled using Aquarius software. Turbidity, dissolved oxygen, and pH records from the Thief River watershed continuous monitoring stations were corrected, where necessary, using fouling drift and calibration drift data. The drift values were used to apply a linear correction to the data using Aquarius software.

Turbidity levels became quite high at times on the lower reach of the Thief River (below Agassiz NWR). Because the turbidity probes are calibrated in 10 NTU standard, they are accurate at levels below the 25 NTU water quality standard, but seem to get more exaggerated as turbidity levels increase, particularly when it surpasses 50 NTU (approximately), as shown on the following chart.



Dissolved oxygen levels dropped below the 5 mg/l standard consistently in the late summer at the Branch 200 of JD11 monitoring site. Dissolved oxygen also occasionally dropped below the standard on the lower reach of the Thief River.



Task 11: Civic Engagement

Public participation, education, outreach, and involvement will help assure supporters and participants that this watershed study will result in positive change in the Thief River watershed. The civic engagement process will provide a method for identifying public concerns and values, developing consensus among stakeholders, and establish an open and inclusive process that should produce efficient and effective solutions. The District has hired RMB Environmental laboratories as a subcontractor that will handle the majority of the civic engagement work. RMB Environmental Laboratories has worked on researching collaborations, identifying social networks and contacts, reviewing of the Thief River Demographic Report, and planning a project kick-off meeting

Task 12: Identification of Sources and Solutions

This task will involve some on-the-ground reconnaissance of the watershed, but will also include a "terrain analysis" GIS-based analysis of the watershed that will identify critical areas with high potential for erosion. In 2011, District staff began working on the terrain analysis for portions of the Upper Thief River watershed. Hydro-correcting the LIDAR data will take up the majority of the time involved with completing this task. In the raw LIDAR data, roads look like dams, regardless of whether or not there is a culvert (the aerial data collection can't see through the roads). Most of the culverts and bridges can be identified and "burned" into the LIDAR data in the office. Some questions about whether or not a culvert exists can only be answered by going out into the field and looking for a culvert.

The work plan for the Thief River TMDL Study (Project 157B) includes a DEM surface analysis to rank points in the Thief River basin according to Stream Power Index. This process consists of analyzing a corrected surface in conjunction with existing soil and land cover attributes to determine the Stream Power Index, thus identifying areas of high velocity flow in which erosion is likely to occur. Such areas can then be considered for high-return mitigation measures.

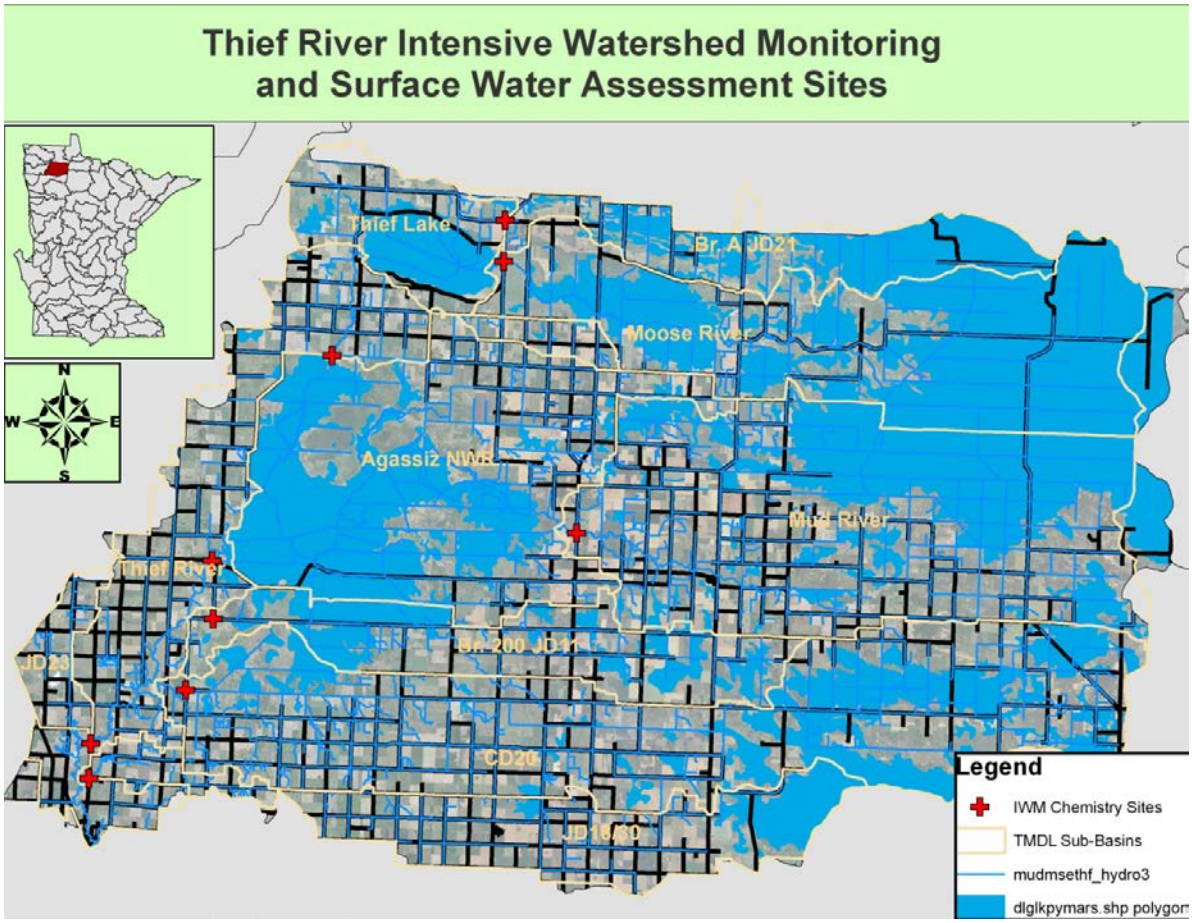
The workflow for this process was acquired from staff from Houston Engineering. District staff attended a workshop on the topic at the Fargo Houston office in June, 2011, with additional consultation in September, followed by developing a flow chart detailing the required steps.

While learning about the SPI analysis, District staff has learned that the majority of the work involves assembling the surface and inserting the hydrological corrections. The actual analysis requires a relatively small time investment and could be executed by either a Watershed staffer or a consultant. But a corrected surface would provide added utility for other uses such as wetland determination, drainage area delineation, and benefits assessment.

Task 13: Final Reports, Semi-Annual Reporting, and the TMDL Process.

Under this task, the District will regularly submit invoices and semi-annual progress reports to the MPCA. Most importantly, the District will be writing TMDL reports and protection plans for all the HUC10 sub-basins in the Thief River watershed. The District will follow through with the TMDL process after TMDL reports are submitted to the MPCA and EPA for comments. There are some reaches that aren't currently impaired; that doesn't mean we should ignore them and let them become impaired in the future. Protection plans will be used as a guide for implementing projects that will protect waters that aren't currently impaired.

Thief River Watershed Assessment Monitoring – Surface Water Assessment Grant (SWAG)

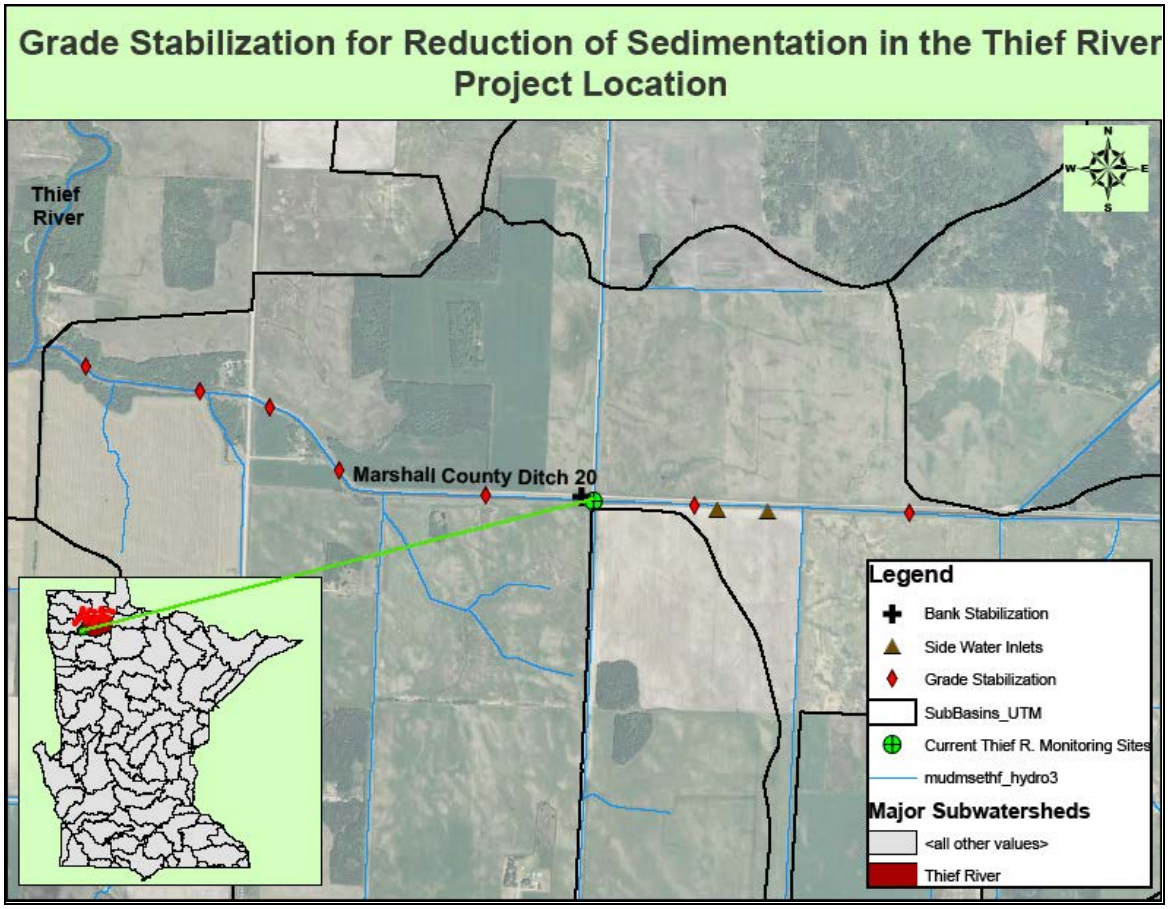


First funded in 2006 by the Minnesota Legislature, Surface Water Assessment Grants (SWAG) provided local organizations and citizen volunteers with funds to gauge the health of lakes and streams. The MPCA uses the data collected to see if water bodies meet state standards and provide designated uses such as swimming and fishing. Assessing the water quality of lakes and stream reaches is usually the first step in protecting or restoring surface waters. The District was awarded a Surface Water Assessment Grant by the Minnesota Pollution Control Agency for sampling in the Thief River watershed. District staff are managing the project and Pennington and Marshall County Water staff are collecting the samples. Nine sites will be monitored in 2011 and 2012. Additional nutrient sampling (including chlorophyll-a and pheophytin) was added to the sampling plan for one site (S002-079) on the Thief River.

In early 2011, a project work plan and a Quality Assurance Project Plan were composed and submitted to the MPCA. The contract was approved at the February 24, 2011 District Board meeting and the project officially began on March 8th. The District managed the project and Pennington County and Marshall County staff collected the samples. The District funded the continuation of this monitoring project during the July 2011 State shutdown. The District compiled and entered data from Marshall County, Pennington County, and RMB Labs and submitted it to the MPCA for entry into the State's EQuIS database.

Grade Stabilization for the Reduction of Sedimentation in the Thief River (RLWD Project 14D)

Marshall County Ditch 20 (CD20) is a drainage system that flows into the Thief River seven and a half miles northeast of Thief River Falls. Channel incision in CD20 has caused sedimentation problems in the Thief River and has exacerbated gully formation in fields along the ditch. The District, Marshall County Highway Engineer, Marshall County Soil and Water Conservation District, Marshall County Ditch Authority, and the Red River Valley Conservation Service Area Engineer are collaborating to implement grade stabilization and erosion control strategies along the lower two and a half miles of CD20. A series of rock riffle grade stabilization structures will be used to reduce the head cutting and sloughing along CD20. Side water inlets will be used to halt the gully erosion on field ditches along CD20. The streambank of CD20 will also be stabilized at a location where a confluence with another ditch is causing streambank erosion.



A work plan was completed and approved for this project in early 2011. Staff from the Marshall County SWCD spoke with landowners along the south side of CD20 within the project area. The combined efforts of the Marshall County SWCD, the District, and the project's engineers succeeded in getting nearly all of the landowners to sign temporary access easements to allow the surveying and equipment access needed to complete the project. Marshall County staff chose the locations where grade stabilization structures will be installed along County Ditch 20. The grade of the ditch bottom currently gets steeper as it gets closer to the Thief River (SD83). So, the structures will be placed closer together near the lower end of the ditch.

When all the grade stabilization structures are in place, the grade of the ditch should be about three percent, which is consistent with the original designed grade. Two side water inlets (SWI) and some bank stabilization are included in the project plans. There will also be an opportunity to add another side water inlet installation to the CD20 grade stabilization project. There should be excess money in the project administration budget that can be used to design and construct the additional SWI.

Red Lake River Watershed Assessment Project

The MPCA approved the allocation of $150,000 for Phase I of a watershed-based TMDL for the Red Lake River Watershed that officially began on August 19, 2011. This is a watershed-based TMDL, assessment, and civil engagement project similar to the one planned for the Thief River watershed. The components of the Red Lake River Watershed Assessment Project are similar to those of the Thief River Watershed Assessment Project. Here are some updates for the tasks that we worked on in 2011.

Task 2: Water Quality Sampling

One of the first tasks addressed for this project was the selection of monitoring sites and planning the intensive watershed monitoring effort. Load Study Surface Water Assessment Grant sites were also discussed with MPCA staff for the Red Lake River and Thief River watersheds. Potential Intensive Watershed Monitoring (IWM) sites were identified, discussed, and visited by the District Water Quality Coordinator and MPCA IWM Project Leader for the Red Lake River and Grand Marais Creek watersheds. A cooperative monitoring effort was organized for the 2012 Surface Water Assessment Grant that includes the Marshall County Water Planner, Marshall County SWCD, International Water Institute, Red Lake County SWCD, and the Pennington County SWCD. The Red Lake DNR will also help with any future monitoring that may be needed within the Red Lake Reservation. The Red Lake River and Grand Marais Creek Surface Water Assessment Grant project was awarded $86,514 in funding.

Task 3: Continuous Water Quality Monitoring

Continuous dissolved oxygen data will be collected at six sites in the Red Lake River watershed in 2012. Five different sites will be monitored in 2013. The Black River site will serve as a "control" because it is an easily accessible site and there will be a lot of sampling data collected there over the next two years (5 monitoring projects). The monitoring at all of these sites will coincide with the SWAG sampling so that we can make an association between low dissolved oxygen concentrations and the concentrations of a pollutant. To accomplish this work efficiently, two dissolved oxygen loggers are used for each site so that a dirty deployed sonde can be replaced by a logger that has been cleaned and calibrated in the District lab. The Distrct already had enough equipment to monitor five of the sites. Two additional TROLL 9500 units (pictured) were purchased with project funds to monitor a sixth site each year. Deployment pipes have been purchased and some have already been installed so that they are ready to go in the spring of 2012.

Task 5: Stage and Flow Monitoring

In addition to water quality data, flow data is needed in order to calculate loads of pollutants. There are five permanent gauging stations along the main channel of the Red Lake River that will provide excellent flow records for use in load calculation and model calibration. The smaller tributaries within the Red Lake River major watershed (excluding the Clearwater River and Thief River) are lacking flow data. Flow data will be collected in order to accurately calculate loads and characterize flows in those streams and ditches. A SWAG monitoring site along the Upper Red Lake River will also need flow data. HOBO Water Level Loggers will be deployed at temporary stage monitoring stations at total of 11 sites within the Red Lake River watershed. Two of these deployments will be more temporary than the others. The Minnesota Department of Natural Resources will

be installing permanent gauges at the Kripple Creek and Black River sites as part of an event-based monitoring program. The District will collect stage data at those sites in the spring of 2012 until the DNR equipment is installed. Stage monitoring will continue at the 9 other sites throughout this project and possibly longer if there is a need for long-term project-effectiveness monitoring. Some of the deployment pipes have already been installed so that they are ready to capture data during the spring runoff in 2012. Loggers will be deployed at:

1. Black River at CR18 west of Red Lake Falls(temporary)
2. Kripple Creek at 180th Ave SW near Gentilly (temporary)
3. Gentilly Creek at 180th Ave SW near Gentilly
4. Heartsville Coulee at 210th St. SW near Grand Forks
5. Burnham Creek at 320th Ave SW
6. Polk County Ditch 1 at CR61 near Crookston
7. Judicial Ditch 60 at CR11between Gentilly and Crookston
8. Cyr Creek at CR110 southwest of Red Lake Falls
9. Brown's Creek at CSAH9 northwest of Red Lake Falls
10. Pennington County Ditch 96 at Highway 32 near St. Hilaire
11. Red Lake River at CSAH27 near the western boundary of the Red Lake Indian Reservation

Task 10: Civic Engagement

The Red Lake River civic engagement contract with RMB Environmental Laboratories was signed on September 30, 2011. RMB Labs began researching potential collaborations in order to assess the community's capacity for watershed planning. An initial list of potential stakeholders that will be invited to meetings was assembled. Staff at RMB Labs also began researching potential collaborations in order to assess the community's capacity for watershed planning.

Task 11: Identification of Sources and Solutions

The District provided a Green Corps (University of Minnesota, Crookston) employee with a HACH 2100P portable turbidimeter and a sampling device. He monitored water quality at the outfalls of stormwater drainage systems in Crookston. This data provided insight into the turbidity levels in stormwater runoff from different parts of the city. Data from these stormwater outlets can be compared to each other, state water quality standards, and turbidity levels in the Red Lake River. One interesting bit of information from the study was the discovery that the city's snow dumping site was located next to the river. So, all of the dirt that was scraped up with the snow would run directly into the river as the snow melted. Also, stormwater drainage from the Crookston industrial park had consistently high turbidity levels, up to 447 NTRU. This data indicates that stormwater from communities along the Red Lake River is contributing to the turbidity impairment in the Red Lake River.

Grant funds may be pursued in order to a complete a project that involves storm water modeling, design work, and education. The cities of Crookston and Thief River Falls have populations that are high enough to potentially qualify as designated MS4 (Municipal Separate Storm Sewer System) communities in the future because the population threshold is reduced to 5000 people when there is a completed TMDL for the water body a city drains into. Cities will want a plan for minimizing stormwater runoff pollution that can be accomplished cost-effectively. Ideally, city staff (especially planners) will be educated on stormwater management strategies that can be incorporated into new developments from the beginning. That should make stormwater management much easier than if it has to be retrofitted into a developed area.

There has been a lot of head cutting and failure of slopes downstream of the CSAH 11 crossing of JD60, east of Crookston. The downstream end of the culvert is significantly perched. This is a potential grade stabilization project. The landowner at this location is in favor of a project there.

Rain Garden at the RLWD Office

The District Board of Managers approved the creation of a rain garden at the District office. The Board of Managers accepted the quote from Breiland Landscaping. The garden features a stepping stone path down the middle and the clusters of plants are labeled for additional educational value. The garden was completed in June. Downspouts were modified so that they flow into the garden. Rock was placed at the ends of the spouts. The soil around our office is mostly clay, so Breiland Landscaping started the project by removing a layer of the clay soil and replacing it with a layer of organic soil so that the garden can retain more water. This will not only function as a rain garden, but will also have the beauty of a butterfly garden. We chose perennial plants such as liatrus and coneflower that are not only "native," but also great looking. Feel free to visit our office, walk down the stepping stone path, and bring home some ideas for your own gardens.

Long-Term Monitoring

The District has an ongoing monitoring program that began in the early 1980's and has grown to include 48 sites throughout the watershed, as of 2011. Field measurements of dissolved oxygen, temperature, turbidity, specific conductivity, pH, and stage are collected during site visits. Four rounds of samples are also collected and analyzed for total phosphorus, orthopohosphorus, total suspended solids, total dissolved solids, total Kjeldahl nitrogen, ammonia nitrogen, nitrates + nitrites, and E. coli. For the past two years, biochemical oxygen demand (BOD) analysis has been added for the sites that are located on reaches that are currently impaired or may become impaired by low dissolved oxygen. The four 2011 rounds of sampling began in April, May, July, and September in 2011.

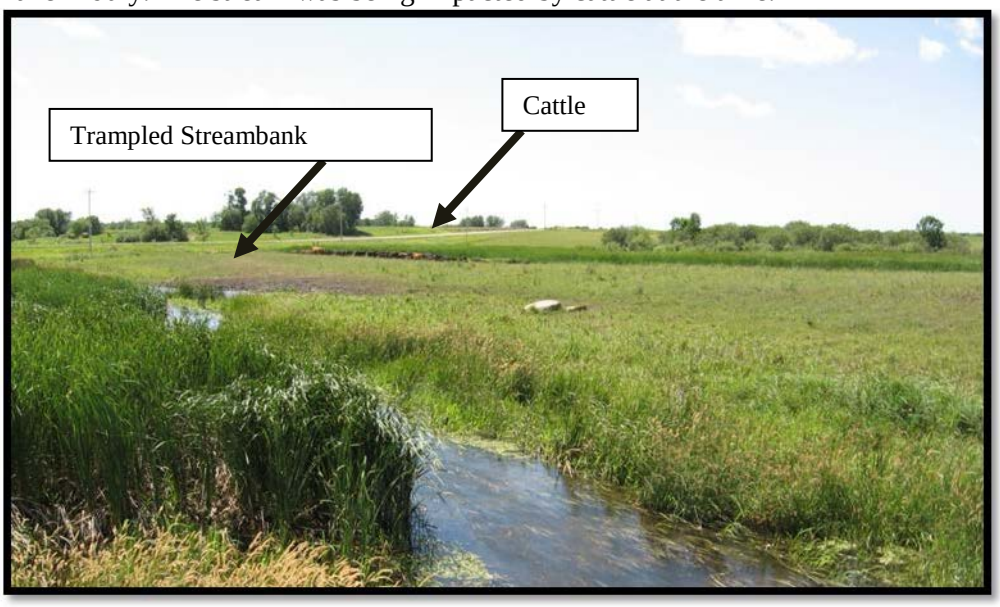
A new site on the Lost River upstream of Gonvick was monitored this year. Historically, samples have been collected near the outlet of Pine Lake. This site rarely had water quality problems because this was essentially lake water that was being tested. The montoring sites were originally selected to bracket Pine Lake. Meanwhile, the cumulative impact of cattle operations between Pine Lake and Gonvick was not being assessed. So, the sampling location was moved from the gravel road near the Pine Lake outlet to the CSAH 8 crossing near Gonvick.

In late April, a plume of sediment was entering the Mud River at Grygla from Branch 95 of JD11. The plume was traced back to one of the lower grade stabilization structures where the ditch bank was actively eroding on the downstream side of the structure. The water in the ditch was fairly clear upstream of that point.

In May, large rainfall events led to high water levels and flows in rivers throughout the watershed. Around four inches of rain in the Oklee caused the Lost River to flood. The Clearwater River at Plummer also overtopped its banks and some township roads were under water north of Erskine.

In July, there was a plume of sediment-laden water entering the Moose River from the Hwy 54 ditch (Branch 41 of JD21).

A high concentration of E. coli bacteria was found at the LR10 site on the Lost River, upstream of Pine Lake in July. The stream was being impacted by cattle at the time.



The following photo from early August 2011 shows a “plume” of water entering Maple Lake. The water coming in was tea-stained, but actually much cleaner than the water currently in the algae-laden waters of the lake.

Clearwater River Dissolved Oxygen and Fecal Coliform TMDL Study

The MPCA was planning to begin the public review period for the Silver Creek E. coli TMDL in 2012. The Poplar River dissolved oxygen TMDL will most likely be put on hold until the Clearwater River Major Watershed Restoration and Protection Project, which is scheduled to start in 2014. A "success story" was written for the MPCA about the Lost River fecal coliform impairment that was taken off of the 303(d) List of Impaired Waters (see the end of this report). Some updates have been added to the following version of the "success story" article to make sure that the data accurately portrays current conditions.

Lost River Success Story

Water quality within a reach of the Lost River in Northern MN improved enough to be safe for Aquatic Recreation

The Lost River, a tributary of the Clearwater River in northwestern Minnesota, was found to be impaired by fecal coliform when samples were collected for a water quality study in the early 1990s. After the construction of a wastewater treatment facility and a couple of decades of best management practice (BMP) installation, the river now meets the aquatic recreation water quality standard for E. coli bacteria. Since the Oklee wastewater treatment facility has been operational, individual samples have not exceeded the 1260 CFU individual sample maximum standard and the monthly geometric means for the reach as a whole all fall below the 126 CFU/100 ml geometric-mean-based standard.

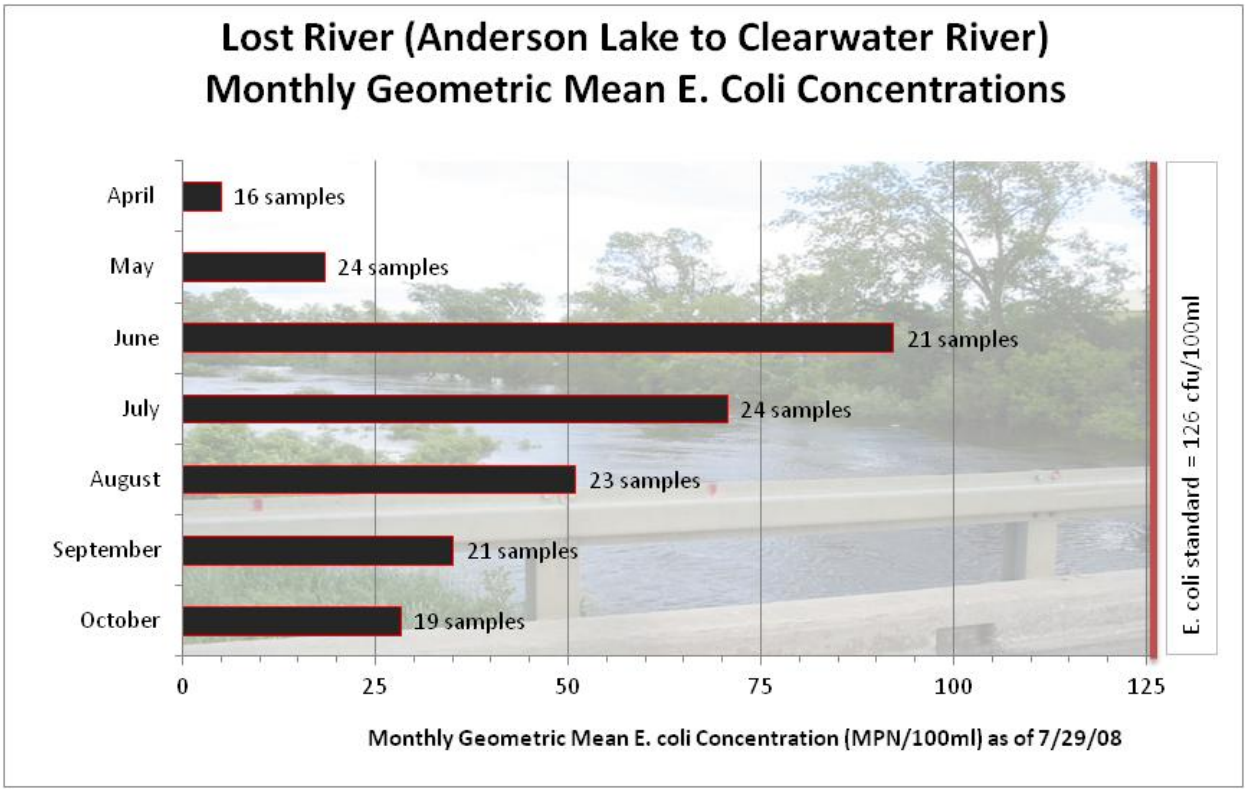
Lost River at CSAH 7, north of the town of Gonvick.

The Lost River begins in Clearwater County, south of Pine Lake near the town of Gonvick. It then flows through a portion of Polk County and into Red Lake County where it is joined by the Hill River and flows into the Clearwater River shortly thereafter. The towns of Oklee and Brooks are also located near the Lost River. On a broad scale, the Lost River is located within the Red River of the North basin.

The reach of the Lost River that extends downstream from its confluence with Silver Creek at Anderson Lake to its confluence with the Hill River was originally listed as impaired by high fecal coliform levels and in the 303(d) List of Impaired Waters. The impairment was based on data that was collected in 1992 and 1993 for the Clearwater River Nonpoint Study. A drastic difference in fecal coliform levels before and after the construction of a wastewater treatment facility for the town of Oklee indicates that wastewater was the most significant source of the problem. Feedlots have also been identified near the river during windshield surveys of the watershed. Load duration curves show that more recent high concentrations occur during high flows. This indicates that feedlot runoff is probably the most significant source that is currently contributing to exceedances of the water quality standard.

A TMDL Study was conducted in 2007 – 2009 to verify the impairment, define current loads, estimate desired loads, and suggest strategies for attaining water quality goals. E. coli sampling was conducted on each end of the reach that yielded five samples per month at each of the two sites. The increased number of samples decreased the influence of occasional high bacteria concentrations. Applying Minnesota State water quality standards to the data collected from the most recent years (through 2008) showed that the Lost River no longer has an aquatic recreation impairment based on bacteria concentrations. The reach was officially delisted in December of 2009.

Water quality in the river isn't always perfect and high levels of E. coli still occasionally occur. Using E. coli data from 2002 – 2011 from only the Lost River crossing near the town of Oklee, the June geo-mean E. coli concentration is currently 141 MPN/100 ml. June geo-mean for the entire reach, when all sites are combined, is 92 MPN/100ml. Even before the 920.8 MPN/100ml concentration that was recorded in 2011, the Oklee site was too close to the 126 MPN/100ml standard for comfort (112 MPN/100 ml after 2008 sampling). So, there is still room for more improvement. The Clearwater River TMDL Stakeholders Group, the Minnesota Pollution Control Agency, and the District agreed that it was wise to proceed with the writing of a report that will be used to create a protection plan for this river.



The improvement in water quality in the Lost River is most likely the result of a combination of ongoing efforts by cities, landowners, local and state agencies. Upstream of the impaired reach, an intensive riparian buffer initiative was implemented by the Clearwater Soil and Water Conservation District (SWCD) in the Silver Creek watershed. The Clearwater County, Polk County, and Red Lake County SWCDs and NRCS staff continue to implement BMPs throughout the watershed. They regularly implement BMPs such as buffer/filter strips, residue management, grazing management, nutrient management, grade control structures, side water inlets, streambank protection, and grassed waterways using cost chare and incentive programs like CRP and EQIP. The MPCA regulates discharge from the Oklee wastewater treatment facility. This facility seems to have had a major impact on keeping harmful bacteria out of the Lost River. Extremely high fecal coliform levels were consistently recorded in samples collected during the summer of 1992 (1200 – 4100 col/100 ml in June and July samples) until the facility became operational in August of 1992.

The Clearwater River Nonpoint Project was funded by local agencies and a loan from the 319 program. The Phase I study portion of the project was completed by the District and HDR Engineering. The study was sponsored by the District and local SWCDs. The recent TMDL Study was completed in 2009 by the District under a $100,000 contract with the MPCA.

Public Education

District staff helped run stations at the Pennington County Outdoor Education Day (Minnow Races and "The Incredible Journey") and the Northwest Minnesota Water Festival days in Warren and Fertile (Watersheds and "Turbidity or not Turbidity"). Staff also judged at the Franklin Middle School 7th and 8th grade science fair in Thief River Falls. District staff wrote questions for the current event quiz for the 2011 Envirothon at Lake Bronson State Park. The current event topic was: Salt and Fresh Water Estuaries. Various presentations were given by District staff in 2011:

- Water quality monitoring presentation at the BWSR Academy conference that was held at Breezy Point Resort near Pequot Lakes on October 26, 2011.
- Presentation on the use of Standard Operating Procedures in the field at the Red River Basin Water Quality Monitoring Training Session
- Presentation on 2010 accomplishments to the District Overall Advisory Committee meeting.
- Presentation on the District Tile Drainage Study to the NCERA 217 Drainage Design and Management Practices to Improve Water Quality meeting.
- Presentation entitled "Watershed-Based Water Quality Concerns, Management, and TMDLs" during the Land Management Field School at the University of Minnesota, Crookston
- Presentation on "Local Experience with Watershed-Wide TMDLs." At the Watershed Based TMDL Workshop that was hosted by Houston Engineering in March of 2011. Workshop information and slides can be found at: http://www.houstoneng.com/archives/2411
- Presented an overview of the Thief River Watershed, its water quality problems, and potential solutions at a Minnesota State Technical Committee meeting (involving representatives from the NRCS, USFWS, etc.) at the Minnesota Valley National Wildlife Refuge Visitor Center
- Presented an overview of the Thief River Watershed, its water quality problems, and potential solutions at a "brown bag" seminar at the United States Fish and Wildlife Service State headquarters. Here is a direct link to the "Thief River Sediment, Sources, and Solutions" presentation: http://www.redlakewatershed.org/presentations/20110317TRSSS.ppt
- Presentation on Thief River problem areas at the February 2011 Thief River Multi-County Project Development Meeting at the District office

Challenger Elementary Field Trip

District public education activities have expanded to include participation in science education to include the 4th grade class at Challenger Elementary in Thief River Falls. Four field trips were organized by the science teacher and District staff to take the Challenger fourth graders to three sites on the Thief River. Sites were selected for relevance and safety. The field trips were conducted on October 5th and 6th in four groups. District staff gave presentations on erosion, general water quality, and watershed concepts. The students seemed particularly fascinated by the transparency tube and the Van Dorn water sampler. Each student kept a journal to record the transparency, dissolved oxygen, and pH of samples drawn from the Thief River. They also were instructed to record their personal observations of the river and surrounding areas, and to make map drawings. A similar set of field trips is planned for the spring of 2012 to allow students to investigate seasonal differences. The District provided staff and funded the transportation for this event.

Monthly water quality reports continue to be available on the District's website: http://www.redlakewatershed.org/monthwq.html

A Facebook page was created for the District. By "liking" the RLWD, people can stay updated with meeting announcements, progress of RLWD projects, events, and news. The Thief River kick-off meeting announcement was posted on the page. "Like" the Red Lake Watershed District on Facebook to stay up to date on the work that we are doing. "Like" us at: http://www.facebook.com/pages/Red-Lake-Watershed-District/266521753412008?sk=wall

River Watch

The River Watch program involved seven schools and 223 site visits. Fisher and Thief River Falls renewed their participation began regular water quality monitoring. Five schools participated in 2011 Spring Forum, and the Bagley group received 'Peoples' Choice' recognition for the quality of their display. Students and teachers attended breakout sessions that included stream morphology and communications technology for effective civic engagement.

The monitoring season began in April and ended with the Fisher group in late October. The new data was stored locally and uploaded to the River Watch data server in November. It was then posted to PCA's EQUIS database.

Summary of Beneficial Use Support

The Minnesota Pollution Control Agency has developed water quality standards for the assessment of water quality of the streams. *Only the MPCA can make an official determination of impairment status*. The data in this summary was analyzed for this report according to the pre-assessment criteria defined on page 15 in the MPCA 2012 TMDL Guidance Manual. Local data can be assessed at anytime to determine if there is an indication that a waterbody is not meeting the MPCA's water quality standards. However, this analysis is seen only as a preliminary indication of impairment status. Local data from the River Watch Program can be assessed regularly to keep track of current water quality conditions.

The following maps show the results of an assessment of recent River Watch Data.

Dissolved Oxygen

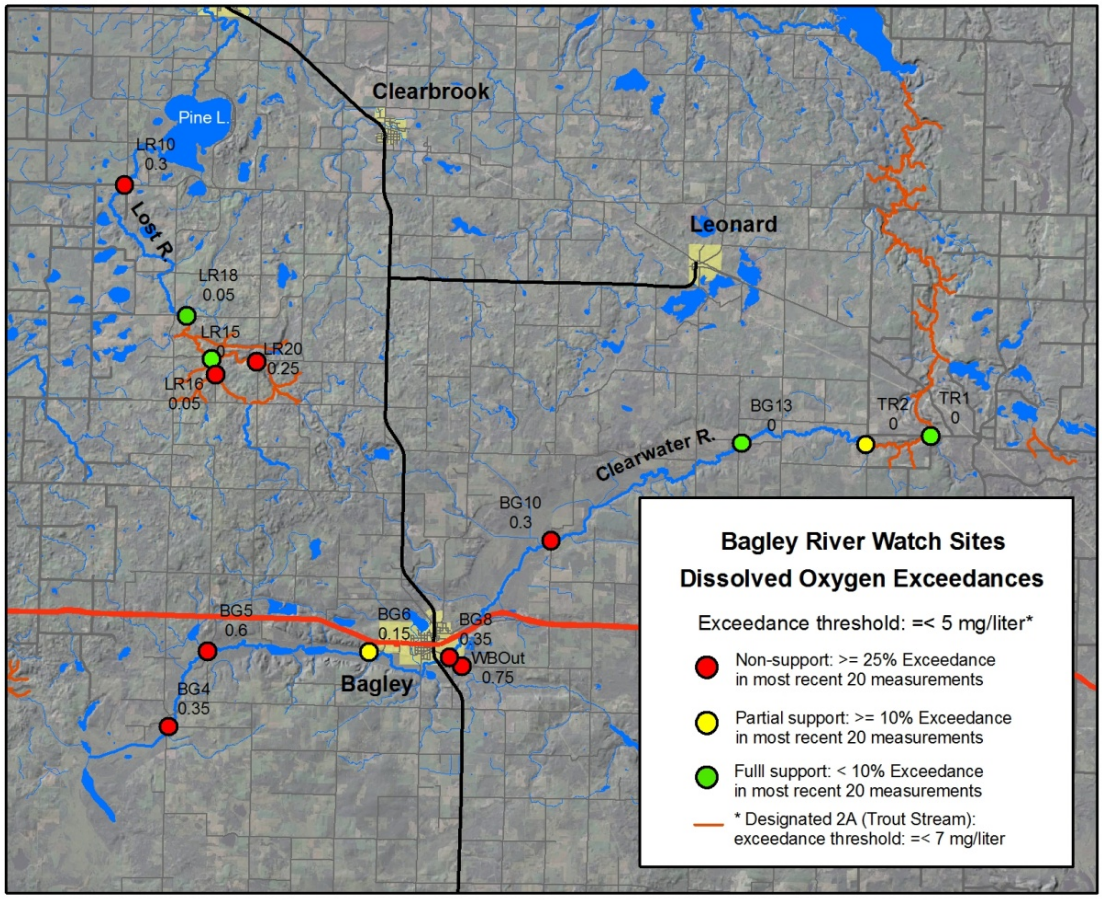


Figure 1 - Exceedance percentages for dissolved oxygen, Bagley River Watch sites

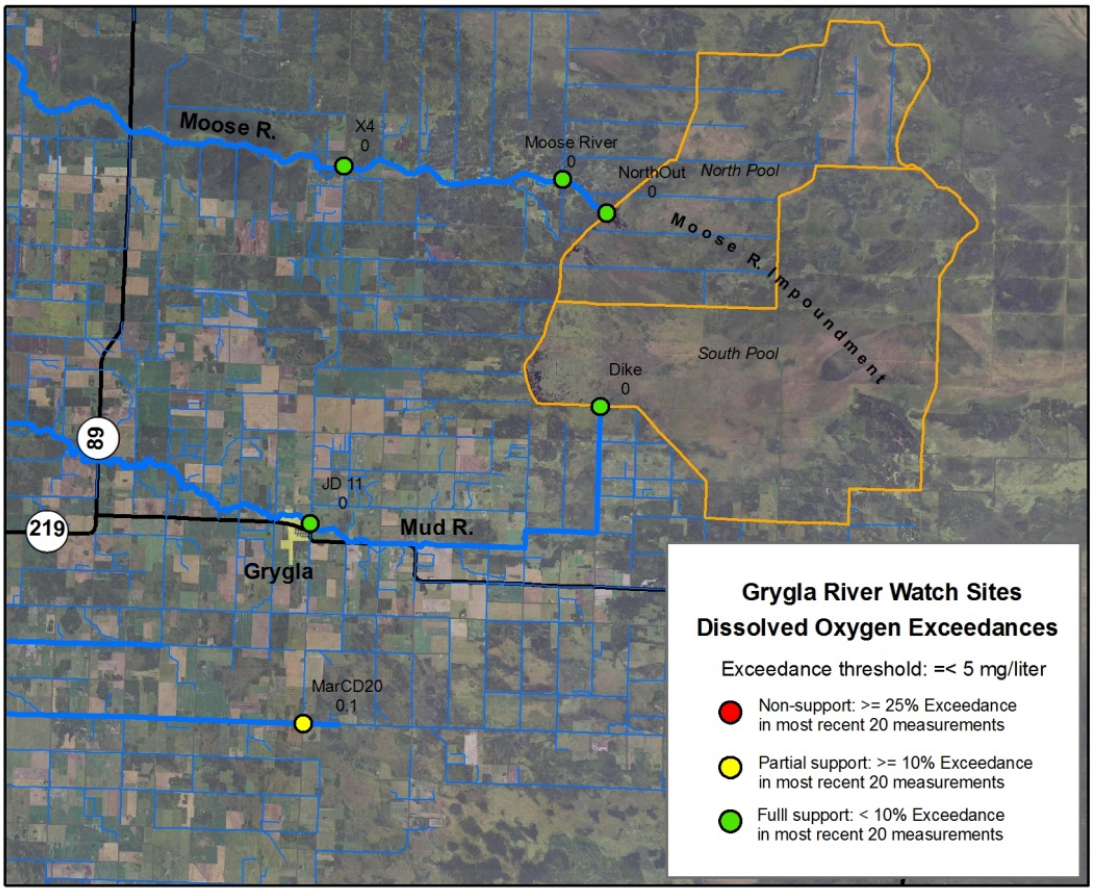


Figure 2 - Exceedance percentages for dissolved oxygen, Grygla River Watch sites

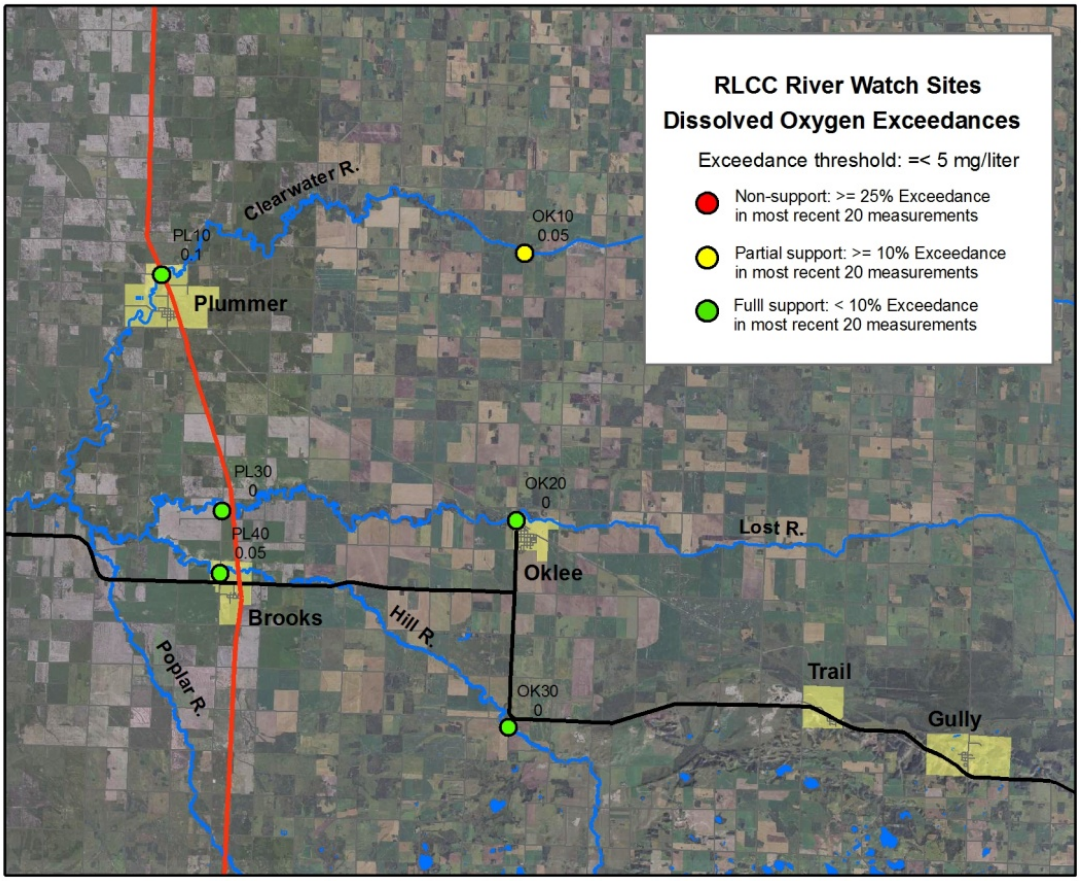


Figure 3 - Exceedance percentages for dissolved oxygen, Oklee-Plummer River Watch sites

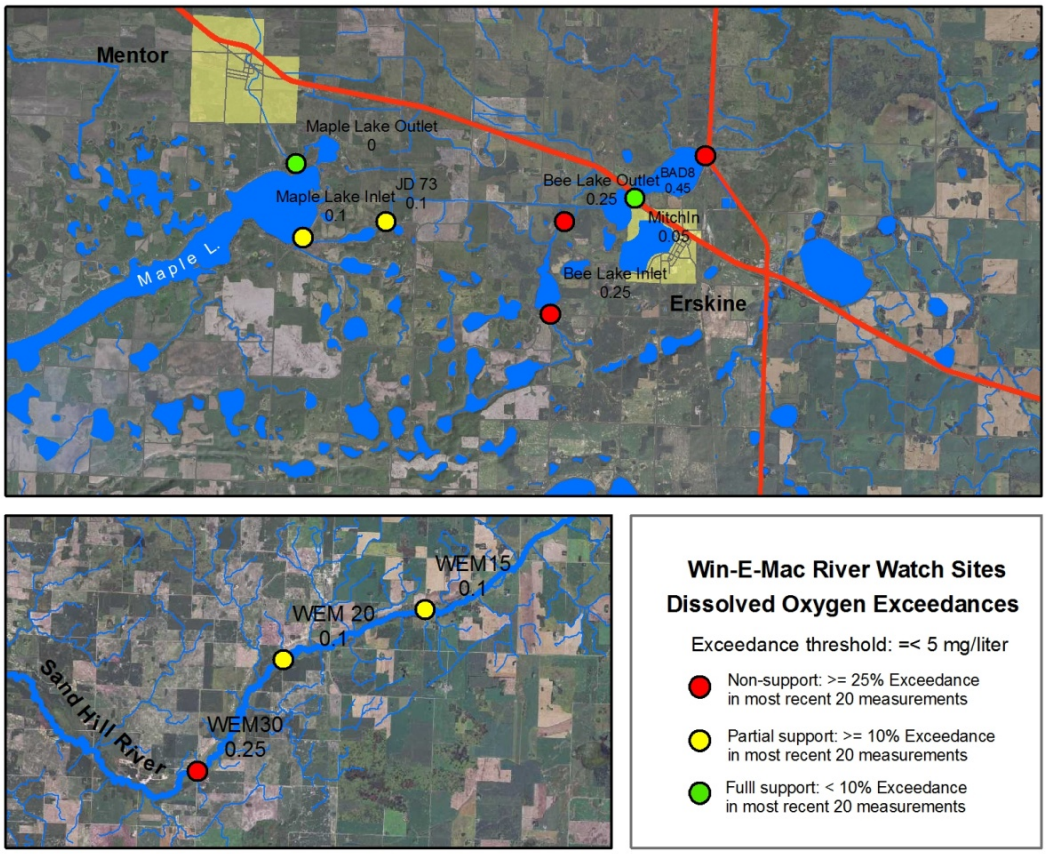


Figure 4 - Exceedance percentages for dissolved oxygen, Win-E-Mac River Watch sites

Turbidity

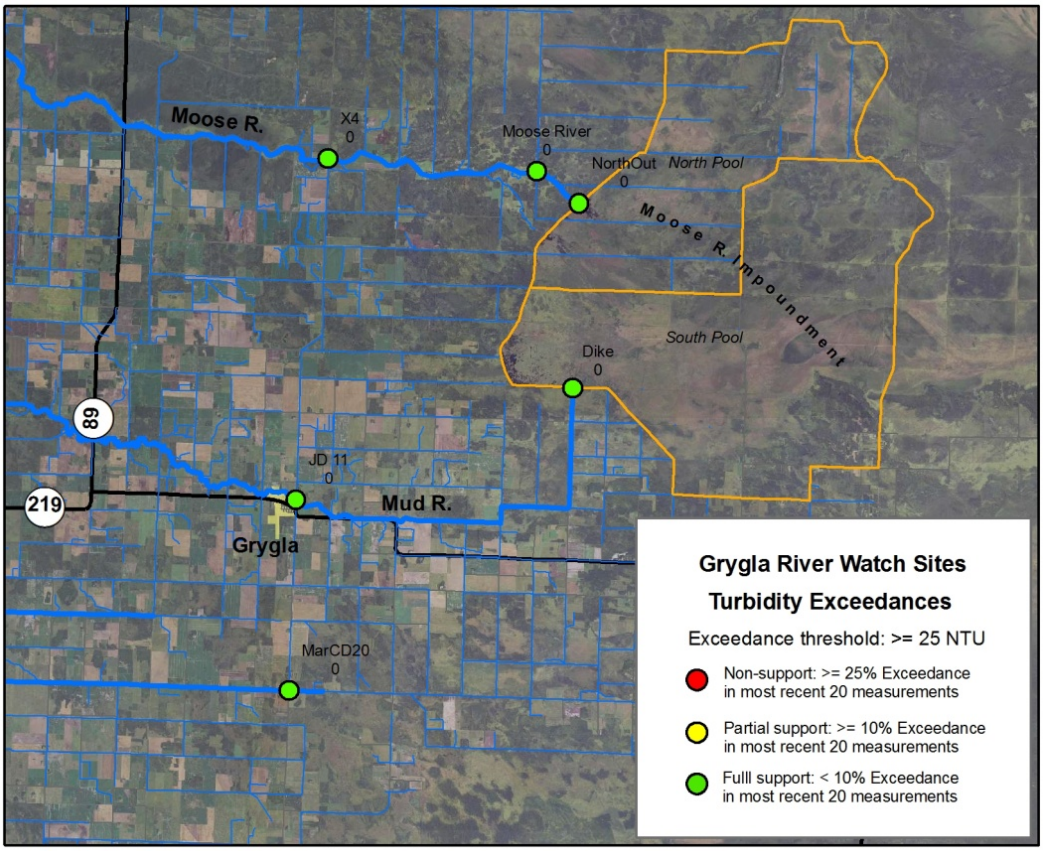


Figure 5 - Exceedance percentages for Turbidity, Grygla River Watch sites

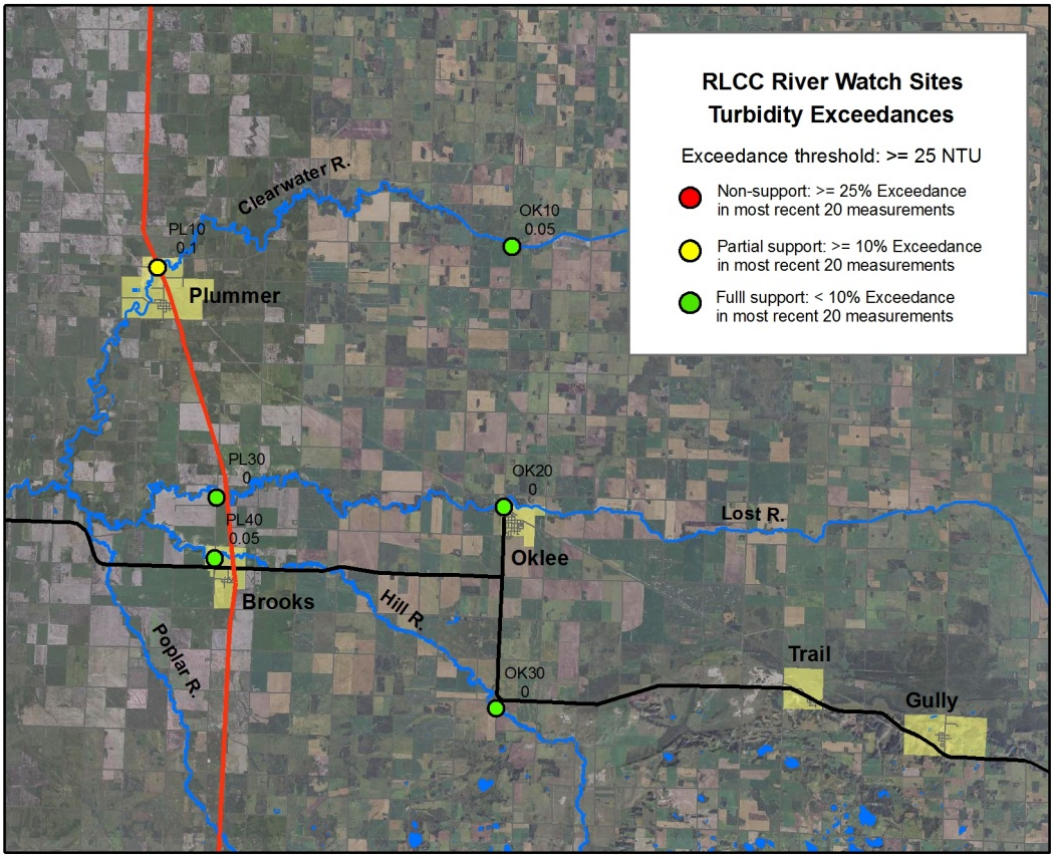


Figure 6 - Exceedance percentages for turbidity, Oklee-Plummer River Watch sites

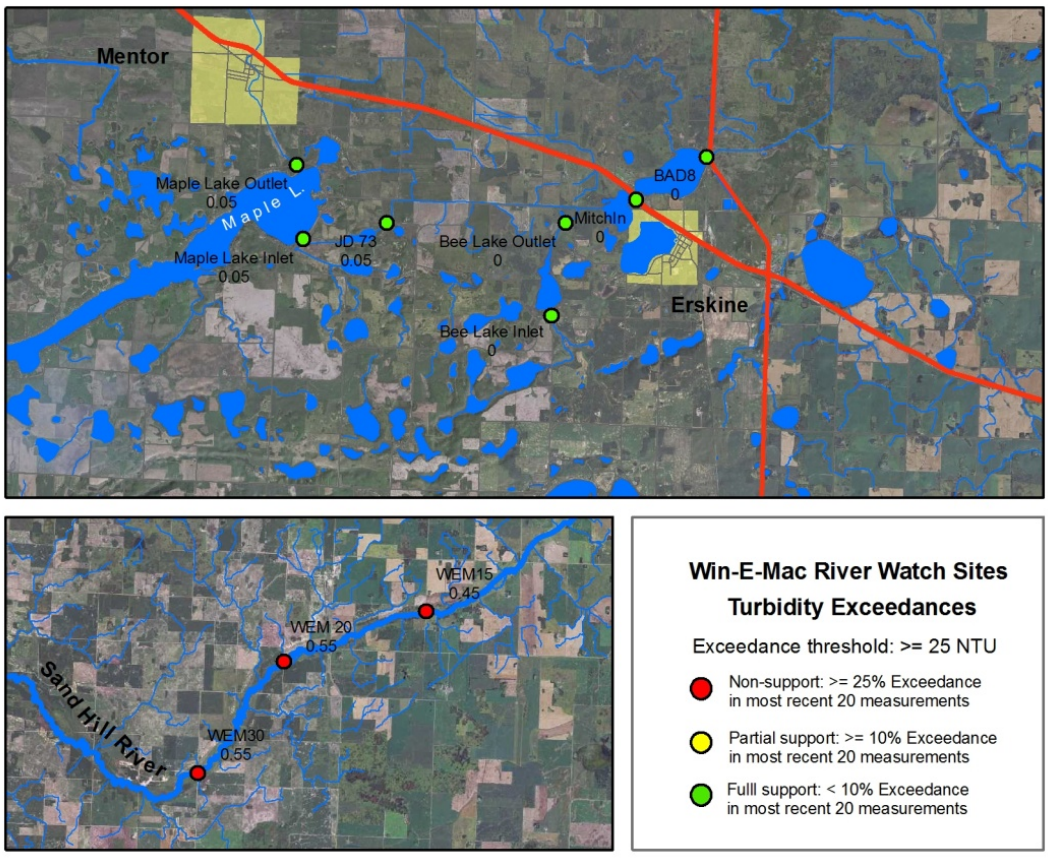


Figure 7 - Exceedance percentages for turbidity, Win-E-Mac River Watch sites

Field pH

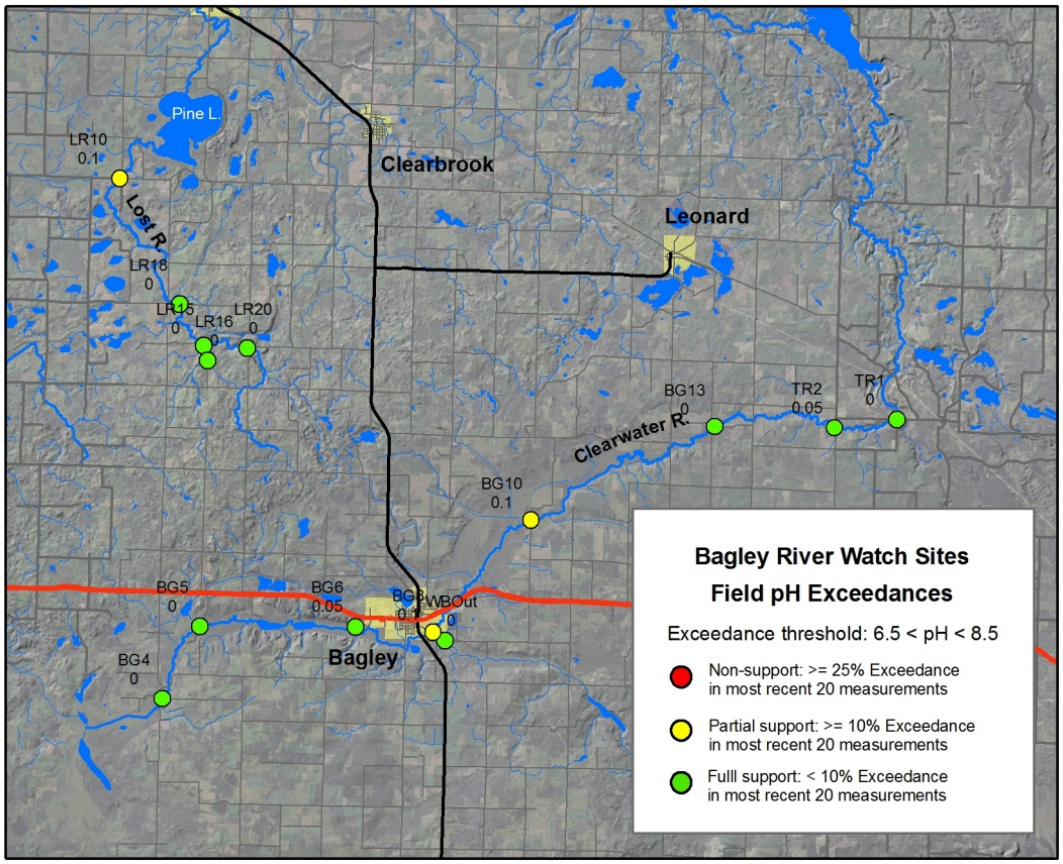


Figure 8 - Exceedance percentages for field pH, Bagley River Watch sites

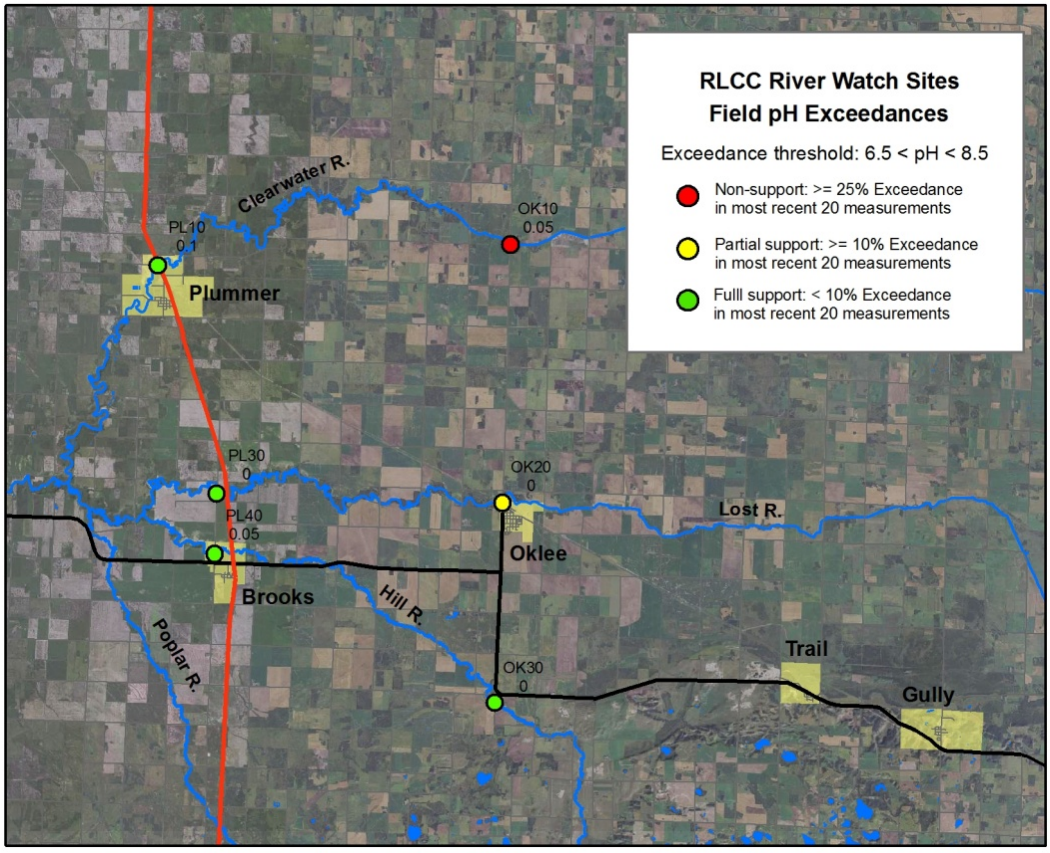


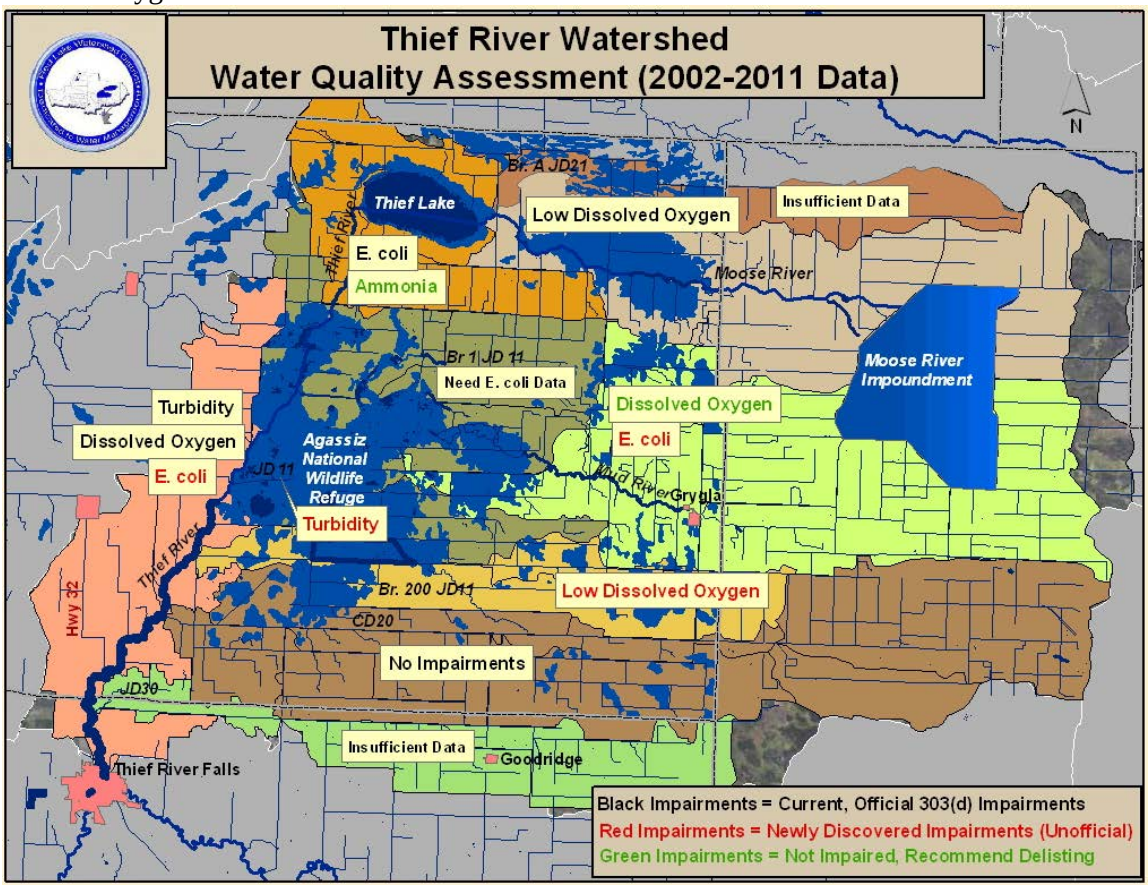
Figure 9 - Exceedance percentages for field pH, Oklee-Plummer River Watch sites

A Water Quality Assessment of RLWD Streams and Rivers

For the 2011 Statewide Assessment, the Minnesota Pollution Control Agency adopted a new strategy for their assessments. In the past, all of the waters of the State (that have sufficient monitoring data) have been assessed on every odd-numbered year. Now, each major watershed will be assessed only once in a ten-year period. Only a handful of watersheds will be assessed each year. 303(d) Lists of Impaired Waters will still be finalized on every even-numbered year. While it is disappointing that known impairments will be ignored by the MPCA for many years under this new program, there are some benefits. The MPCA is trying to achieve quality over quantity in its assessments. There will be comprehensive reports completed for each watershed once assessments are completed, which is something that hasn't been done before. Monitoring and assessment will be more-or-less synchronized with Intensive Watershed Monitoring, Major Watershed Restoration and Protection projects (MRWPPs), and watershed planning. The Thief River will be the first watershed within the District to be assessed under this new system, and that will happen in 2013. New Thief River impairments will show up on the 303(d) List of Impaired Waters in 2014. The Red Lake River and Grand Marais Creek watersheds will be assessed in 2014 and new impairments in these watersheds will be included in the 2016 303(d) List of Impaired Waters. The Clearwater River and Upper/Lower Red Lakes watersheds won't be assessed until 2016, so new impairments in those waters won't be officially "listed" until 2018.

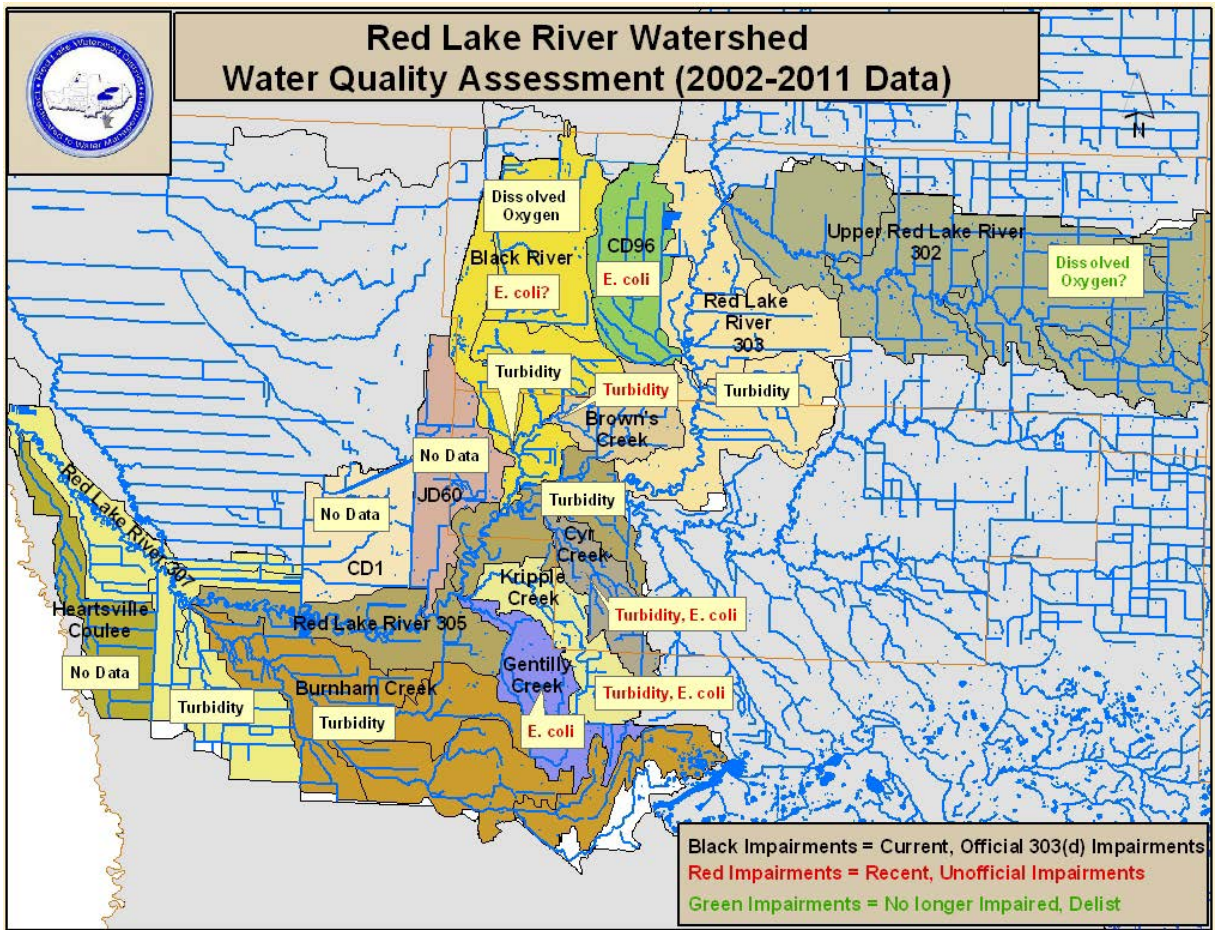
Because of the new assessment schedule, it is important for local agencies to vigilantly monitor water quality conditions, assess water quality conditions, keep the public informed about water quality conditions, and initiate projects to address known water quality problems. A water quality assessment for each of the five major watersheds in the District has been conducted for this report. The following maps summarize the results.

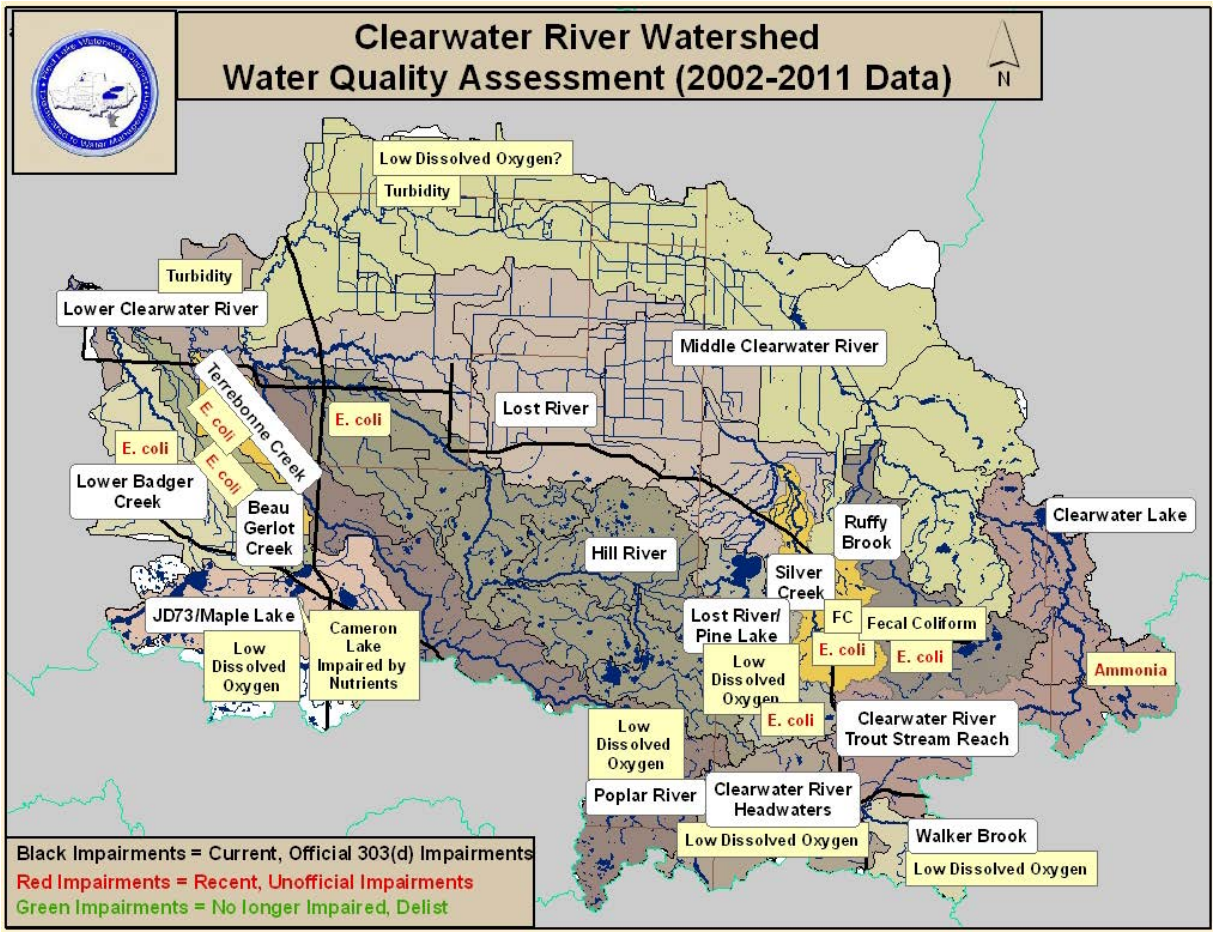
In the Thief River watershed, recent monitoring has discovered new E. coli, turbidity and dissolved oxygen impairments. There are a couple of the old impairments that can be delisted because the Thief River near Thief Lake hasn't exceeded the ammonia standard once in the last ten years and the Mud River is meeting the dissolved oxygen standard.

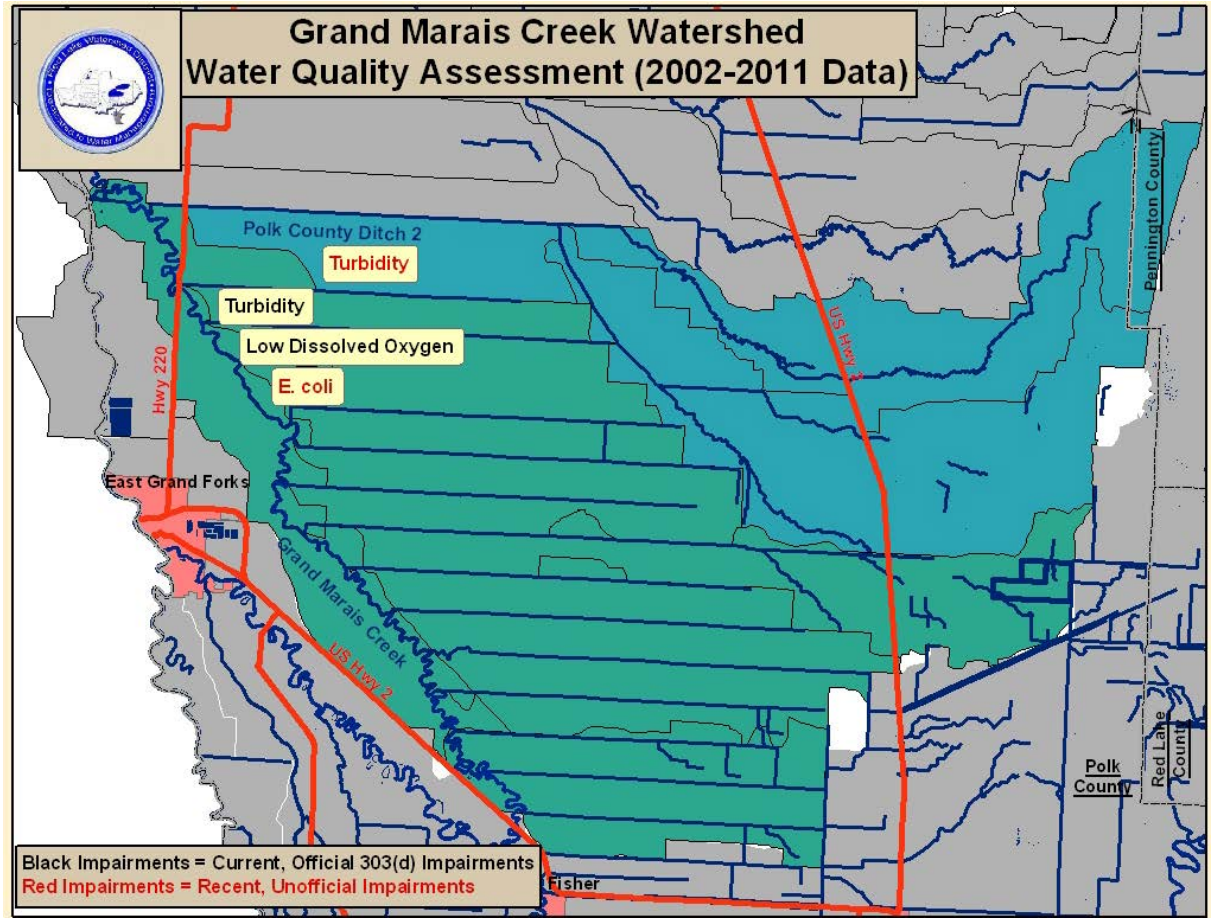


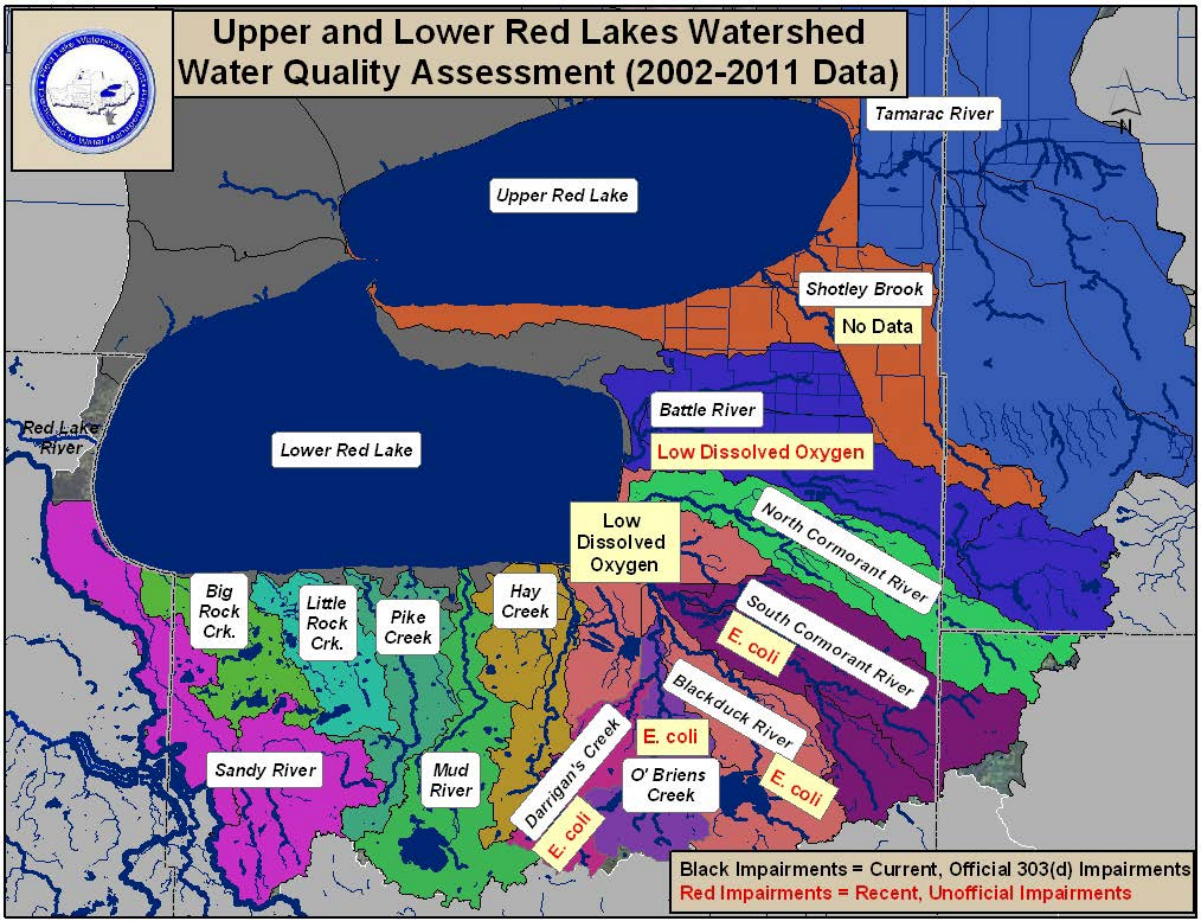
The switch from fecal coliform to E. coli as a water quality standard for the protection of aquatic recreation has resulted in the identification of bacteria-based impairments on rivers that were meeting the fecal coliform standard in the past. In recent years, we have learned that, compared to the E. coli analysis methods, the fecal coliform analysis was underestimating the amount of harmful bacteria in a water sample. Now that we've collected sufficient data to assess a stream using only E. coli concentrations, we are finding more impairments. Five new E. coli impairments have been identified in the Red Lake River watershed, two were found in the Thief River watershed, seven were found in the Clearwater River watershed, Grand Marais Creek is now impaired by E. coli, and E. coli impairments have been found at each of the four streams that have been sampled by the District in the Blackduck River watershed in Beltrami County.

The data available from the Upper Red Lake River doesn't support the existing dissolved oxygen impairment. However, it also isn't sufficient to disprove and delist the impairment. More measurements are needed that are taken earlier than 9:00 am in order to more closely represent the daily minimum values that are needed to prove that a river is fully supporting aquatic life with its dissolved oxygen levels. This may be accomplished through targeted early-morning monitoring and it will also be accomplished through the continuous dissolved oxygen data collection that will occur during the Red Lake River Major Watershed Restoration and Protection Project.




Clearwater River Watershed
Water Quality Assessment (2002-2011 Data)
N
Low Dissolved Oxygen?
Turbidity
Turbidity
Lower Clearwater River
Middle Clearwater River
Terrebonne Creek
E. coli
E. coli
E. coli
E. coli
Lost River
Lower Badger Creek
Beau Gerlot Creek
Hill River
Ruffy Brook
Clearwater Lake
Silver Creek
JD73/Maple Lake
Low Dissolved Oxygen
Cameron Lake Impaired by Nutrients
Lost River/ Pine Lake
FC
Fecal Coliform
E. coli
E. coli
Low Dissolved Oxygen
Ammonia
E. coli
Clearwater River Trout Stream Reach
Low Dissolved Oxygen
Poplar River
Clearwater River Headwaters
Low Dissolved Oxygen
Walker Brook
Low Dissolved Oxygen
Black Impairments = Current, Official 303(d) Impairments
Red Impairments = Recent, Unofficial Impairments
Green Impairments = No longer Impaired, Delist


Grand Marais Creek Watershed
Water Quality Assessment (2002-2011 Data)
Polk County Ditch 2
Turbidity
Turbidity
Low Dissolved Oxygen
E. coli
Hwy 220
US Hwy 2
Pennington County
East Grand Forks
Grand Marais Creek
US Hwy 2
Polk County
Red Lake County
Black Impairments = Current, Official 303(d) Impairments
Red Impairments = Recent, Unofficial Impairments
Fisher



Upper Thief River Buffer Initiative Town Hall Meeting at the Whiteford Town Hall

District staff participated in a public meeting in April 2011 concerning the Upper Thief River watershed. This meeting was organized by the Marshall County SWCD and held at the Whiteford Town Hall with various landowners. NRCS, SWCD, and District representatives talked about water quality issues in the Thief River watershed and BMP incentive programs that are available. Landowners shared their thoughts on conservations programs, such as what they like and what they'd like to see changed with the programs. NRCS and SWCD staff addressed the landowners' questions and concerns about BMP incentive programs like Continuous CRP and EQIP. Several landowners met with NRCS and SWCD staff after the meeting about installing buffers and side-water inlets on their land. Using the meeting's discussion as a guide, the Marshall County SWCD successfully applied for a Board of Water and Soil Resources Clean Water Fund grant to supplement EQIP payments in order to accomplish accelerated and targeted installation of buffers and side water inlets within this subwatershed. By using the EQIP program rather than CRP, landowners will be allowed to hay the buffer strips. The Continuous CRP program provides significantly better payments than EQIP, but haying is not allowed. This project should improve water quality in the Thief River through a greater level of participation in conservation programs that is accomplished through payments that are more competitive when compared to crop prices, increased outreach, and greater flexibility in the management of the buffers for the landowners.

Other Notes from 2011

- All of the District water quality data that was collected and available through October was entered and submitted to the MPCA for entry into the EQuIS database (District monitoring program, Thief River Watershed Assessment Project, Thief River Watershed Assessment Monitoring SWAG).
- Completed a new revision of the Standard Operating Procedures for Water Quality Monitoring in the Red River Watershed
- Photographic monitoring of the Gully 6 erosion control project.
    - Vegetation is filling in around the cross-vane weir and the banks are looking more stable.
- The District funded the analysis of samples collected from Bagley Lake by the Clearwater SWCD. The lake was very eutrophic (excess nutrients and poor clarity) and the water looked very much like pea soup at times. The primary source of the excess nutrients was a cattle operation along the lakeshore. The Clearwater County SWCD, NRCS, and the producer have been working on plans for a grazing management project that will keep cattle out of the lake.

Gully 6 Project

Bagley Lake Algae Bloom

Other 2011 Watershed Activities

2011 Minnesota Association of Watershed District's Summer Tour

The District jointly hosted the 2011 Minnesota Association of Watershed District's (MAWD) Summer Tour with the Middle Snake Tamarac Watershed District in June 2011. Tour participants were from throughout the state involved or interested in watershed district activities. The event started on Thursday afternoon with tours of Arctic Cat and Digi-Key both manufacturing companies located in Thief River Falls. Thursday also consisted of a MAWD Board meeting and welcome reception held at the Best Western, Thief River Falls. On Friday morning, District staff from both Watershed Districts hosted tours of projects and highlights within each of their respective watersheds while the spouses of the participants toured a rice processing facility in Clearbrook, along with a local winery near Plummer. A banquet and entertainment concluded the day. Seminars on Saturday morning brought the Summer Tour to a close.

Other on-going activities include ring dike construction, ditch maintenance, water appropriation for wild rice growers, stream flow monitoring, benchmark surveys, hydrologic analysis, flood studies and inspection, operation and maintenance of District projects and facilities.

Farmstead Ring Dikes (RLWD Project #129)

Since the historic flood of 1997, the District has received grants to assist landowners with the construction of farmstead ring dikes. With the funds, the District has established a cost share program for new construction and for upgrading of existing ring dikes. To date, 66 ring dikes have been completed with funding assistance from the state. Limited funding for the ring dike program will continue into 2012.

Design Criteria

- Elevation of the dike will be two feet above previous high-water elevation or 1 foot above the administrative 100-year flood, whichever is higher.
- Sideslopes of three feet horizontal to one foot vertical.
- Top width of six feet (minimum).

Construction includes all material for constructing embankment, culvert flapgates, any clearing/grubbing, seed, fertilizer and mulch, gravel, etc.

The funding breakdown for the ring dike program will be shared by the following parties, in the following percentages:

- State of Minnesota 50%
- Red River Watershed Management Board 25%
- Red Lake Watershed District 12.5%
- Applicant 12.5%

With the available funding, one ring dike was designed and constructed in 2011. This was for the Crookston Baptist Church Parrish, located east of the City of Crookston in Polk County. The project consisted of improving an existing dike, enhance adjacent drainage, and installation of a gated culvert. The engineering firm of Widseth, Smith, Nolting and Associates of Crookston assisted with the project. Final finish work and seeding will be completed in 2012.

Construction costs for each ring dike varies, and depends upon the amount of cubic yards needed for the dike, availability of clay borrow material, amount of tree clearing, culverts, etc.

Name	Dike Length	Dike	Average Height	Cost
Baptist Church	1,200 feet	2,100 cu.yd.	approx. 3.0 feet	$25,000.00

Additional funding source for Farmstead Ring Dikes in 2011

The Natural Resource Conservation Service (NRCS) and the District cooperated to help fund one farmstead ring dike in 2011 for the Radi Brothers located in Section 30, Fanny Township, Polk County which is northwest of Fisher, MN. The Crookston NRCS office, the District, and consulting firm HDR Engineering, Inc., worked with the landowner in the design phase through construction. The ring dike was funded by 75% Federal and 25% Local cost share.

Name	Dike Length	Dike	Average Height	Cost
Radi Brother	1,600 feet	7,609 cu.yd.	approx. 4.4 feet	$87,740.00

Permits (RLWD Project #90)

For the second year in a row, a record number of permit applications were received by the District. In 2011, a total of 232 applications were submitted, which is 26 more than the previous high in 2010. Dry weather conditions and above average temperatures allowed work to continue into December.

The District also had to deal with, and address permit violations relating to unpermitted/unauthorized work. Written warnings were sent to the person or entity that performed the work explaining that if there is a

second offense, the responsible person or entity could possibly be subject to a fine, re-storing the work to the original condition, and paying for the actual engineering and attorney's fees incurred by the District.

Late in the year, the District was informed of, and inspected work that appears to have altered and diverted original flow patterns. In 2012, survey work and observing the spring runoff event will be done and work towards a solution.

Of the permits received two were tabled until spring 2012, five were withdrawn, and one denied. The numbers listed below indicate the permits approved and how they are categorized within our rules for permitting:

- 1 utility
- 3 re-grade
- 166 culvert/bridge
- 46 drainage
- 5 wetlands
- 3 dike

Some of the applicants were state and county highway departments, townships, cities, utility companies, State & Federal agencies, landowners, and private individuals. Examples of the work consisted of road and bridge projects, wetland restoration, culvert installations, and ditch cleaning. Examples of work associated with permit review consists of, watershed delineations, detailed surveys, drainage area and culvert sizing recommendations, and meetings. Permit applications are available on the District web site:www.redlakewatershed.org

Examples of very poor work and not permittable

Example of well done excavation

Wild Rice Water Allocation (RLWD Project #45)

As a domesticated agricultural grain crop, wild rice is grown in paddies, flooded with water to an average depth of about 1 foot.


Typical pumping station

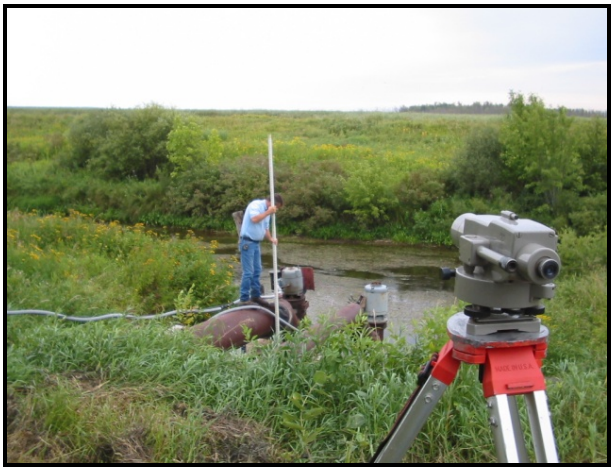
Wild rice production along the Clearwater River began in 1968. The water allocation project was petitioned by the growers in 1984 and involves the appropriation of water for the production of wild rice on approximately 12,000 acres of paddies along the Clearwater River. Spring flood storage capacity is substantial, and amounts to about 23,000 acre feet, which is equivalent to 1.1 inches of runoff. This storage helps to reduce downstream flood flows/peaks.

Throughout the year, during periods of low flow, the District allocates water to the growers. The allocation program ensures that each grower receives their appropriate share of available flow, and that the protected flow of 36 cubic feet per second (cfs) is maintained in the Clearwater River. The paddies are drained during July and August to facilitate harvest.

When there is adequate flow, some growers partially flood paddies in the fall or late winter. By doing this, it helps to reduce the need of pumping activity in the spring, at which time, water supplies may not be sufficient to meet all of their needs.


Wild rice paddy

For most of the 2011 growing season, sufficient flows in the Clearwater River watershed provided the growers adequate water for flooding paddies. Allocation was performed in October thru December for fall flooding. Normal duties include correspondence with growers, record river levels at various sites and flow measurements. The growers also provide valuable river level gage data.


Surveying water lift from river to pump


Harvesting wild rice

Stream Flow Monitoring (RLWD Project #21)

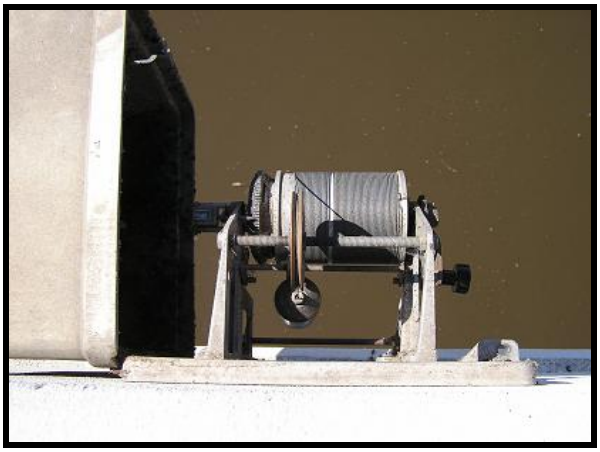
Our stream flow monitoring is a vital on-going activity. The District has an active stream gaging program and local volunteers assist us in recording gage readings and monitoring river conditions for each runoff event. Approximately 160 gages of various types (staff, wire weight, automated) are located throughout the District. District staff performs flow measurements and continues to develop stage (gage height) and discharges (flow in cubic feet per second) curves at many locations. This data, in conjunction with records and cooperative efforts from other agencies such as the U. S. Geological Survey (USGS), and the MnDNR will help us better understand drainage and runoff characteristics within the District. With several years of recorded data, it will become increasingly valuable for the Board of Managers and staff for the operation of existing projects and development of potential projects.

Measuring flow beneath ice

Typical staff gage at structure

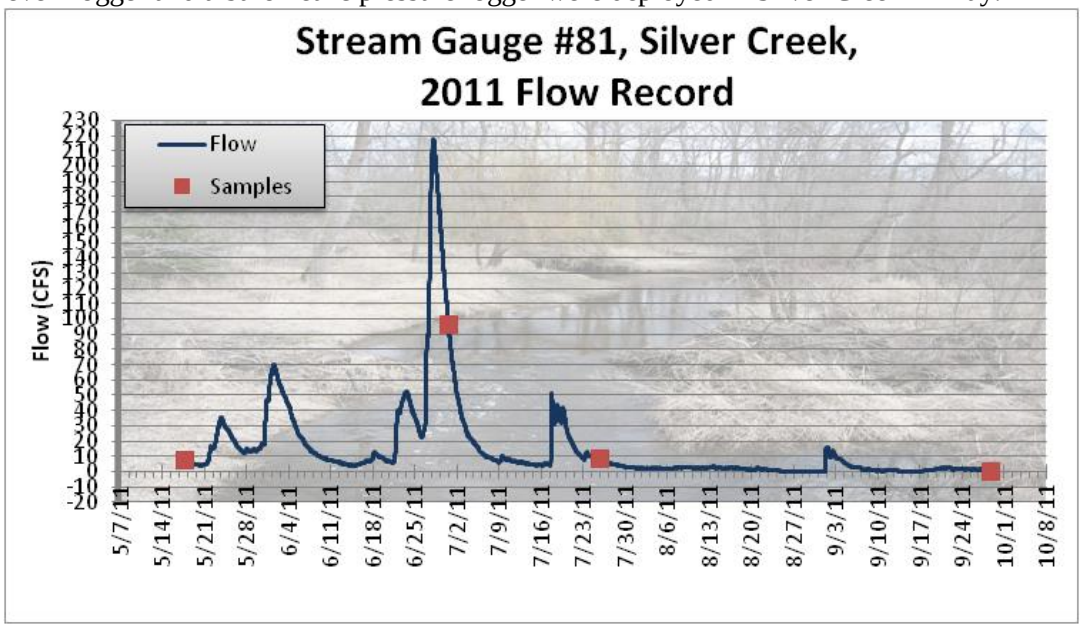
Measuring flow with bridge crane

Automated river gage

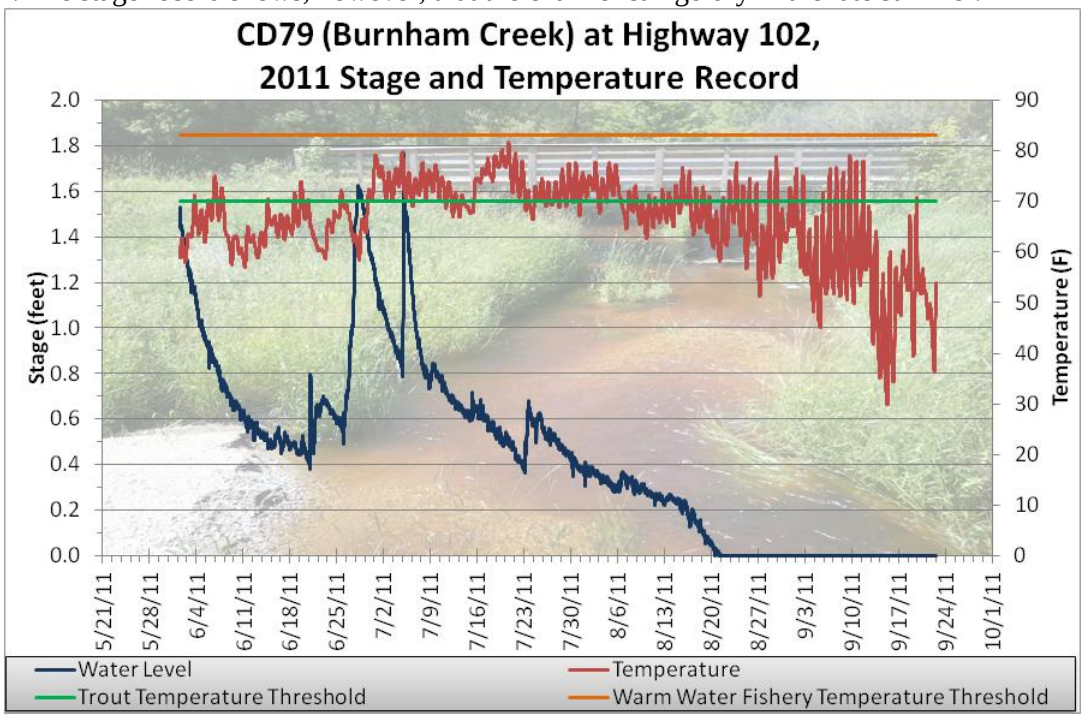


Wire weight gage on bridge

In early 2011, work began on updated site descriptions of District stream gauging sites that were saved as PDF files. Eventually these 1-2 page site summary documents and a corresponding site location layer will be available on the District interactive map viewer on the District website. Users can find District stage/flow sites, find out what data is available from those sites, view flow rating curves, and find benchmark elevation information. In March, much time was spent recording water levels and collecting flow measurements during spring runoff and installing HOBO water level loggers as part of the District stream gauging project prior to the beginning of the Thief River Watershed Assessment Project. A HOBO Water Level Logger and a barometric pressure logger were deployed in Silver Creek in May.



A HOBO Water Level Logger was installed in Polk County Ditch 79 at Hwy 102 to get a temperature and water level record that will help gauge the potential this stream has to support fish. This site is located upstream of the washed-out Spring Gravel dam and a potential stream restoration project. At the end of the year, the 2011 stage record for the Highway 102 crossing of Polk CD79 (Burnham Creek watershed, RLWD Stream Gauge 91) was compiled and plotted. The temperature data shows that fish could survive in the ditch. The stage record shows, however, that the channel can go dry in the late summer.



Snow Surveys

The District performs weekly snow surveys each year, beginning in about the middle of February. Seven sampling sites are monitored throughout the District. The locations of these sites are near impoundment facilities which are designed and operated for floodwater retention.

The depth of the snowpack is measured and a 'core sample' is obtained. The tube and snow core are weighed, and the "water content" of the snow is calculated. Five samples are taken at each site and averaged for the weekly data.

This information is forwarded to the National Weather Service and the North Central River Forecast Center. Obtaining snowpack information helps estimate the amount of runoff and make flood forecasting predictions.

The relationship between snowpack and the amount of snowmelt runoff is complex, and depends on many factors.

Some of the criteria used to determine flood potential of spring snowmelt are:

- Depth of existing snow cover and snow moisture content
- Existing soil moisture (was it wet or dry the previous fall?)
- Depth of frost - or is there frost ?
- River ice and ice jams

Fast and Slow thaws:

- Gradual or intermittent thawing may reduce the potential for serious flooding, especially in areas with minimal frost depths
- Flood potential usually increases with late season melting, when a rapid melt is more likely; and if additional precipitation occurs during the runoff event.

Into the first week of April 2011, the average depth of the snowpack was 7.75 inches and the water equivalent (moisture content) was 2.30 inches. During the spring runoff certain areas of the District encountered major flooding once again. Most of the damage occurred in the western area of the District, nearer to the main stem of the Red River of the North, primarily in Polk County.

Dry weather conditions and above average temperatures prevailed from about August through December. The first measurable snowfall came on December 30th.

Establish base weight of empty sampling tube

Obtaining snow depth and core sample

Establishing weight of snow sample to obtain water content

Red Lake Watershed District Boundary

During 2011, the District conducted both office and field work pertaining to proposed changes to the existing legal boundary. Two specific areas were reviewed one for a boundary change modification, and the other to withdraw territory from the District. To determine the hydrologic boundary, a detailed field inspection was made, landowners consulted and US Geological Survey topographic maps and aerial photographs were used.

District Boundary Change

Determine the hydrologic boundary between the District and the Sand Hill Watershed District located primarily in Polk County from the Red River of the North in Vineland Township and easterly to Columbia Township near Lengby, MN. There is also a small tract of land located in Heier Township, Mahnomen County.

The changes in acres affected are as follows:

- Approximately 13,556 (21.18 sq.mi.) acres to be removed from the District and added to the Sand Hill Watershed District.
- Approximately 9,077 (14.18 sq.mi.) acres to be added to the District from the Sand Hill Watershed District.

The proposed changes were submitted to the Minnesota Board of Water and Soil Resources. This agency is responsible for scheduling the time and location for public hearings, which are required for boundary changes. At their August 25, 2011 meeting, the Minnesota Board of Water and Soil Resources approved the boundary change as submitted.

Withdrawal of Territory from the District

Determine the hydrologic boundary between the District and the Mississippi Headwaters Watershed located east of the City of Blackduck in Summit Township, Beltrami County and a small portion in Moose Creek Township, Itasca County. This area was brought to the District's attention by a landowner and all the lands in question would be withdrawn from the District

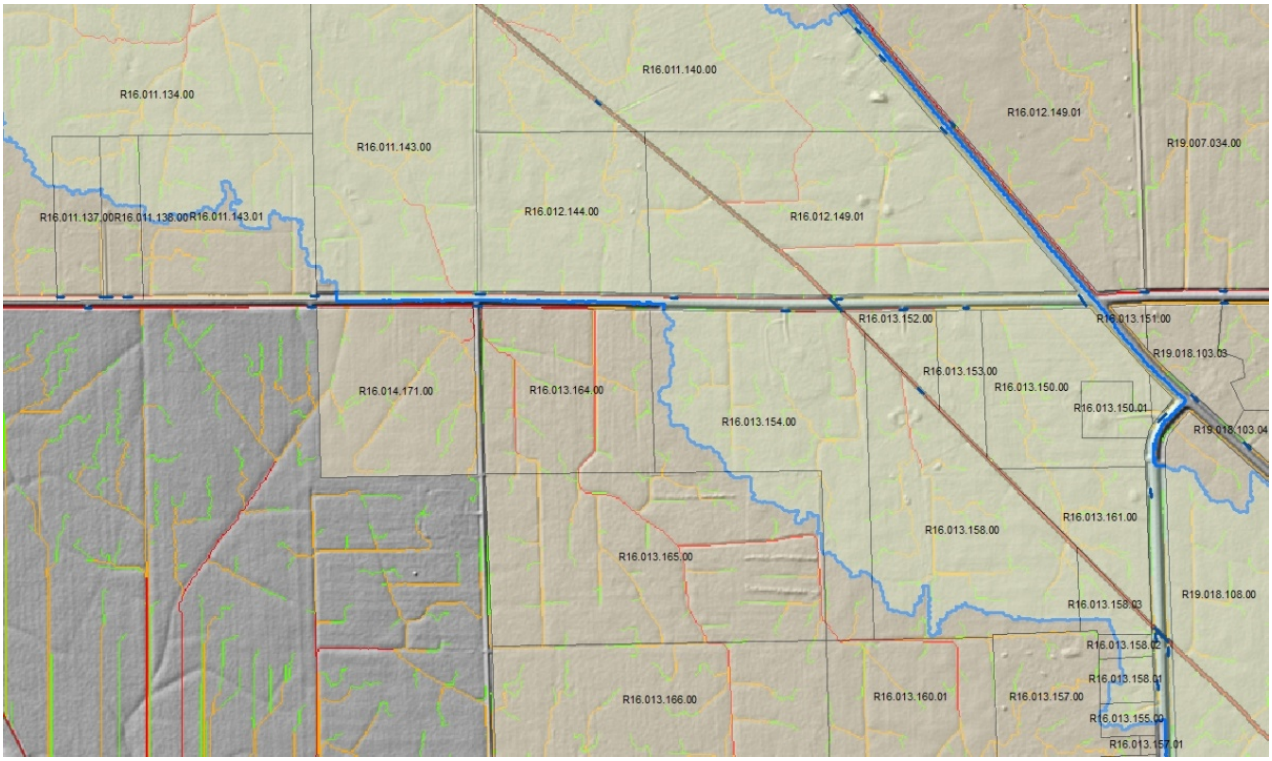
The change in acres affected are as follows:

- Approximately 2200 acres to be withdrawn from the District

The proposed changes were submitted to the Minnesota Board of Water and Soil Resources.
This agency is responsible for scheduling the time and location for public hearings, which are required for withdrawal of territory. This hearing will be in January 2012.

GIS

District GIS staff developed a GIS layer of the parcel boundaries within the drainage area of Pennington County Ditch 1 using the property descriptions from the deeds. These parcels will be updated annually. This spatial data has provided essential information on area and land features that the viewers incorporated into their benefits assessment.



Surface Conditioning – LiDAR data

The LiDAR elevation data set is a digital model of the land surface that brings a powerful set of end-use applications to desktop computing. Potential applications include:

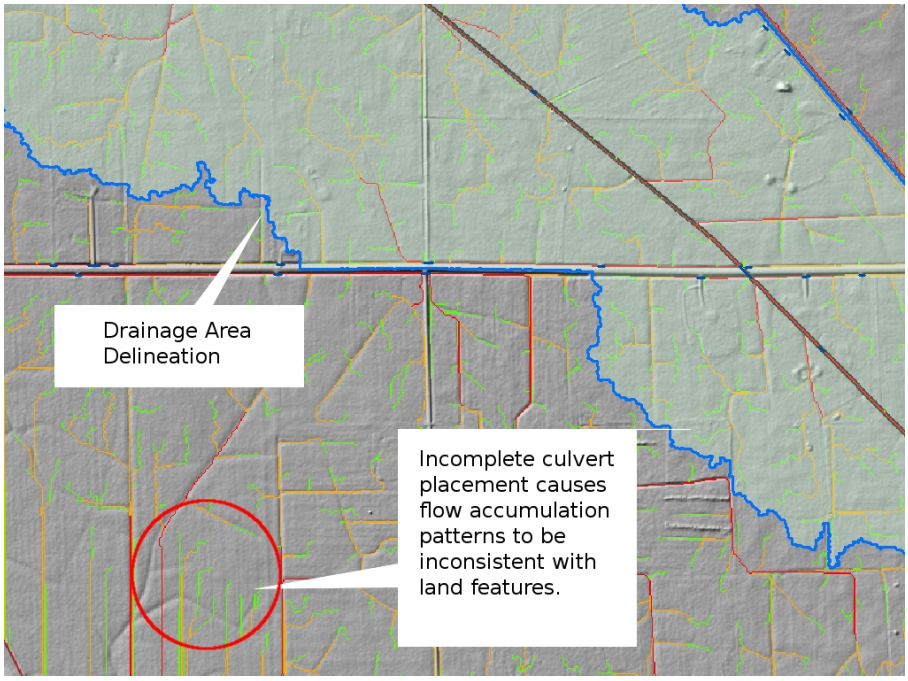
- Drainage area delineation
- Wetland identification
- Benefits assessment
- Estimation of erosion potential

In 2011, LiDAR data at the District has been used for drainage area delineation, flow direction and accumulation, and initial efforts at erosion prediction. But the largest time investment has been in conditioning the LiDAR data set to accurately reflect real-world drainage patterns. For all its accuracy, LiDAR technology cannot see culverts or bridge underpasses, nor can it accurately detect the elevation of a water surface. Consequently, a flow model using a raw LiDAR data will interpret a culvert crossing as a digital dam and a lake or river as a random surface.

To ensure a realistic virtual flow, at least two adjustments must be applied to a raw DEM surface:

- Culverts and underpasses must be “burned” into the raw DEM grid
- Large water surfaces must be delineated and then set to a constant elevation value.

Water surfaces can normally be adjusted without field inspection. The adjustments for culverts and underpasses, however, are more labor-intensive, and require at least some visual inspection. Each culvert is rendered as a simple line feature and “burned” (mathematically inserted) into the raw DEM grid surface. The accuracy of the corrected surface is checked by comparing the flow accumulation and fill patterns with visible land features.



When flow accumulation patterns are consistent with known surface contours, other analyses that cannot be visually tested, such as benefits assessment and potential erosion can be run with more confidence using the corrected surface. Practically any type of hydrological analysis requires a high resolution[1] corrected surface that reflects ground-verified features.[2] Once such a surface is developed, it can be used as a long term resource both for the District and other agencies.

The first step in the process was to establish a workflow for surface correction to serve as a template for current and future use. It can be briefly summarized in four steps:

1. Download and assemble component data parcels into a surface that covers the drainage area under study.
2. Accumulate corrective features (culverts, underpasses, etc.) in a multiline shape file, and apply that shape file as an input to the hydro correction process. This requires desktop and field observations.
3. Produce derivative surfaces (fill, slope, flow direction).
4. Test the hydrological corrections by comparing fill and flow direction surfaces with existing landscape features.

This portion of the workflow was developed through trial and error, workshop training, and extensive background reading. It was verified in consultation with Houston Engineering and tested with survey-grade GPS equipment.

Maintenance of Drainage Systems

The inspection of the District's many miles of drainage ditches and numerous other projects is a very busy function for District staff. Semi annual inspections are conducted to determine what type of repairs may be needed if any, due to any damage that may have occurred during the spring runoff, and any other maintenance work to keep them in good working order.

[1] Three square meters at most
[2] The actual amount of ground verification required may depend on the scale of the inquiry. A culvert overlooked or misdirected may matter less at the watershed scale than at the quarter-section scale.

A helicopter was again utilized this year for the spraying of cattails in the District ditches and other projects. The helicopter has the ability to spot spray only where it's needed and also generates a GPS map giving all the locations, distances that were sprayed, weather, wind speeds, etc, which is valuable information and also a big savings to the District. With the use of a helicopter for spraying, they have the ability to access places that would be impossible to ground spray, and at a relatively low cost at $325 per sprayed mile. With the recent establishment of the permanent 16 ½ foot wide grass buffer strips on the ditch right-of-ways, the District is now required to inspect this grass strip, maintain it by mowing at least once a year, and spray for any noxious weeds, and try to keep them from being encroached on by farming practices. Four contractors were hired to mow the watershed projects and the approximately 133 miles of ditches and ditch right-of-ways, with mowing taking place on one or both sides of each ditch.

The Helicopter that is used to for spraying the District ditches and other projects.

Following is a listing by county, project name and number, of the work and spraying that was completed to each of these ditches or projects in 2011.

Clearwater County

- Judicial Ditch 72 (RLWD Project #41).
  Landowners commented on how well this ditch worked after being cleaned. Spraying of cattails was completed on September 5th on 1.45 miles out of the 11.4 miles of this ditch system that is under the jurisdiction of the District. There is no grass buffer strip required on this ditch system and the District also has no right-of-way on this ditch system, so no mowing was done. The District is working with the Clearwater SWCD to get landowners to apply the for buffer strips on this ditch system.

JD 72 cleaned and flowing, Rock rip-rap to be added

- Judicial Ditch 2A (RLWD Project #48).
  Beaver built a dam in this ditch system so a local trapper was hired and removed 4 beaver. The small dam will be removed next year if not washed out by the spring runoff. No spraying for cattails was needed on this ditch system this year. There is no right-of-way or grass buffer strip required on this ditch system, so no mowing was done.

- Judicial Ditch 2B (RLWD Project #49).
  This ditch system was sprayed for bull thistle the middle of May. No spraying for cattails was needed in this ditch system this year. Mowing of the ditch and its right of way was completed in July, where we have right of way. Beaver seem to like this system as a dam showed up in the same place as it has been in years past. A local trapper was hired and two beaver were removed with the dam removed at a later date.

Mowing the ditch slope and right of way on JD 2 B Project #49

- Judicial Ditch 5 (RLWD Project #102).
  Beaver still remain a big problem at three different culvert locations on this system. The beaver and beaver dams will be monitored and removed as needed. Clearwater County and the District are both responsible for the removal of the beaver dams, depending on their location. Talk of the outlet pipe being raised (in the dark of the night) and creating the high water in this system led to a lot of surveying and some engineering, trying to establish the original grade and pipe elevations. Two informational meetings were held with the landowners within the benefitted area, and it is yet to be determined what should be done with the outlet pipe. Some type of action on this matter may come in 2012. There is no right of way on this system, so no mowing was done (most of this system is under water). No spraying for cattails was needed on this ditch system.

- Winsor / Hangaard (RLWD Project #113).
  Mowing of this ditch and its right-of-way was completed in July and August on areas not plagued by fences. Spraying for cattails was completed on September 5th on 1.05 miles out of the 13.9 miles in this ditch system. There are still areas that have old abandoned fences that should be removed for better access for mowing of the ditch and right-of-way. In late November, right of way violations of the permanent grass strip were discovered in five different areas on this ditch system. Landowners were identified and sent letters with a map of the areas that will need to be reseeded by June 15, 2012 or the District will re-establish these areas of permanent grass buffer strip, and charges will be assessed to the landowners property tax for the following year.

Red Lake County

- RLWD Ditch 1, Lateral A & B (RLWD Project #5).
  Mowing of this ditch and its right-of-way was completed in July. Rocks were again encountered this year, even after the large number of rocks that were removed last year (they must show up in the dark of the night). Spraying for cattails was completed on September 5th on 2.63 miles out of the 6.5 miles in this ditch system. Part of this ditch system is in Polk County, so the District is working with the East Polk Soil and Water Conservation District to obtaining funding for a number of side water inlet pipes in Lateral "A" for erosion control.

- RLWD Ditch 10 (RLWD Project #161).
  A local landowner mows this ditch and most of the right-of-way, bales it and uses it for hay. No spraying was done to this ditch this year. The District again had the bottom of this ditch mowed late in the year to remove some woody vegetation and cattails that were starting to grow in the bottom of the ditch. Inspection of the rock shoot was completed after the spring runoff for any damage from frost or water erosion. Inspection of the wetland mitigation site that was part of the ditch project was completed again in mid May, probing and staking the wetland boundary was performed. Staff from the District, Army Corp of Engineers, and BWSR visited the site (5th time) this year to check on wetland plants, hydrology, size of the wetland and the upland buffer area, and for any erosion. A landowner called about a side water inlet pipe and trap that was damaged from mowing. The pipe had to be trimmed off and the trap had to be replaced because it was totally destroyed.

Rock chute at the outlet of RLWD Ditch #10

- RLWD Ditch 3 (RLWD Project #7).
  Mowing of this ditch and its right-of-way was completed in July. Spraying for cattails was completed on September 5th on 2.11 miles out of the 5 miles in this ditch system. The District worked together with the Red Lake County Soil and Water Conservation District in obtaining a grant for the installation of nine side water inlet pipes with traps for this ditch system. The purpose of the side water inlet pipes is for erosion control and also to reduce flooding. The side water inlet pipes and traps were installed at the end of September. Another grant application for an additional 16 side water inlet pipes and traps, with the possible installation in 2012 will be applied for.

One of several new Side Water Inlet pipes installed in RLWD 3

- RLWD Ditch 1 Lateral A (RLWD Project #115).
  Mowing of this ditch and its right-of-way was completed in July. Spraying for cattails was completed on September 5th on 1.93 miles out of the 3.0 miles in this ditch system. Some of the land on this system came out of the CRP program this year and the landowner inadvertently plowed up the right of way. District staff talked with landowner about reseeding the permanent buffer strip the next year. The landowner planted corn on this field and had used chemical that would kill grass if planted in 2011. This area will be reseeded in 2012 by June 15th. District staff will measure out the right of way and install permanent right of way stakes.

- RLWD Ditch 7 (RLWD Project #20).
  Mowing of this ditch and its right-of-way was completed in July with more rocks being encountered by the mower again this year, even after having picked some rocks the year before. Spraying for cattails was completed on September 5th on 2.11 miles out of the 12.6 miles in this ditch system. One small old beaver dam was dug out by hand next to a large culvert. Additional right of way stakes were installed this summer on the area that was cleared last winter. The District worked together with the Red Lake County Soil and Water Conservation District and secured a grant for the installation of a number of side water inlet pipes, with traps, in the part of this ditch system that is in Red Lake County, they will be installed in the summer of 2012. The purpose of the side water inlet pipes is for erosion control and also to reduce flooding. Locations for side water inlet pipes were selected and surveyed this summer and fall. The pipes have been designed and installation is scheduled for the summer of 2012. The District will also be working with the East Polk Soil and Water Conservation District to try to obtain funding for a number of side water inlet pipes on the upper reaches of this ditch system.

Polk County

- RLWD Ditch 8 (RLWD Project #36).
  Mowing of this ditch and its right-of-way was completed in late July. No spraying for cattails was needed in this ditch system this year.

- Krostue Petition (RLWD Project #53).
  Mowing of this ditch and its right-of-ways were completed in early July. No spraying for cattails was needed in this ditch system this year.

- Kenny Johnson Petition, RLWD Project #117).
  Mowing of this ditch and its right-of-way was completed in mid July. Spraying for cattails was completed on August 27th on .58 miles out of the 2.75 miles in this ditch system. Sediment was removed from the outlet end of a number of side water inlet pipes. New right of way stakes had to be installed on ¾ of a mile of this ditch. Right of way violations were discovered in late November at two locations in this ditch system. Landowners were sent letters with a map identifying the areas with a June 15th deadline to have these areas back in compliance or the District will reestablish these areas and charges will be accessed to the landowners taxes.

- Polk County Ditch Improvement (RLWD Project #119).
  Mowing of this ditch and its right-of-way was completed in early July. Spraying for cattails was completed in August 25th on 9.06 miles out of the 12.7 miles in this ditch system. Traps were installed on a number of side inlet pipes on one mile of this system, to prevent water from backing out of the ditch and running into a ditch that belongs to the Sand Hill Watershed District. Right-of-way violations were discovered at four locations in this ditch system in late November. Landowners were identified and a letter was sent with a map identifying the areas. Landowners have a June 15th deadline to have these areas back in compliance or the District will re-establish these areas and charges will be accessed to their taxes.

Right of Way violation of the permanent grass buffer strip, Polk County Ditch Improvement Project #119

- Scott Baatz Petition (RLWD Project #123).
  Mowing of this ditch and its right-of-way was completed in July. No spraying for cattails was needed in this ditch system this year.

- Louisville/Parnell Impoundment (RLWD Project #121).
  Mowing of all inlet and outlet ditches and right-of-way was completed by a local landowner and the District in July. Spraying for cattails was needed on parts of the inlet and outlet ditches of this project this year. Spraying was completed on September 5th totaling 3.82 miles.

- Polk County Ditch 63 (RLWD Project #134)
  Mowing of this ditch and its right-of-ways were completed in early July. Spraying for cattails was not needed on this ditch system this year.

- Polk County Ditch 33 (RLWD Project #135)
  Mowing of this ditch and its right-of-ways were completed in early July. Spraying for cattails was completed on September 5th on 1.62 miles out of the 4.5 miles of this ditch system this year. Right-of-way violations were discovered on three areas. Landowners were identified and a letter was sent with a map identifying the areas. Landowners have a June 15th deadline to have these areas back in compliance or the District will reestablish these areas and charges will be accessed to their taxes.

- RLWD Ditch 11(RLWD Project #166)
  Part of this ditch system is still being mowed by a local landowner and is being used for hay, with the remainder of the ditch being mowed by the District. Mowing was completed in mid-August. No spraying for cattails was needed in the 6.30 miles in this ditch system this year. In November, it was discovered that someone had damaged six traps while mowing the ditch bottom in the upper end of this ditch system. Investigation into who damaged these traps is still ongoing.

- Burnham Creek (RLWD Project #43B)
  Mowing of this ditch and its right-of-ways were completed in early July. More rocks and debris were encountered when this ditch was mowed, more rocks will need to be picked on this ditch system next year. No spraying for cattails was needed on the 14 miles of this ditch system this year. Three beaver and one beaver dam were removed from Section 10 of Russia Township that had water backing up into Sections 11 and 14, Russia Township. Spoil from last year's cleaning

was leveled and reseeded to grass. Several areas of willows and silt deposits have been identified, most of them being at the inlet and outlet ends of the road crossings pipes. These areas are restricting the flows into and out these pipes and will be removed this coming summer as water flows permit.

Area of sediment and willows to be cleaned out of Burnham Creek

- RLWD Ditch #12 (RLWD Project #169)
  Mowing of the ditch and its right-of-way was completed in early July where it was needed, as some landowners mow parts of this ditch system. Four side water inlet pipes were found damaged after mowing was completed, the mowing contractor was notified and arrangements were made to have them fixed as soon as possible. No spraying for cattails was needed in this ditch system this year. Two beaver and one beaver dam were removed in Section 22, Bygland Township. Snow had to be removed from Branch 1 at the end of March to eliminate the possible flooding of two building sites. A landowner on Branch 2 called a week later and was concerned that water was getting quite high, so the District removed some snow to allow the water to flow.

Pennington County

- Arveson Ditch (RLWD Project #109)
  Mowing of the ditch and its right-of-ways were completed in early August. Spraying for cattails was completed on September 5th on .62 miles out of the 2.20 miles in this ditch system.

- Challenger Ditch (RLWD Project #122)
  Mowing of the ditch and its right-of-way was completed in early August. No spraying for cattails can be done by the helicopter in this ditch because of its location. Removal of some trash and litter from around the outlet structure was completed this year. Pennington County will try to spray cattails with their 4 wheeler sprayer.

- RLWD Ditch 13 (RLWD Project #170A)
  Construction of this ditch system was started in late June and was completed in late October, with no real delays. Area landowners are happy that it is constructed and are waiting for spring to see how good it works. The ditch system is 2.10 miles long. For more details see new projects in this report.

Preparing bed to install a field crossing

Ditch work completed and seeded and mulched

Beltrami County

- RLWD Ditch 9 (RLWD Project #39)
  This ditch was mowed for both brush and weeds in late September by a local farmer. Cattail spraying was not needed again this year.

Marshall County

- State Ditch 83 (RLWD Project #14)
  Mowing was completed in July on the access trail and all of the other areas of this ditch system that the District has been working on over the past 8 years. A few areas could not be reached due to the slumping of the ditch bank making it to dangerous or impossible to get beyond these areas with equipment. The District staff again inspected the channel of State Ditch 83 by four wheeler and pickup truck this year and found that no removal of fallen trees would be required. A number of areas that need to be cleaned and widened out were located and staked for this year's construction season, providing the water gets to "manageable" level.

  The District staff and the help of a local contactor aided by a small backhoe, cleaned out two large log jams along with other debris that had piled up in front of a bridge that is located on the north edge of Agassiz Wildlife Refuge that was restricting the flow of water in State Ditch 83.

  An access trail was completed for a distance of 6,325 feet up to Marshall County Road 12. This trail is along the east side of the ditch and was cleared of all brush and trees with the top of the old spoil bank being leveled off. This will now serve as an access and inspection trail. Side water inlet pipes with flap gates of various sizes that needed to be replaced due to rusting out were installed at seven different locations. A landowner requested new flap gates for some pipe through the old spoil bank that were leaking. All areas that were disturbed were seeded back to grass and then mulched. A gate was installed just off of Marshall County Road 12. This was done at the request of the landowner to try and help keep people off of the access trail as it is on private property.

Removing log jam from the bridge

Cleaning sediment bar from Ditch 83

To date there have been 63 sites cleaned in State Ditch 83 for a total construction cost of $ 246,051.

Year	Sites Completed	Construction Cost
2003	5	$ 17,924.00
2004	High water levels	$ 0.00
2005	7	$ 39,033.00
2006	11	$ 36,004.00
2007	16	$ 42,144.00
2008	11	$ 34,450.00
2009	7	$ 41,574.00
2010	High water levels	$ 0.00
2011	6	$ 41,400.00
Total	**63**	**$252,529.00**

Legal Drainage Systems under jurisdiction of Red Lake Watershed District

The District at present has jurisdiction of approximately 297.93 miles of legal drainage systems throughout the Watershed. The list of all the systems is shown below.

Ditch #	County	Length (mi.)
Red Lake River	Clearwater, Pennington	27.0
Clearwater River	Clearwater, Polk, Pennington, Red Lake	48.0
Lost River	Clearwater, Polk, Red Lake	43.3
RLWD Ditch #9	Beltrami	1.0
State Ditch #83	Marshall, Beltrami	22.0
Clifford Arveson Ditch	Pennington	2.2
RLWD Ditch 13	Pennington	2.1
Challenger Ditch	Pennington	0.32
RLWD Ditch #10	Red Lake	4.76
Equality/RLWD Ditch #1	Red Lake	2.25
RLWD Ditch #3	Red Lake	5.0
RLWD Ditch #1 lat A, B,	Red Lake, Polk	6.5
RLWD Ditch #7	Red Lake, Polk	12.6
Main Judicial Ditch #2	Clearwater	2.25 (e)
Judicial Ditch #2A	Clearwater	5.25
Judicial Ditch #4	Clearwater	3.6
Judicial Ditch #5	Clearwater	2.75
County Ditch #1	Clearwater	5.5
Judicial Ditch 2 B & C	Clearwater	5.6
Winsor-Hangaard	Clearwater, Polk	13.9
Judicial Ditch #72	Clearwater, Polk	16.0
RLWD Ditch #8	Polk	2.0
RLWD Ditch #11	Polk	6.5
RLWD Ditch #12	Polk	17.5
Polk County Ditch #63	Polk	3.0
Polk County Ditch #33	Polk	4.5
Polk County Ditch Improv.	Polk	12.7
Burnham Creek	Polk	14.0
Krostue Petition	Polk	1.6
Kenneth Johnson Petition	Polk	2.75
Scott Baatz Petition	Polk	1.5
Total Miles of Ditches		**297.93**

Projections for 2012

The basic activities of the District are expected to continue in 2012 much as they did in 2011. It is expected that the District will proceed with the development and construct a portion of the Clearbrook Stormwater Retention Project, continue with Grand Marais Outlet Restoration Project which includes completing the land easement acquisitions and construction of the stabilization of the Cut Channel portion of the project

In August of 2011, a public hearing was held concerning the proposed 2012 General Fund budget. Notice of the hearing and the proposed budget were published as required by Minnesota State Statutes. The General Fund budget was adopted and the levies were set for 2012. The General Fund levy was set at $180,475.

Work will continue on the many tasks of the first phases of the Thief River and Red Lake River Watershed Assessment Projects (WRAPs) in 2012. Phase II work plans will be developed and submitted to the MPCA for approval.

Sampling for the District's long-term monitoring program will take place in April, June, August, and October of 2012. Additional sites will be added in order to monitor the effects of water quality improvement projects. The RLWD will add the CR64 crossing of Grand Marais Creek to its routine to help characterize water quality in Grand Marais Creek prior to the completion of the Grand Marais Creek Outlet Restoration project. The RLWD will also be adding a site on the North Cormorant River in Shooks Township in Beltrami County in order to assess the impact of a project that should help reduce E. coli levels in that river.

In 2012, the Red Lake River and Grand Marais Creek Watersheds were targeted for the MPCA's 10X intensive watershed monitoring program. This monitoring will include the collection of data for most of the MPCA's assessment criteria, including biological data. The District has been awarded Surface water Assessment Grant (SWAG) to assist with the water quality monitoring for the 10x program. Marshall County, Pennington County, Red Lake County, and International Water Institute staff will conduct most of the sampling and the District will administer the grant. The MPCA 10x monitoring program will target the Red Lake River and Grand Marais Creek watersheds in 2012. Thief River SWAG/10X monitoring that began in 2011 will continue in 2011.

The District has been awarded a Clean Water Fund grant from the BWSR for the Grade Stabilization for Reduction of Sedimentation in the Thief River. This project will install six rock riffle grade stabilization structures along the lower two and a half miles of Marshall County Ditch 20 (CD20), stabilize a section of the CD20 stream bank, and install two side-inlet structures along that lower reach of CD20. The District was awarded $187,974 for the project, which has a total budget of $235,049. Construction is planned to be completed in 2012.

The Silver Creek draft E. coli TMDL reports may go through the public notice and EPA approval phases in 2012. TMDLs are typically open for public comment for 30 days. If extensive changes are made, they may be re-public noticed. When that phase is completed, the TMDL is submitted to the EPA.

RLWD staff will continue to provide technical support for the River Watch program and participate in public education opportunities.

Stage and flow monitoring will be conducted within the Clearwater River watershed in Silver Creek, Lower Badger Creek, Hill River, Lost River upstream of Pine Lake, and Ruffy Brook in preparation for future TMDLs.

Financial Report

Red Lake Watershed District
Management Discussion and Analysis

MANAGEMENT'S DISCUSSION AND ANALYSIS

As management of the Red Lake Watershed District, we offer readers of the Red Lake Watershed District's financial statements this narrative overview and analysis of the financial activities of the District for the fiscal year ended December 31, 2011. We encourage readers to consider the information presented here in conjunction with the District's basic financial statements following this section.

Financial Highlights

- The assets of Red Lake Watershed District exceeded its liabilities at the close of the recent fiscal year by $12,319,861 (Net assets). Of this amount, $4,269,442 (unrestricted net assets) may be used to meet the government's ongoing designations and fiscal policies.
- The Districts total net assets increased by $1,809,407.
- As of the close of the current fiscal year, Red Lake Watershed District's governmental funds reported combined ending fund balance was $4,269,442. This total amount is designated or reserved through legal restrictions and board member authorization.
- At the end of the current fiscal year the general fund balance of $294,705 of which all was unassigned.

Overview of the Financial Statements

The discussion and analysis are intended to serve as an introduction to the Red Lake Watershed District's basic financial statements. The District's basic financial statements comprise three components: 1) government-wide financial statements, 2) fund financial statements, and 3) notes to the financial statements. This report also contains other supplementary information in addition to the basic financial statements themselves.

Basis of Accounting. The District has elected to present its financial statements on a modified cash basis of accounting. The modified cash basis of accounting is a basis of accounting other than generally accepted accounting principles. Basis of accounting is a reference to when financial events are recorded, such as the timing for recognizing revenues, expenses, and their related assets and liabilities. Under the District's modified cash basis of accounting, revenues, and expenses and related assets and liabilities are recorded when they result from cash transactions, except for the recording of depreciation expense on the capital assets in the government-wide financial statements.

As a result of the use of the modified cash basis of accounting, certain assets and their related revenues (such as accounts and taxes receivable and related revenue not collected yet) and certain liabilities and their related expenses (such as accounts payable and expenses for goods or services received but not paid yet) are not recorded in these financial statements. Therefore when reviewing the financial information and discussion within this annual report, the reader should keep in mind the limitations resulting from the use of the modified cash basis of accounting.

Government-Wide Financial Statements. The government-wide financial statements are designed to display information about the Red Lake Watershed District taken as a whole.

Over time, increased or decreased in net assets – modified cash basis may serve as a useful indicator of whether the financial position of the Red Lake Watershed District is improving or deteriorating.

The government-wide financial statements can be found on pages 9 and 10 of this report.

Fund Financial Statements. The fund financial statements focus on the individual parts of the District. A fund is a grouping of related accounts that is used to maintain control over resources that have been segregated for specific activities or objectives. Red Lake Watershed District, like other state and local governments, uses fund accounting to ensure and demonstrate compliance with finance-related legal requirements. All the funds of Red Lake Watershed District are governmental funds.

All governmental funds utilize a "current financial resources" measurement focus. Only current financial assets and liabilities are generally included on their balance sheets. Their operating statements present sources and uses of available spendable financial resources during a given period. These funds use fund balance as their measure of available spendable financial resources at the end of the period.

Red Lake Watershed District maintains three individual major governmental funds. Information is presented separately in the governmental fund balance sheet and in the governmental fund statement of revenues, expenditures, and changes in fund balances for the General Fund, Special Revenue Fund, and the Administrative Construction/Capital Projects Fund, which are considered to be major funds.

Red Lake Watershed District adopts an annual appropriated budget for its General Fund for Statutory/Management purposes.

The basic government fund financial statements can be found on pages 9 through 13 of this report.

Notes to the financial statements. The notes provided additional information that is essential to a full understanding of the data provided in the government-wide and fund financial statements. The notes to the financial statements can be found on pages 14 through 24 of this report.

Financial Analysis of the Watershed District

As noted earlier, net assets – modified cash basis may serve over time as a useful indictor of a government's financial position. In the case of the Red Lake Watershed District, assets exceeded liabilities by $12,319,861 by the close of the most recent fiscal year, which is an increase of $1,809,407 over the prior year; more than a 17% increase over the prior year.

A portion of Red Lake Watershed District's net assets ($8,050,419 or 65%) reflects its investment in capital assets less any related debt to acquire those assets that are still outstanding. Red Lake Watershed District uses these capital assets to provide services to citizens; consequently, these are not available for future spending. Although Red Lake Watershed District's investment in its capital assets is reported net of related debt, it should be noted that the resources needed to repay this debt must be provided from other sources, since the capital assets themselves cannot be used to liquidate these liabilities.

RED LAKE WATERSHED DISTRICT'S NET ASSETS – MODIFIED CASH BASIS

	2011	2010
ASSETS		
Total current assets	$ 4,269,442	$ 2,838,607
Net capital assets	8,050,419	7,671,847
TOTAL ASSETS	$ 12,319,861	$ 10,510,454
NET ASSETS	$ 12,319,861	$ 10,510,454

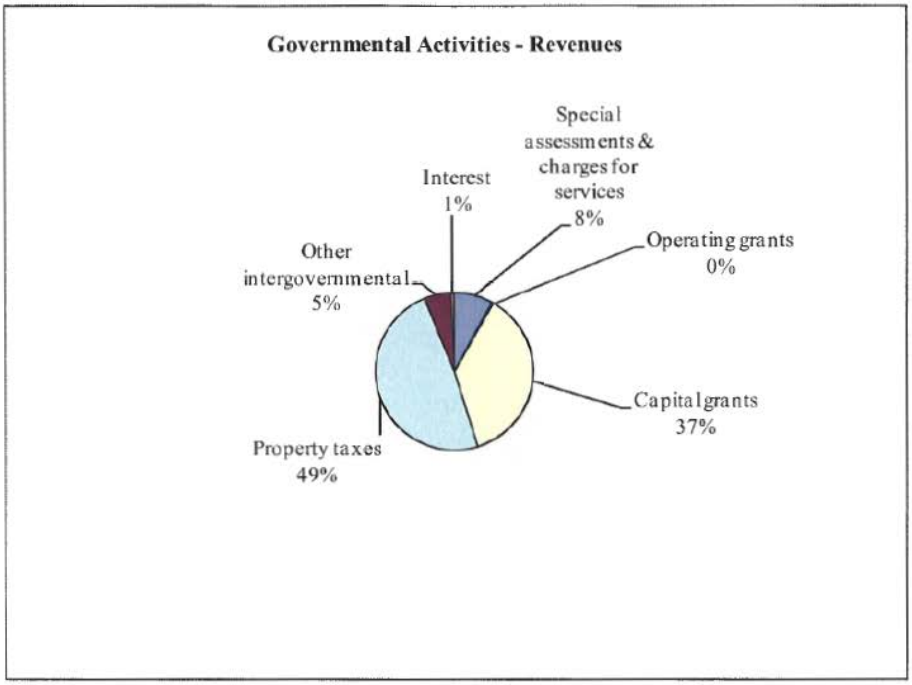
At the end of 2011 and 2010, the Red Lake Watershed District is able to report positive balances in net assets.

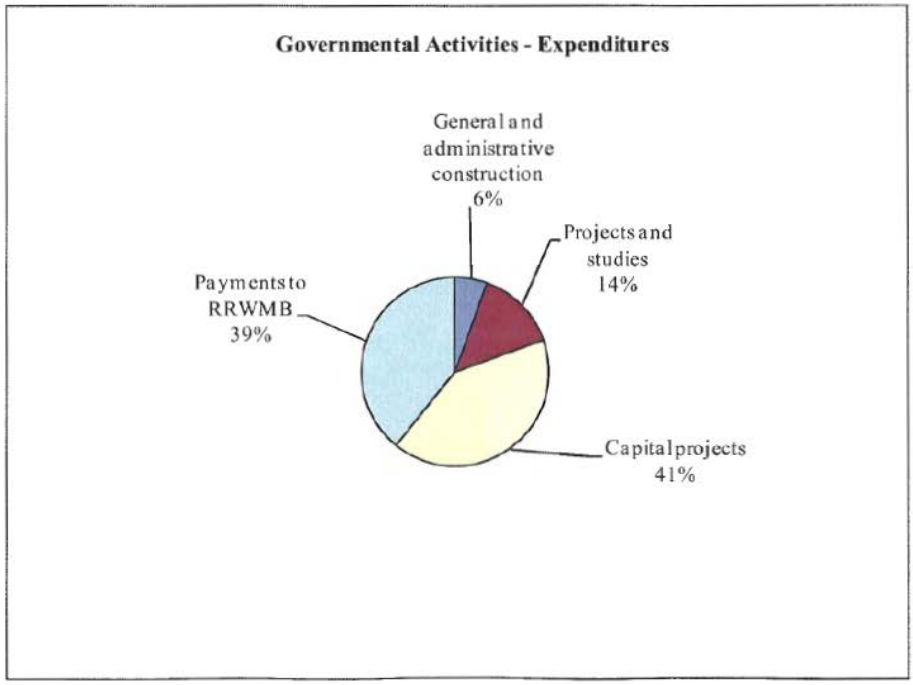
RED LAKE WATERSHED DISTRICT'S CHANGE IN NET ASSETS – MODIFIED CASH BASIS

Governmental activities resulted in an increase of Red Lake Watershed District's net assets from the fiscal year 2010 to the fiscal year 2011 in the amount of $1,809,407. The details of the increase are as follows:

	2011	2010
REVENUES		
Special assessments and charges for services	$ 405,228	$ 188,493
Operating grants	16,000	16,000
Capital grants	1,881,331	465,547
General revenues:		
Property taxes	2,481,415	2,080,919
Other intergovernmental	275,507	216,035
Interest	37,650	54,674
TOTAL REVENUES	5,097,131	3,021,668
EXPENSES		
General and administration construction	181,175	641,237
Ongoing projects and studies	457,792	97,972
Capital projects	1,359,641	769,447
Payments to RRWMB	1,289,116	1,073,323
TOTAL EXPENSES	3,287,724	2,581,979
CHANGE IN NET ASSETS	$ 1,809,407	$ 439,689

Below are specific graphs which provide comparisons of the governmental activities revenues and expenditures for the year ended December 31, 2011:





Financial Analysis of the Government's Funds

At the end of the current fiscal year, Red Lake Watershed District's governmental funds reported combined ending fund balances of $4,269,442. The total fund balance can be attributed to 1) General Fund, $294,705; 2) Capital Projects Fund, $4,280,451; as well as Special Revenue Fund with a deficit fund balance of ($305,714).

The general fund increased by $60,303 in 2011, which was due to higher net increases in general revenues over expenses than was originally expected in the budget. The general fund cash balance remained relatively unchanged, however. The board voted to annually allocate the remaining revenue over expenses in the general fund budget to the capital projects fund until all monies borrowed for the new building are paid. The remaining balance of the new watershed district building is reflected on page 20, interfund balances.

Budgetary Highlights

General Fund. The General Fund exceeded budgeted revenues and had expenditures below the budgeted amounts for the year ended December 31, 2011.

Capital Asset and Debt Administration

Capital assets. Red Lake Watershed District's investment in capital assets for its governmental activities as of December 31, 2011, amounts to $8,050,419 (net of accumulated depreciation). This investment in capital assets consists of building, equipment, and infrastructure assets necessary for the District to carryout watershed and conservation management within its service area.

Red Lake Watershed District's Capital Assets
(Net of Depreciation)

	2011			2010
	Cost	Accumulated Depreciation	Cost Less Accumulated Depreciation	Cost Less Accumulated Depreciation
Building and improvements	$ 762,888	$ 139,488	$ 623,400	$ 655,139
Infrastructure improvements	6,235,119	904,078	5,331,041	5,400,680
Engineering equipment	417,302	280,049	137,253	145,189
Office equipment	108,588	61,777	46,811	33,059
Land & permanent easements	1,567,050	-	1,567,050	1,437,780
Construction in progress	344,864	-	344,864	-
Total	$ 9,435,811	$ 1,385,392	$ 8,050,419	$ 7,671,847

Other Items of Interest. Construction was completed to RLWD Project No. 170A, lateral to Pennington County Ditch #75. Following construction the ditch system was renamed RLWD Ditch No. 13. Funding for this project was paid for by the Special Revenue Fund (benefitted landowners).

The final hearing for the Thief River Falls Flood Damage Project (TRF FDR), RLWD Project 171A, and Improvement of Pennington County Ditch #1, RLWD Project #171, was held in the fall of 2011. Bid opening for the construction of the two projects is scheduled in early 2012 with construction expected to be completed in the summer of 2012. Funding for the TRF FDR Project is to be paid in part by a Minnesota Flood Damage Reduction Grant, matched by the Red Lake Watershed District using Capital Projects funds, and funding for the establishment of a Water Management District will be paid from Special Revenue Fund.

Construction of the Clearbrook Stormwater Retention Pond, RLWD Proj. No. 160, has been delayed due to overly wet conditions. It is anticipated that with the drier conditions in the fall/early winter of 2011 (or a relocation of the retention pond), the project could be resumed and completed in 2012. This project will be funded from the Capital Projects Fund.

Late in 2011, Plans and specifications were developed for the construction of Marshall County Ditch #20 Grade Stabilization/State Ditch No. #83, RLWD Project No. 14D. This project will reduce sediment loads presently coming from CD #20 and settling into SD #83. A portion of the project will be funded through a grant received from the Board of Water and Soil Resources Clean Water Competitive Grant, Marshall County Ditch Authority, with remaining funds being paid from the Special Revenue Fund. Bids will be opened in early 2012 with construction completion anticipated in the summer of 2012.

The RLWD also was approved for a grant from the Board of Water and Soil Resources Clean Water Competitive Grant for a project referred to as Grand Marais Cut Channel Stabilization Project, RLWD Project 60FF. This project is intended to reduce sediment loads in the Red River of the North. The final engineer's report completed, informational meetings held, and bid opening are expected to be completed early in 2012, with construction to be concluded in the summer of 2012. The remaining expenditures will be from the Capital Projects Fund.

Water Quality grants from the State of Minnesota, Minnesota Pollution Control Agency, for Surface Water Assessment Grants, Watershed Assessment Projects (watershed based TMDL), and others are ongoing. Expenses over and above the grants are expended from the Capital Projects Fund.

More details of the 2011 construction, maintenance, and ongoing water quality programs of Red Lake Watershed District are included in the 2011 Annual Report or by contacting the Red Lake Watershed District.

Requests for information. This financial report is designed to provide a general overview of Red Lake Watershed District's finances for all those with an interest in the government's finances. Questions concerning any of the information provided in this report or requests for additional financial information should be addressed to the Red Lake Watershed District, 1000 Pennington Avenue South, Thief River Falls, Minnesota 56701.

RED LAKE WATERSHED DISTRICT
THIEF RIVER FALLS, MINNESOTA
STATEMENT OF NET ASSETS - MODIFIED CASH BASIS
DECEMBER 31, 2011

ASSETS	
Current Assets:	
Petty cash	$ 100
Pooled cash and investments	4,269,342
Total Current Assets	4,269,442
Capital Assets:	
Property and equipment	9,435,811
Less: accumulated depreciation	(1,385,392)
Net Capital Assets	8,050,419
TOTAL ASSETS	12,319,861
NET ASSETS	
Investment in capital assets, net of related debt	8,050,419
Unrestricted	4,269,442
TOTAL NET ASSETS	$ 12,319,861

See accompanying notes to the basic financial statements.

RED LAKE WATERSHED DISTRICT
THIEF RIVER FALLS, MINNESOTA
STATEMENT OF ACTIVITIES - MODIFIED CASH BASIS
FOR THE YEAR ENDED DECEMBER 31, 2011

	Expenses			Program Revenues			Net (Expenses) Revenues and Changes in Net Assets
FUNCTION/PROGRAMS	Direct	Allocated Salaries & Overhead	Total	Special Assessments and Charges for Services	Operating Grants and Contributions	Capital Grants and Contributions	Governmental Activities
General and administrative construction	$ (713,233)	$ 532,058	$ (181,175)	$ 2,008	$ -	$ -	$ (179,167)
Ongoing projects and studies	(356,169)	(101,623)	(457,792)	372,404	16,000	130,136	60,748
Capital projects	(929,206)	(430,435)	(1,359,641)	30,816	-	1,751,195	422,370
Payments to RRWMB	(1,289,116)	-	(1,289,116)	-	-	-	(1,289,116)
Allocated interest	(13,597)	-	(13,597)	-	-	-	(13,597)
Total Governmental Activities	$ (3,301,321)	$ -	$ (3,301,321)	$ 405,228	$ 16,000	$ 1,881,331	(998,762)
General Revenues:							
Tax levies							2,481,415
Intergovernmental, (not restricted to specific programs)							
State MV and disparity reduction credits							275,507
Allocated interest							51,247
Total General Revenue							2,808,169
Changes in Net Assets							1,809,407
Net Assets - Beginning							10,936,334
Prior period adjustment							(425,880)
Net Assets - Ending							$ 12,319,861

See accompanying notes to the basic financial statements.

RED LAKE WATERSHED DISTRICT
THIEF RIVER FALLS, MINNESOTA
BALANCE SHEET - MODIFIED CASH BASIS
GOVERNMENTAL FUNDS
DECEMBER 31, 2011

	General	Special Revenue Fund	Capital Project Fund	Total
ASSETS				
Petty cash	$ 100	$ -	$ -	$ 100
Pooled cash and investments	378,235	-	3,891,107	4,269,342
Due from other funds	-	-	389,344	389,344
TOTAL ASSETS	$ 378,335	$ -	$ 4,280,451	$ 4,658,786
LIABILITIES				
Due to other funds	$ 83,630	$ 305,714	$ -	$ 389,344
TOTAL LIABILITIES	83,630	305,714	-	389,344
FUND BALANCE				
Spendable:				
Committed for Capital Project	-	-	4,280,451	4,280,451
Unassigned	294,705	(305,714)	-	(11,009)
TOTAL FUND BALANCES	294,705	(305,714)	4,280,451	4,269,442
TOTAL LIABILITIES AND FUND BALANCE	$ 378,335	$ -	$ 4,280,451	$ 4,658,786

Amounts reported from governmental activities in the Statement of Net Assets are different because:

Total fund balance per Balance Sheet, from above		$ 4,269,442
When capital assets (land, building, equipment and infrastructure) that are to be used in governmental activities are purchased or constructed, the costs of those assets are reported as expenditures in governmental funds. However,the statements of net assets includes those capital assets among the assets of the District as a whole.		
	Cost of capital assets	9,435,811
	Accumulated depreciation	(1,385,392)
Total Net Assets		$ 12,319,861

See accompanying notes to the basic financial statements.

RED LAKE WATERSHED DISTRICT
THIEF RIVER FALLS, MINNESOTA
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
MODIFIED CASH BASIS - GOVERNMENTAL FUNDS
FOR THE YEAR ENDED DECEMBER 31, 2011

	General	Special Revenue Fund	Capital Project Fund	Total
REVENUES				
Tax levies	$ 178,689	$ -	$ 2,302,726	$ 2,481,415
Intergovernmental				
Federal	-	-	663,612	663,612
State	-	16,000	1,312,098	1,328,098
Local	-	130,136	50,992	181,128
Special assessments	-	314,206	-	314,206
Miscellaneous	2,008	58,198	30,816	91,022
Allocated interest	6,622	2,332	42,293	51,247
Total Revenues	187,319	520,872	4,402,537	5,110,728
EXPENDITURES				
General and administrative construction	123,170	-	-	123,170
Ongoing projects and studies	-	668,671	-	668,671
Capital projects	-	-	1,585,339	1,585,339
Payments to RRWMB	-	-	1,289,116	1,289,116
Allocated interest	3,846	4,966	4,785	13,597
Total Expenditures	127,016	673,637	2,879,240	3,679,893
Revenues Over (Under) Expenditures	60,303	(152,765)	1,523,297	1,430,835
OTHER FINANCING SOURCES (USES)				
Transfers in	508,333	5,412	532,738	1,046,483
Transfers out	(508,333)	(5,196)	(532,954)	(1,046,483)
Net Other Sources (Uses)	-	216	(216)	-
Revenues & Other Sources Over (Under) Expenditures & Other Uses	60,303	(152,549)	1,523,081	1,430,835
Fund Balance (Deficit), January 1	234,402	(153,165)	2,757,370	2,838,607
Fund Balance (Deficit), December 31	$ 294,705	$ (305,714)	$ 4,280,451	$ 4,269,442

See accompanying notes to the basic financial statements.

RED LAKE WATERSHED DISTRICT
THIEF RIVER FALLS, MINNESOTA
RECONCILIATION OF CHANGE IN FUND BALANCES OF GOVERNMENTAL FUNDS
TO THE STATEMENT OF ACTIVITIES
FOR THE YEAR ENDED DECEMBER 31, 2011

Net Change in Fund Balances - Total Governmental Funds	$ 1,430,835
Governmental funds report capital outlay as expenditures, while governmental activities report depreciation expense allocating those expenditures over the life of the asset:	
Capital additions	717,265
Depreciation expense	(338,693)
Change in Net Assets - Governmental Activities	$ 1,809,407

See accompanying notes to the basic financial statements.

NOTE 4. CAPITAL ASSET

Capital assets activity resulting from modified cash basis transactions for the year ended December 31, 2011, was as follows:

	Beginning Balance	Adjustments	Additions	Deletions	Ending Balance
Capital Assets					
Building and Improvements	$ 762,888	$ -	$ -	$ -	$ 762,888
Infrastructure improvments	6,498,253	(443,266)	180,132	-	6,235,119
Engineering equipment	402,916	-	41,762	(27,376)	417,302
Office equipment	87,790	-	22,556	(1,758)	108,588
Land & permanent easements	1,437,780	-	129,270	-	1,567,050
Construction in progress	-	-	344,864	-	344,864
Total	$ 9,189,627	$ (443,266)	$ 718,584	$ (29,134)	$ 9,435,811

	Beginning Balance	Adjustments	Additions	Deletions	Ending Balance
Accumulated Depreciation					
Building and improvements	$ 107,749	$ -	$ 31,739	$ -	$ 139,488
Infrastructure improvements	671,693	(17,386)	249,771	-	904,078
Engineering equipment	257,727	-	48,956	(26,634)	280,049
Office equipment	54,731	-	8,227	(1,181)	61,777
Total	1,091,900	(17,386)	338,693	(27,815)	1,385,392
Net Capital Assets	$ 8,097,727	$ (425,880)	$ 379,891	$ (1,319)	$ 8,050,419

Depreciation expense of $379,891 for the year ended December 31, 2011 is included in general and administrative program costs.

NOTE 5. OVERHEAD COST ALLOCATION

Overhead costs are allocated to all projects at 150% of direct salaries charged to projects. Overhead costs represent those costs incurred by the District for administration, employee benefits, engineering, and related operating expenditures, which are not charged directly to the project. The total overhead costs charged to projects in 2011 were $532,058.

RED LAKE WATERSHED DISTRICT
THIEF RIVER FALLS, MINNESOTA
SCHEDULE OF CHANGES IN FUND BALANCES - MODIFIED CASH BASIS
FOR THE YEAR ENDED DECEMBER 31, 2011

		Revenues				Expenditures			Transfers	
	Fund Balance (Deficit) January 1	Assessments and Other Charges for Services	Operating / Capital Grants and Contributions	Allocated Interest Earned	Taxes	Direct	Allocated Interest Charged	Salary & Overhead Allocation	In (Out)	Fund Balance (Deficit) December 31
GENERAL FUND	$ 234,402	2,008	-	6,622	178,689	655,228	3,846	(532,058)	-	$ 294,705
SPECIAL REVENUE FUND JOBS:										
Branch A & 1, J.D. #2	5,463	-	-	56	-	160	-	244	-	5,115
Burnham Creek channel	3,356	19,442	-	53	-	7,385	-	3,755	-	11,711
Clearwater County ditch #1	413	-	-	5	-	-	-	-	-	418
Clearwater County joint ditch #1	(235)	-	-	-	-	-	2	-	-	(237)
Clearwater County joint ditch #4	991	-	-	10	-	-	-	-	-	1,001
Clearwater County joint ditch #5	(6,032)	882	-	-	-	1,410	83	1,937	-	(8,580)
Clearwater River project	27,422	-	-	287	-	-	-	50	-	27,659
Clearwater/Wild Rice River	6,437	5,499	-	86	-	350	-	1,929	-	9,743
Clifford Arveson ditch	1,673	1,976	-	15	-	1,055	-	121	-	2,488
Equality RLWD ditch #1, lat C	(2,124)	3,345	-	-	-	629	10	412	-	170
Improvement to Penn. Co. Dt. 1	(40,896)	-	-	-	-	62,557	812	15,204	-	(119,469)
J.D. ditch #72	(12,599)	18,016	-	-	-	1,347	73	937	-	3,060
K. Johnson petition	2,416	2,070	-	21	-	1,272	-	1,466	-	1,769
Krostue petition	1,351	5,753	-	59	-	1,190	-	198	-	5,775
Lateral Petition to Penn. CD #31	(23)	-	-	-	-	-	-	(23)	-	-
Lost River project	19,268	-	-	199	-	-	-	547	-	18,920
Main J.D. #2 and branch B & C	(17,556)	4,672	-	-	-	1,376	175	1,587	-	(16,022)
Main J.D. 2C. ECK	531	-	-	6	-	-	-	52	-	485
Pine Lake maintenance	414	4,201	-	10	-	421	-	2,414	-	1,790
Polk Cnty ditch #33 improvement	6,069	-	-	52	-	2,174	-	1,389	-	2,558
Polk Cnty ditch #63 improvement	(8,285)	16,557	-	-	-	765	21	431	-	7,055
Polk Cnty ditch #'s 104, 61, 47, 94	(7,912)	14,483	-	-	-	9,824	66	2,860	-	(6,179)
Red Lake River project	66,730	-	-	698	-	-	-	205	-	67,223
RLWD ditch #1	13,402	-	-	133	-	2,026	-	657	-	10,852
RLWD ditch #3	4,291	3,001	7,669	-	-	19,730	24	5,560	-	(10,353)
RLWD ditch #7	5,321	5,408	-	60	-	685	-	5,017	-	5,087
RLWD Ditch #8	(15,748)	1,628	-	-	-	2,611	168	51	-	(16,950)
RLWD Ditch #9	3,595	293	-	39	-	149	-	153	-	3,625
RLWD Ditch #10	(15,407)	6,418	-	-	-	674	136	778	-	(10,577)
RLWD Ditch #11	40,544	-	-	420	-	849	-	662	-	39,453
RLWD Ditch #12	(41,582)	15,199	-	-	-	7,284	364	2,974	5,196	(31,809)
RLWD Ditch #12 FEMA	3,760	-	1,436	-	-	-	-	-	(5,196)	-
RLWD Ditch #13 - project dismissed	(57,370)	57,370	-	-	-	-	216	-	216	-
RLWD Ditch #13	(39,431)	164,516	-	-	-	121,119	655	4,392	-	(1,081)
Scott Baatz petition	2,677	1,000	-	13	-	460	-	2,006	-	1,224
State ditch #83	4,722	15,740	16,000	73	-	42,655	-	8,160	-	(14,280)
TRF drainage ditch (Challenger Ditch)	3,645	6	-	37	-	315	-	-	-	3,373
Thief River Falls Flood Damage Reduction Proj.	(105,377)	-	121,031	-	-	272,926	2,092	34,223	-	(293,587)
Winsor/Hangaard/Clearwater County petition	(7,079)	4,929	-	-	-	3,650	69	1,275	-	(7,144)
Total Special Revenue	(153,165)	372,404	146,136	2,332	-	567,048	4,966	101,623	216	(305,714)

RED LAKE WATERSHED DISTRICT
THIEF RIVER FALLS, MINNESOTA
SCHEDULE OF CHANGES IN FUND BALANCES - MODIFIED CASH BASIS

		Revenues				Expenditures			Transfers	
	Fund Balance (Deficit) January 1	Assessments and Other Charges for Services	Operating / Capital Grants and Contributions	Allocated Interest Earned	Taxes	Direct	Allocated Interest Charged	Allocated Salary & Overhead	In (Out)	Fund Balance (Deficit) December 31
CAPITAL PROJECT FUND JOBS:										
Administrative construction	2,836,255	-	275,507	35,147	2,302,726	1,289,116	475	-	(532,954)	3,627,090
Badger Creek / Poplar River	6,568	-	-	69	-	-	-	41	-	6,596
Bench Marks	-	-	-	-	-	-	-	64	64	-
Black River project	-	-	-	-	-	350	7	1,040	1,397	-
Burnham Creek	-	-	-	-	-	-	3	746	749	-
BWSR flood storage pilot project	-	-	-	-	-	-	2	370	372	-
C. Flage Erosion Cont.	-	-	-	-	-	-	-	41	-	(41)
Clearwater conservation	-	-	-	-	-	-	-	81	81	-
Clearwater public education (River Watch)	-	-	-	-	-	5,929	208	33,423	39,560	-
Clearwater River - TMDL	-	-	-	-	-	84	38	4,716	4,838	-
Clearwater River Dissolved Oxygen TMDL	-	-	-	-	-	-	1	336	337	-
Clearbrook Stormwater Pjt.	(13,366)	-	-	-	-	-	138	283	-	(13,787)
County Ditch 20/State Ditch 83	-	-	157,702	-	-	2,265	-	2,021	-	153,416
Culvert Sizing	-	-	-	-	-	-	31	7,749	7,780	-
Ditch 66 WQ Study	-	263	242,161	699	-	238,943	-	594	-	3,586
Elm Lake	-	-	-	-	-	-	3	425	428	-
Emergency maintenance	105,327	-	-	1,104	-	-	-	-	-	106,431
Erosion control projects	-	-	-	-	-	29,006	125	3,723	32,854	-
Farm to stream water quality	-	-	-	-	-	-	4	581	585	-
G.I.S.	-	200	-	-	-	553	96	19,694	20,143	-
Glacial ridge	3,895	-	-	-	-	-	40	540	-	3,315
Euclid East Impoundment	-	2,155	-	-	-	15,809	81	2,283	16,018	-
Brandt Channel Restoration	-	1,444	-	1	-	1,514	-	535	604	-
Grand Marais - Restoration	-	-	114,723	-	-	143,827	366	18,510	-	(47,980)
Grand Marais Cut Channel Stabilization	-	-	607,274	5,273	-	8,615	-	1,048	-	602,884
Brandt Impoundment	-	204	-	-	-	4,996	36	3,025	7,853	-
FEMA D-Firm Grant	(40,415)	-	419,857	-	-	406,282	747	6,140	6,887	(26,840)
Grand Marais Creek Subwatershed	(205)	-	3,521	-	-	8,726	38	3,067	5,961	(2,554)
Hydrologic analysis	-	-	-	-	-	300	112	18,180	18,592	-
Lost River impoundment	-	-	-	-	-	-	3	344	347	-
Louisville/Parnell project	-	372	-	-	-	2,282	12	1,505	3,427	-
LRRWMB - Technical Com	-	-	374	-	-	374	-	-	-	-
Maintenance dams	-	-	-	-	-	120	4	803	927	-
MAWD Summer Tour	-	5,844	-	-	-	8,395	178	23,624	26,353	-
Moose River project	-	-	-	-	-	8,040	78	4,534	12,652	-
North Parnell storage site	-	-	-	-	-	-	1	192	193	-
Parnell impoundment	-	2,400	156	-	-	6,686	36	4,940	9,106	-

RED LAKE WATERSHED DISTRICT
THIEF RIVER FALLS, MINNESOTA
SCHEDULE OF CHANGES IN FUND BALANCES - MODIFIED CASH BASIS

		Revenues				Expenditures			Transfers	
	Fund Balance (Deficit) January 1	Assessments and Other Charges for Services	Operating / Capital Grants and Contributions	Allocated Interest Earned	Taxes	Direct	Allocated Interest Charged	Allocated Salary & Overhead	In (Out)	Fund Balance (Deficit) December 31
CAPITAL PROJECT FUND JOBS (continued)										
Permits	-	-	-	-	-	6,032	399	84,656	91,087	-
Project Development	-	-	-	-	-	4,023	270	38,484	42,777	-
Red Lake Res./Good Lake	-	-	-	-	-	12,639	65	6,346	19,050	-
Red River Basin Long Term Flood Control	(10,001)	-	10,000	-	-	14,310	116	2,065	16,492	-
Red River Corridor	-	-	-	-	-	-	3	413	416	-
Red Lake River Watershed Assessment	-	-	-	-	-	9,689	22	3,366	-	(13,077)
Ring dike program -										
General	-	-	2,462	-	-	-	-	3,625	1,048	(115)
Christenson - RLWD	(9)	1,102	843	-	-	1,979	-	223	266	-
Hipscher - RLWD	-	-	-	-	-	-	-	-	-	-
Egeland - RLWD	(33)	-	375	-	-	501	-	-	159	-
Srnsky - NRCS	(1,759)	1,759	-	-	-	-	-	-	-	-
Wagner - NRCS	(22,014)	3,142	18,872	-	-	-	-	-	-	-
G. Peterson - NRCS	(8,436)	1,206	7,229	-	-	-	-	-	1	-
Gld. Stengl - NRCS	(24,441)	-	37,797	-	-	13,356	-	-	-	-
Liedberg	(57,210)	-	63,898	-	-	6,688	-	-	-	-
Vatnsdal	(4,298)	-	3,666	-	-	-	-	-	632	-
Stordahl	118	-	-	-	-	129	-	-	11	-
Radi	(3,636)	7,600	-	-	-	82,618	-	1,486	-	(80,140)
Adams	(91)	-	-	-	-	-	-	-	91	-
Bible Baptist Church	(19)	3,125	18,790	-	-	24,383	-	671	3,132	(26)
Stream gauging	-	-	-	-	-	10,502	245	28,615	39,362	-
Ten Year Overall Plan	-	-	-	-	-	19,554	223	8,586	28,363	-
Thief River TMDL	(1,231)	-	17,091	-	-	7,396	139	39,846	-	(31,521)
TR WS Sediment Investigation	-	-	-	-	-	-	5	1,237	1,242	-
TR SWAGG	-	-	19,531	-	-	23,327	54	2,936	-	(6,786)
Upper Lost River/Nassett Brook										
WQ Assessment Grant	(7,629)	-	4,873	-	-	-	58	1,171	3,985	-
Water Quality	-	-	-	-	-	22,015	292	35,432	57,739	-
Web Page Development	-	-	-	-	-	1,200	11	2,197	3,408	-
Wetland Banking	-	-	-	-	-	1,467	19	2,925	4,411	-
WS Ditch System Inventory & Mapping	-	-	-	-	-	-	1	957	958	-
Total Capital Projects	2,757,370	30,816	2,026,702	42,293	2,302,726	2,444,020	4,785	430,435	(216)	4,280,451
Total - All Funds	$ 2,838,607	405,228	2,172,838	51,247	2,481,415	3,666,296	13,597	-	-	$ 4,269,442

RED LAKE WATERSHED DISTRICT
THIEF RIVER FALLS, MINNESOTA
SCHEDULE OF DIRECT EXPENDITURES BY CLASSIFICATION - MODIFIED CASH BASIS
GOVERNMENTAL FUNDS
FOR THE YEARS ENDED DECEMBER 31, 2011 AND 2010

	2011	2010
DIRECT EXPENDITURES:		
Salaries -		
Inspection	$ 10,448	$ 4,683
Survey - preliminary	7,591	8,811
Survey - construction	422	426
Drafting	11,706	7,161
Engineering	68,648	78,261
Project administration	197,399	182,954
Field work -water programs	10,669	12,459
Other	29,467	28,972
Compensated absences	33,903	31,852
Payroll taxes and benefits	110,962	109,258
Manager's expenses	22,919	19,673
Travel, mileage, meetings and per diems	1,863	2,412
Audit	8,380	8,105
Legal	24,275	22,689
Appraisal and viewers	16,746	8,837
Other professional fees	466,630	136,266
Office supplies	15,797	12,481
Office equipment	22,556	2,629
Dues & subscriptions	4,702	3,757
Insurance and bonds	28,826	30,544
Rent	-	1,210
Repairs and maintenance	11,864	9,227
Utilities	6,215	5,500
Telephone	10,136	8,755
Advertising and publications	14,641	8,480
Truck expense	19,130	15,412
Red River Watershed Management Board	1,289,116	1,073,323
Cost share assistance	9,338	-
Land acquisition and easements	129,271	42,445
Construction	356,737	502,266
Engineering costs & fees	6,895	4,558
Engineering fees	428,390	301,073
Engineering equipment	31,538	35,951
Glacial Ridge	238,943	45,570
Ring dike reimbusement	20,173	3,971
Loan payments	-	15,450
Total Expenditures	$ 3,666,296	$ 2,785,421