

Please complete this grant project summary and copy/paste into your final report.

## Grant Project Summary

Project title: Lac qui Parle River Mainstem Water Quality Enhancement Project

Organization (Grantee): Lac qui Parle-Yellow Bank Watershed District

Project start date: March 6, 2006 Project end date: December 31, 2008 Report submittal date: January 28, 2009

Grantee contact name: Mary Homan Title: Project Coordinator

Address: 600 6<sup>th</sup> Street

City: Madison State: MN Zip: 56256

Phone number: 320-598-3319 Fax: 320-598-3125 E-mail: mary.homan@lqpc.com

Basin (Red, Minnesota, St. Croix, etc.): Minnesota County: Lac qui Parle

### Project type (check one):

- Clean Water Partnership (CWP) Diagnostic
- CWP Implementation
- Total Maximum Daily Load (TMDL) Development
- 319 Implementation
- 319 Demonstration, Education, Research
- TMDL Implementation

## Grant Funding

Final grant amount: \$298,000.00 Final total project costs: \$1,345,516.69

Matching funds: Final cash: \$30,032.08 Final in-kind: \$312,281.70 Final Loan: \$705,202.91\*

Contract number: A86654 MPCA project manager: Katherine Pekarek-Scott

\*Loan program continues till August 29, 2009.

## For TMDL Development or TMDL Implementation Projects only

Impaired reach name(s): \_\_\_\_\_

AUID or DNR Lake ID(s): \_\_\_\_\_

Listed pollutant(s): \_\_\_\_\_

303(d) List scheduled start date: \_\_\_\_\_ Scheduled completion date: \_\_\_\_\_

AUID = Assessment Unit ID  
DNR = Minnesota Department of Natural Resources

### **Executive Summary of Project** (300 words or less)

This summary will help us prepare the Watershed Achievements Report to the Environmental Protection Agency. (Include any specific project history, purpose, and timeline.)

The middle reach of the south branch of the Lac qui Parle River from Canby to Dawson was prioritized due to high levels of suspended solids and high turbidity readings. The targeted watershed is agricultural with primarily row crops of corn and soybeans. A unique feature of the watershed is the tremendous drop in elevation. From the highest point in the watershed to the Minnesota River there is an elevation change of 1,070 feet. This elevation change affects the water flow and transports sediment, nutrients and bacteria downstream quickly. The goals and objectives for the project were based on results from water quality monitoring, land use assessments and reasonable expectations for rivers in the Northern Glaciated Plains ecoregion. Consideration was given to the unique characteristics of the watershed. The project was designed to reduce suspended solids, turbidity and bacteria in the river which addresses the turbidity and fecal coliform standards that resulted in an impaired waters listing while keeping the local economic factors in perspective.

Goals and objectives of the project included the following:

1. BMP Implementation that included promoting buffer strips with an incentive to landowners, cost share for construction projects such as sediment and water control basins, terraces, grass waterways, and low interest loans for upgrading sewer systems.
2. Educational Outreach programs designed to increase awareness of individual activities and best management practices that residents can do to improve and enhance water quality from backyards to fields.
3. Water Quality Monitoring at previously established monitoring stations to help evaluate effectiveness of implemented projects and their impact on water quality in the Lac qui Parle River.
4. Evaluation of the project that recorded BMP installation and provided direction to reach project goals.

**Goals** (Include three primary goals for this project.)

- 1st Goal: Improve water quality in middle reach of the Lac qui Parle River.
- 2nd Goal: Provide educational opportunities for residents in the watershed.
- 3rd Goal: Install Best Management Practices in the priority area.

**Results that count** (Include the results from your established goals.)

- 1st Result: Achieved a reduction in the average level of bacteria at all of the monitoring sites. Turbidity and Total Suspended Solids were reduced at three of the five monitoring sites.
- 2nd Result: Educational opportunities were provided through the following: Women's workshops with 46 in attendance, biweekly news column in county newspaper read by several hundred residents, School presentations to about 1,000 K-6 students over 3 years, Canoe trips for partners and citizen monitors approximately 35 to 40 people, Manure Management Workshops for 65 producers in Lac qui Parle and Yellow Medicine counties, Educational Bus Tour for 54 people.
- 3<sup>rd</sup> Result: Installed 132.6 acres of buffer strips, 6 water and sediment control basins, 3,930 feet of grass waterway, 1 grade stabilization structure, 3,250 feet of terraces, and 2 diversions.

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**Picture** (Attach at least one picture, do not imbed into this document.)

Description/location:

Canoe trip explored the middle reach of the South Branch Lac qui Parle in Providence Township of Lac qui Parle county that is agriculture based with row crops of corn and soybeans.

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**Acronyms** (Name all project acronyms and their meanings.)

BMP- Best Management Practices

CRP -Conservation Reserve Program

TSS- Total Suspended Solids

SWCD-Soil and Water Conservation District

CWP-Clean Water Partnership

ISTS-Individual Sewage Treatment System

NRCS-Natural Resource Conservation District

LqP-Lac qui Parle

TEAM-Together Everyone Achieves More – Partnering Agencies monthly meetings

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**Partnerships** (Name all partners and indicate relationship to project)

**Lac qui Parle –Yellow Bank Watershed District**

Lac qui Parle-Yellow Watershed District is the fiscal manager of the project that includes writing all checks for salaries and invoices and provided funds for expenditures that are reimbursable through the grant. The administrator and 2 watershed managers regularly attend TEAM meetings that provide direction for the project. The watershed provides final approval for recommendations brought from the TEAM meetings. The District provided \$12,032.08 cash to the project.

**Lac qui Parle Soil and Water Conservation District**

Lac qui Parle Soil and Water Conservation District provides in-kind of vehicle use for water quality sampling, supplies, newsletter space, TEAM meeting participation and a partner for educational outreach activities.

**Yellow Medicine Soil and Water Conservation District**

Yellow Medicine Soil and Water Conservation District provides in-kind of newsletter articles, TEAM meeting participation, technical assistance for buffer incentives and a partner for educational outreach activities.

**Lincoln Soil and Water Conservation District**

Lincoln Soil and Water Conservation District provides in-kind with TEAM meeting participation, newsletter articles, and a partner for education outreach activities.

**Lac qui Parle Water Management Plan**

Lac qui Parle Water Management Plan provided \$6,000 cash per year of project (\$18,000), and in-kind with TEAM meeting participation.

**Lac qui Parle Environmental Office**

Lac qui Parle Environmental Office provides in-kind with the ISTS maintenance program and as a partner for educational outreach activities.

**Yellow Medicine Water Plan**

Yellow Medicine Water Plan provides in-kind with newsletter articles, TEAM meeting participation, reports to Yellow Medicine County commissioners and administers the ISTS loan program for Yellow Medicine county.

**Yellow Medicine County**

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Strip Tillage Expo in Southern MN-WE reserved a bus but cancelled due to poor response. However, the project paid mileage for four landowners to attend event which was more cost effective than a large bus. Area residents attended event by driving themselves and taking in part of the day versus the whole day as the bus ride required. Yellow Medicine, Lincoln and LqP SWCD's were partners.

Manure Management Workshop 101 was held in Lac qui Parle and Yellow Medicine counties to reach landowners with feedlots. The project did not succeed in upgrading two feedlots with BMP implementation but used the workshops to discuss proper manure management and other programs available to feedlot owners. The workshops were well attended with about 65 producers present. LqP and Yellow Medicine Environmental Officers and NRCS offices were partners.

Dawson Winterfest activities included a "Wonders of Water" storyhour with children coloring on quilt squares. These squares were sewed into small kids size quilts and given away at Riverfest when another storyhour and water related activities were held in the park. Both events brought about 25 children with their parents and grandparents. This project has formed a new stronger partnership with the Dawson Chamber of Commerce.

Canoe Trips on the Lac qui Parle River provides an opportunity to get up close and personal with the river. Experienced and certified canoe instructors provide their services for a safe canoe trip. The annual canoe trips are attracting new participants each year as well as repeat participants. We always take a transparency tube along to measure water clarity. Dawson High School provides canoes and an instructor for this event.

Annual Township Meetings and Organization meetings are an effective way to present programs and opportunities for residents.

Lac qui Parle Watershed Bus Tour that showcased BMP's installed in the priority area was very well attended. This included 54 people experiencing the watershed in a different manner that included history, geology, water quality stations, flooding issues, and corrective measures presented in a fun and entertaining way. Participants requested an annual tour to enhance their knowledge of the watershed. Lac qui Parle-Yellow Bank Watershed District assisted with this event.

Our goal was to have producer participation along with a high level of partnership involvement in three quality events each year. This objective was met with more than three events and several partners working together to increase citizen awareness. Most events that were not well received had additional actions taken to get information out to residents another way or incorporated activities into another scheduled event. **ISTS Maintenance Program** A maintenance Program was started in Lac qui Parle county as part of the low interest loan program. As a requirement for the loan participants agree to properly maintain until the loan is repaid in full. A "Septic System Owner's Guide by the University of Minnesota Extension Service" is provided to each participant of the loan program. This folder provides a place to record pertinent information for the septic system as well as tips for maintaining their new system. After the system has been installed for two years a letter is sent as a reminder to properly maintain their systems. When they have their systems pumped and inspected an invoice is sent back to be included in their individual loan file. This reminder system started in 2007 and continued in 2008. Currently there is a 42% response rate of returned invoices. This is a little low but recommendations in the Guide state every two or three years for pumping and we are sending at two years after the upgrade. The Lac qui Parle Environmental Office is also sending notices to all residents that installed new septic systems.

**CWP Education** There were no goals set for this objective. The budget set aside funds for CWP staff to attend out of town meetings, seminars, conferences, and workshops. It is important for staff to stay abreast of current trends, issues, technology and BMP's for improving water quality and to enhance their education of the issues. Staff used discretion on which events to attend according to the agendas.

### **Program Objective 3: Water Quality Monitoring**

**USGS Monitoring** A three year contract with USGS provided support for operation, maintenance, and record computation to provide continuous streamflow record for the gaging station at Lac qui Parle near Lac qui Parle, station ID 05300000, STORET S003-087, local site 9. This contract was fulfilled.

**DNR Flood Warning** A three year contract with DNR provides stage-discharge relationships and compute continuous discharge records for the sites from April 1, 2006 through December 31, 2008. The sites are Lac qui Parle River near Providence, CSAH 23 ID # 24053001, STORET S003-079, local site 11 and West Branch Lac qui Parle River at Dawson, Diagonal Street, ID # 24059001, STORET S003-089, local site 10. This contract was fulfilled.

**Routine Monitoring** The monitoring plan is for 20-25 samples per year. The samples were sent to ERA labs in Duluth, MN. Field measurements include dissolved oxygen, pH, transparency tube, specific conductance, water temperature and stream appearance and recreational suitability. The samples were analyzed for total phosphorus (TP), ortho phosphorus (OP), nitrate-nitrite nitrogen (N+N), total suspended solids (TSS), total suspended volatile solids (TSVS), turbidity and fecal coliform bacteria. Fecal coliform bacteria was completed in 2006 and 2007, it was changed in 2008 to E. coli. Samples were taken following storm events and once a month at low to medium flow. Monitoring continued at site 1-STORET S003-084,

site 2-STORET S003-085, site 3-STORET S003-074, site 9 STORET S003-087, site 10-STORET S003-089, and site 11 STPRET S003-079. The goal was met for sampling with 25 samples collected in 2006, 31 samples collected in 2007, and 25 samples collected in 2008.

**Citizen Monitoring/Sampling** The citizen monitoring program goal was to increase and retain citizen monitors and to provide volunteers with an annual training event. Three new citizen monitors were recruited however one did not get to the stream to record data. Training events were scheduled but only one was held in 2007. Annual canoe trip on the Lac qui Parle were held.

#### **Program Objective 4: Evaluation of Project**

An evaluation plan for each of the program objectives was developed in the work plan. This included measures of success and a method for evaluation. Tracking and reporting BMP installation was completed through NRCS, SWCD and CWP. Reporting was completed annually with data entered into e-Link, a reporting program with BWSR. Evaluation was continuous throughout the grant and adjustments were made as needed. This included two amendments to the budget and adjustments to filter strip incentives. This final report is a documentation of the implementation grant.

#### **Program Objective 5: Fiscal Management and Administration**

The Lac qui Parle-Yellow Bank Watershed District is the project sponsor and fiscal manager of grant funds. CWP staff administered the project with support from the Watershed Board of Managers. The watershed administrator is responsible for payroll and accurate accounting practices using the Quickbooks program. The goals for administering include semi-annual reports submitted on time, preparing invoices for reimbursement, tracking all elements of project, and hold TEAM meetings as needed. The goals were met with all reports submitted on or before the due date. The grant required expenses to be paid and then the Watershed is reimbursed with grant funds. An invoice with detailed expenses in each program element assists with budget reviews. This invoice started quarterly and is presently completed monthly which is beneficial for the watershed. Twenty-two TEAM partner meetings were held to recommend BMP applications for the watershed to approve, provide information to partners, evaluate programs and provide direction to reach the project objectives.

## **Section II – Grant results**

To help determine if this grant project was successful an evaluation plan was designed for each program objective in the workplan.

Each program objectives had a list of measures of success and methods of evaluation. The program objectives tracked actual results, number of participants, number of events, response to mailings, request for additional information, interviews/visits with landowners observations by staff and TEAM partners. From these records, the TEAM partners recommended changes as needed. Examples of changes was adjusting incentive amount for buffer strips, less direct mailings and use partners newsletters, amending budgets to enhance additional BMP implementation in the priority area. Most numeric objectives were met or exceeded however the cost of meeting the objectives were considerably higher than originally budgeted. Other objectives were more difficult to measure such as 25% response to promotional materials or newsletters. In several instances promotional material and partner newsletters were sent out close together, also an informational booth may have been set up at a county fair promoting BMP practices. The small target area included responses to BMP incentives that were not eligible for funding at this time because they did not live in the priority area.

**Program Objective 1: BMP Implementation** results include 132.6 acres of buffer strips which exceeded the goal but cost 6 percent more per acre than originally planned. Nine water and sediment control basins, and 1,250 feet of terrace installed. Other construction projects included 3,905 feet of grass waterways that complement the water and sediment control basins, three diversions and one grade stabilization structure on the Lac qui Parle River. The additional practices were listed in the workplan but did not have numeric results listed. The low interest loan program for upgrading individual septic systems was successful with a total of 94 systems upgraded. The interest in the loan program has recently slowed down which is believed to be directly related to our current economic trends. The watershed is predominantly agricultural and thus very susceptible to the crop yields and prices. The average concentration of bacteria was reduced at all sites but still remain over the Minnesota water quality standards. Fecal coliform was analyzed from 2001 through 2007 then bacteria samples were changed to e. coli bacteria analysis in 2008. Turbidity and Total Suspended Solids averages were reduced in 2008 from 2007 which had a fast snowmelt and more frequent storm events. Turbidity levels remain about 30 percent over Minnesota water quality standards in the middle reach of the river while farther downstream that reflects both south and west branches of the Lac qui Parle River turbidity is nearing the Minnesota water quality standard. Improvements in water quality have been made however additional BMPs are still needed to reach our goals and objectives.

**Program Objective 2: Educational Outreach** results may be difficult to measure but overall the attendance of participants has increased especially in the last year of the project. The project intentionally added "fun" to serious issues and presented information in an easy to understand format. As fun, informative quality events were held, there was increased participants with neighbors asking neighbors to join them. The project has successfully reached several age groups throughout the watershed. When a story hour was planned for young children, parents and grandparents brought them and also heard the message. Women were targeted with home and garden practices that impact water quality. Ag producers were given information through mailings and one-to-one visits. A bus tour actually took people to see projects completed and increased awareness of the geography of the watershed and how all things are related to one another. Manure management workshops brought animal producers together. The county fairs and ag expo events had booths set up to deliver messages about current programs offered through the project. It is important to present information in varied formats and locations to reach citizens throughout the watershed.

**Program Objective 3: Water Quality Monitoring** is easier to quantify as far as numbers anyway.

Samples were taken between 25 and 30 times per year which was more than our goal of 20 to 25 samples. It is difficult to determine how many and the severity of storm events when setting up a budget for monitoring. When a storm occurs in the spring it has a completely different impact on the rivers than a summer or autumn storm event. Most of BMP practices are newly established and are not fully effective in reducing sediment from the streams.

1. At STORET S003-087 Lac qui Parle near Lac qui Parle, which is the furthest downstream site, bacteria, turbidity and total suspended solids reduced in 2008. In the fall of 2007 there was a large riverbank restoration project completed upstream at this site that reflects improvements in the turbidity and total suspended solids averages at this site.
2. At STORET S003-089 West Branch Lac qui Parle at Dawson Dam, Diagonal Street bacteria, total suspended solids and turbidity results were lower than 2007 and remained steady with 2006.
3. STORET S003-079 Lac qui Parle near Providence reflected a slight increase in total suspended solids and turbidity and a decrease in bacteria. The 2007 flows were larger and more frequent than in 2008.
4. At STORET S003-084 East of Canby on Hwy 68 and STORET S003-085 Lac qui Parle at Hwy 67 both had an increase in total suspended solids and turbidity readings in 2008 and decrease in bacteria.

**Program Objective 4: Evaluation** is interesting as it forces the project to look back and make necessary changes in an effort to improve long term results. A bus tour through the priority area for TEAM partners gave them an opportunity to judge for themselves effectiveness of project. The evaluation plan was pulled from the workplan and accomplishments highlighted. Each partner was asked to give additional comments and suggestion for improvement for future projects which are reflected in this report. As the project is preparing to move into a continuation grant, staff reviewed monitoring sites, budgets and is changing from a small priority area to a larger watershed which will enable additional landowners to install BMP's.

**Program Objective 5: Fiscal Management and Administration** increased TEAM partners particularly in the Dawson community and with the LqP Environmental Office. Meeting notes are emailed to partners not able to attend a meeting so they can stay abreast of project activities. CWP staff frequently receives questions and comments from the notes. Many of the TEAM partners are working with other watersheds with similar goals and are able to share ideas and results from neighboring watersheds. Partners effectively recommended changes and amendments to the Watershed District to enable the project to succeed in reaching many of our goals and objectives

**Products produced** included posters for special events, program brochures, postcards to landowners, maps of priority areas, and citizen monitor newsletters. The brochures developed for programs include: alternative tile intakes, ISTS loan program, rain gardens, keeping stormdrains clean, and a water quality incentive brochure. Posters created for special events include: Harvest In Harmony, LqP Watershed Tour invitations, postcards and posters. Citizen monitor newsletters were developed in January and March, 2007 and Spring in 2008. A final report of the Lac qui Parle Outdoor Expo was created as promotion tool for next event. A Project Summary was published in local newspaper as an evaluation with number of projects and total dollars used to implement Best Management Practices. Files for these products are in Appendix A.

## Long Term Results

This project targeted a priority area and will expand to include the whole Lac qui Parle–Yellow Bank watershed. The efforts accomplished thus far are expected to be replicated into the larger watershed. The NRCS/SWCD continue to listen to producers and their concerns and are aware of problem areas that can be addressed in the Continuation grant from 2009 to 2011. With the current economic conditions producers need to explore all options available to them. The Project Summary published in area newspapers increased landowner interest as we look into the future and expand into the entire watershed. By



incorporating the results from this grant into future messages to producers, we will continue to protect and improve our water resources.

Educational outreach activities currently have increased numbers of participation and by continuing to provide fun and informative events the residents will increase their knowledge and will work for improved water quality.

With the completion of this 319 Implementation grant the Lac qui Parle-Yellow Bank Clean Water Partnership has received additional funding through the Minnesota Pollution Control Agency and the State of Minnesota's Clean Water Partnership program for the continuation Lac qui Parle-Yellow Bank Water Quality Enhancement Plan. In addition to this three year CWP continuation grant there is a Clean Water Legacy Grant from the State of Minnesota that is addressing turbidity problems in the impaired reaches of the Lac qui Parle River with funds for streambank restoration, incentives for buffer strips and replacing open tile intakes. A TMDL Assessment and Implementation Plan Development Project is launching to address the bacteria, dissolved oxygen and turbidity impairments throughout the watershed.

The results of this project were shared with TEAM partners with a bus tour for evaluation purposes. The information was published as a two page ad in three local newspapers that highlighted results and activities conducted during the project. CWP staff has presented material to local chamber of commerce's, annual township meetings, TEAM and watershed meetings. Additional farm agencies such as soybean, corn and wheat growers, pork producers and cattlemen's association may be interested in results and how programs can be beneficial to them.

Just as this project learned from other watersheds this will become a tool for other watershed as they implement projects. Information needs to be presented in an informative and interesting manner with practical practices that is economically feasible and be respectful of the landowner's individual circumstances.

For long term success of grant programs I believe that MPCA needs to adequately fund positions so that grant projects can be more effective. As the project coordinator for this implementation project I worked with three different MPCA project managers which proved difficult. My first two project managers had large workloads outside of the individual watershed projects so they did not have the time to attend monthly meetings on a regular basis which resulted in a disconnect with the TEAM members and project manager. My present project manager has been attending monthly meetings, answers questions quickly, make additional suggestions for reporting and budgeting and is a true asset to the project.

## **Section III – Final Expenditures**

See Attached Document

The Final Budget shows a balance of \$94,797.09 in the ISTS loan program. The ISTS loan program received \$400,000 additional funds in 2007 that also extended the Expiration date to 8/29/09. Funds are expected to be depleted by that time.

## **Appendix A**

Electronic files of products produced include the following:

Brochures: Alternative Tile Intakes, ISTS Loan Program, Rain Gardens, Keeping Stormdrains Clean, Water Quality Incentives

Posters: Harvest in Harmony, LqP Watershed Tour, Project Summary

Newsletters: Citizen Monitor Newsletter January 2007, March 2007 and Spring 2008