



Ten Mile Creek Protection Plan For Turbidity Final Report

7-26-2013

Project Sponsor:

Lac qui Parle-Yellow Bank Watershed District

Contributing Sponsors:

Lac qui Parle SWCD
Yellow Medicine SWCD
Lac qui Parle Water Plan
Yellow Medicine Water Plan
Yellow Medicine County
Lac qui Parle NRCS
Yellow Medicine NRCS

Grant Project Summary

Project title: Ten Mile Creek Protection Plan For Turbidity

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

Project start date: January 21, 2011 Project end date: June 30, 2013 Report submittal date: July 25, 2013

Grantee contact name: Mary Homan Title: Program Coordinator

Address: 600 6th Street, Suite 7

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/Yellow Medicine

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: \$116,661.48 Final total project costs: \$236,301.59

Matching funds: Final cash: \$45,376.26 Final in-kind: \$74,263.85 Final Loan: \$ NA

Contract number: B52437 MPCA project manager: Katherine Pekarek-Scott

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.)

Ten Mile Creek, a tributary of the Lac qui Parle River in the Minnesota River basin, has a relatively level drainage area of about 76,000 acres of which approximately 90% of the land use is cultivated crops of corn and soybeans. Ten Mile Creek currently meets the Minnesota water quality standard for turbidity but was listed on the 303(d) Impaired Waters List in 2006 for fecal coliform bacteria and is known to have high levels of Nitrate+Nitrite Nitrogen. This project was designed to protect Ten Mile Creek from additional sediment entering it by offering incentives for filter strips, cost share to replace open tile intakes and create awareness of water quality concerns in the watershed. Grade control structures were added to the list of BMP's to reduce soil erosion from gullies by using a pipe outlet to allow water to drop to a lower elevation while protecting soil from eroding or scouring. The project began in January 2011 and ran through June 2013. The project produced the following savings with the completed projects, 483.3 tons per year of total suspended solids and 540.99 lbs. per year of phosphorus. Additional projects were planned but due to adverse weather conditions in 2012 and 2013 were not completed. A small group meeting was held with landowners that provided valuable insight on how they felt about filter strips. Following this meeting a survey was developed and sent out to the whole watershed with questions about water quality, filter strips, open tile intakes and other conservation information they would like to receive. This survey had nearly a 20% response rate from landowners. The small group meeting and survey aided immensely in managing this grant by understanding and then adjusting the project to address landowner issues and concerns surrounding Ten Mile Creek.

Goals (Include three primary goals for this project.)

1st Goal: Install 25 miles of new filter strips thirty feet wide for approximately 90 acres.

2nd Goal: Replace 50 open tile intakes with alternative intakes.

3rd Goal: Provide credible water quality information to landowners to enhance water quality

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

1st Result: We did not reach our goal but did successfully enroll/re-enroll 26.6 acres into a Continuous CRP program that resulted in savings of 89.3 tons per year of total suspended solids and 147.37 lbs. per year of phosphorus. Early in the project we found that landowners were hesitant about signing 10 or 15 year contract for filter strips as the soil rental rates were substantially lower than land rental rates.

2nd Result: Forty-four intakes were encumbered and scheduled to be replaced but the wet, adverse weather conditions prevented field work in the spring of 2013. There were nine intakes replaced with a pattern tile design and resulted in soil savings of 1.8 tons/per year of soil and 4.5 lbs./per year of phosphorus.

3rd Result: 469 landowners in the watershed received newsletters and postcards, two landowner meetings held, six radio programs and approximately 70 individual contacts with landowners provided water quality information on BMP's to reduce pollutants from entering Ten Mile Creek.

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

Description/location:

Before and After pictures of special project-Grade Stabilization with side inlet in Lac qui Parle County, Baxter Township Section 34 T-117-N; R-42-W

Acronyms (Name all project acronyms and their meanings.)

BMP Best Management Practice
CCRP Continuous Conservation Reserve Program
CWP Clean Water Partnership
EQIP Environmental Quality Incentive Program
NRCS Natural Resource Conservation Service
SWCD Soil and Water Conservation District
TEAM Together Everyone Achieves More (Partnering Agencies)

Partnerships (Name all partners and indicate relationship to project)

Lac qui Parle-Yellow Bank Watershed District-Project Sponsor, administration, cash contribution
Lac qui Parle SWCD-Technical and In-Kind, newsletter articles, TEAM member, Education Partner
Yellow Medicine SWCD-Technical and In-Kind, TEAM member, Education Partner
Lac qui Parle Water Plan-Cash and In-Kind, TEAM member, newsletter articles
Yellow Medicine Water Plan-In-Kind, TEAM member, newsletter articles
Lac qui Parle County-In-Kind, Office space and supplies, telephone, internet services,
Lac qui Parle NRCS-Technical services for BMP's, tracking BMP's, TEAM member
Yellow Medicine NRCS-Technical services for BMP's, tracking BMP's

Section I: Work Plan Review

1. Work Plan Changes

Work Plan was amended in February, 2012 as follows. Program Element 1: BMP Implementation In-Kind was amended from \$43,500 to \$34,500.00. Program Element 2 Education and Outreach Programs In-Kind amounts were amended from \$8,000.00 to \$6,300.00. Program Element 3 Fiscal Management and Administration In-Kind amounts were amended from \$45,000.00 to \$55,700.00

On the Project Support Summary the following changes were made: Prairie Country RC&D was removed from the contributing sponsor's portion as they are no longer in existence. Lac qui Parle County increased In-Kind from \$5,000.00 to \$5,700.00.

Landowner Share was increased from \$1,000.00 to \$1,300.00.

The Work Plan was amended again in February, 2013 as follows. In Section 5: Identification and Summary of Program Elements: Program Element 1: BMP Implementation 3rd paragraph states-Open tile intakes replaced with either a rock inlet or pattern tile design will have up to 75% cost share not to exceed \$400 per intake with a limit of five intakes per landowner. The change was to eliminate the "limit of five intakes per landowner".

2. Activities and Tasks of Work Plan

Program Element 1: BMP Implementation

Best Management Practices were installed throughout the Ten Mile Creek/Judicial Ditch 8 watershed to prevent and reduce non-point source pollution for total suspended solids. The principal non-point source pollutants identified in the Lac qui Parle-Yellow Bank Watershed Diagnostic Study Report and Implementation Plan, October 2003, include total suspended solids, nutrients and bacteria. An incentive was offered for installing or re-enrolling filter strips in the amount of \$75 per acre per year with either a 10 or 15 year Continuous CRP contract. Cost share of 75% not to exceed \$400 per intake was provided to replace open tile intakes with either a rock inlet or pattern tile design. Special projects included construction of several grade control structures. In May 2013 all grant funds were encumbered however the wet spring conditions prevented construction of several projects.

Filter strips: A total of 26.6 acres were enrolled into the Continuous CRP program with six landowners. A consistent deterrent throughout this grant was that the CRP soil rental rates are lower than current land rental rates and producers were hesitant to sign a 10 or 15 year contract. Landowners took land out of retirement programs to farm additional acres because of the current commodity prices.

Open Tile Intake Replacement: A total of 44 open tile intakes with eleven landowners were signed up to be replaced with either a rock inlet or pattern tile design. However with unfavorable weather conditions in the fall of 2012 and spring of 2013 only 9 intakes were actually replaced.

Grade Control Structures: Grade control structures were installed in areas with large gullies being formed from concentrated flow. This includes a pipe outlet that allows the water to drop to a lower elevation to prevent gully erosion. Eighteen grade control

structures were installed with six landowners. There was one additional structure approved but not constructed as the landowner decided against the project because of wet field conditions.

Program Element 2: Education and Outreach Programs

Educational outreach was conducted with the participating TEAM members to bring quality, informative information to the Ten Mile Creek watershed. Efforts focused on reducing water and soil runoff through agricultural BMP's. A survey was sent to landowner's to gain additional watershed information. Citizen's awareness was enhanced with one newsletter, six radio programs and small group meetings. All landowners also received letters reminding them of construction deadlines. In addition, the survey allowed for an e-mail contact list to be made. Yellow Medicine and Lac qui Parle SWCD's also sponsored an additional small group meeting in the watershed that reviewed BMP's, state and federal programs and grant opportunities. The SWCD's also sent newsletters with information included about BMP's and water quality information. An unforeseen obstacle was that the subwatershed is served by several radio stations and newspapers making it difficult to effectively reach landowners. By visiting with producers and landowners one-to-one and encouraging them to share with neighbors the message was delivered more effectively.

Program Element 3: Fiscal Management and Administration

Project administration was conducted by the Project Coordinator along with the Lac qui Parle-Yellow Bank Watershed District Administrator for accounts payable/receivable and payroll. Activities included preparation and submittal of work plan, semi-annual reports, organizing TEAM meetings, educational presentation and materials, tracking all BMP projects, final report and budget and reporting into eLINK.

The Work Plan was completed and approved in April 2011 and Revised in February 2012 when Prairie Country RC&D was no longer a contributing sponsor. Another revision or grant change order occurred in February 2013 which eliminated the "limit of five intakes per landowner" for open tile replacements. At the time of the Mid-project review it was expected to have extra grant dollars so the third payment was reduced to the Lac qui Parle-Yellow Bank Watershed District. With additional outreach all of the BMP funds were encumbered in May 2013 but with adverse weather the projects were not completed before the grant expiration date. BMP's have been regularly reported into eLINK but there has been a problem throughout this project with linking the practices with the funding source. The new eLINK program is currently having issues getting the CWP grants into the system which they are working on to correct the problem.

Section II: Grant Results

3. Measurements

The evaluation plan included tracking and reporting all BMP installation, calculating soil, sediment and phosphorus savings from installed BMP's, and reporting into e-LINK, a

reporting program with Board of Water and Soil Resources (BWSR). Evaluation was continuous throughout the grant period. The TEAM meetings reviewed applications to fund and made recommendations for the adjustments made in the work plan changes listed, provided recommendations and opportunities for additional outreach to landowners.

Education/Outreach: *At the beginning of this project a meeting was held with landowners to determine their concerns and needs in the watershed. From this meeting it was determined to send a survey to all landowners in the watershed. The survey asked about their concerns, interest in filter strips or harvestable buffers, open tile intakes and what type of information they would like to receive and how they would like to receive it. Included was an opportunity for them to express why they were not interested practices. Most common comments included losing productive field acres, low soil rental rates, length of contracts, and that buffer strips were not needed in their field. There was a lot of interest in replacing open tile intakes. The survey was sent to 469 landowners and had nearly a 20% return.*

BMP Implementation: *The individual BMP's were totaled for the following saving of sediment, soil and phosphorus:*

Buffer strips: *A total of 26.6 acres were enrolled into the Continuous CRP program with six landowners. Projects were reported in eLINK. The BWSR filter strip calculator estimated savings of 89.3 tons/year of Total Suspended Solids, 82 tons/year of soil and 147.37 lbs./year of Total Phosphorus. Three additional buffer strip contracts were developed but did not get signed by landowner before the Farm Bill expired last fall thus they are waiting till fall 2013 to begin their contracts.*

Open Tile Intake Replacement: *Nine tile intakes were replaced with pattern tile. Projects were reported in eLINK and the BWSR calculator estimated savings of 1.8 tons/year of soil and 4.5 lbs./year of Total Phosphorus.*

Special Projects/Grade Control Structures: *Eighteen grade control structures were installed with six landowners. Projects were reported in eLINK. The BWSR calculator for gully stabilization estimated savings of 394 tons/year of Total Suspended Solids and 389.12 lbs./year of Total Phosphorus.*

Fiscal Management and Administration: *The Work Plan was completed and approved in April 2011 and Revised in February 2012 when Prairie Country RC&D was no longer a contributing sponsor. The Work Plan also had a Change Order in February 2013 that removed the limit of five intakes per landowner that would be eligible for cost share. All annual and semi-annual reports with updated budgets were submitted as required. At the time of the Mid-project review it was expected to have extra grant dollars so the third payment was reduced to the Lac qui Parle-Yellow Bank Watershed District. In May 2013 all grant funds were encumbered however the wet spring conditions prevented construction. Additional outreach with contractors and landowners resulted in additional projects to be completed with 82% of the grant expended as designed.*

Products

The following products were produced during this project:
Protecting Ten Mile Creek survey and survey results

Grade Stabilization Operation and Maintenance form
2012 spring and fall postcard mailings
Ten Mile Creek map
Ten Mile Creek newsletter

4. Education and Outreach Programs

An outreach meeting was held early in the grant for ten landowners that were hand selected with regards to their individual farming operations. Three of the landowners attended. Following this meeting it was determined to send out a survey to all residents. The survey asked about their concern, interest in filter strips or harvestable buffers, open tile intakes and what type of information they would like and how they would like to receive the information. The surveys returned were nearly 20%. This survey provided information throughout the grant period.

A weekly radio program aired April through September discussed this grant including its purpose, BMP incentives and cost share programs, and Ten Mile Creek TMDL status. Following the radio programs telephone calls were received requesting additional information. Newsletter was sent to landowners with information about the grant programs. After the newsletter was sent we started receiving inquiries requesting assistance with gully washout areas along Ten Mile Creek/Judicial Ditch 8. TEAM members recommended funding grade stabilization projects using special project funds. Postcards were sent to landowners as reminders of the project and highlighted BMP incentives and cost share opportunities.

Letters were sent to landowners inviting them to a town hall meeting in a small town located in the center of the project. The meeting was held about mid project to provide additional information to landowners. Nine landowners attended and several phone calls were received requesting personalized calculations for filter strips. This meeting was designed to either be a formal meeting with presentations or informally presented on a one to one basis. Some of the landowners arrived early and others came in late so it was decided to go with individual consultations format. Landowners took application along with them for replacing open tile intakes.

Another effective method was to talk with contractors that regularly work in the watershed and they shared opportunities with their clients.

5. Long-term results

This project continued to build relationships with partnering agencies and landowners. Through TEAM meetings, the project addressed needs of the watershed and made adjustments as needed. The relationships with landowners were strengthened as projects were completed they were thanked them for their contributions made towards improving local water quality. By offering incentives, cost share and providing credible

information landowners were confident in their conservation decisions. Ten Mile Creek is impaired for fecal coliform bacteria and the TMDL and Implementation Plan was approved in the spring of 2013. As we move forward to implementation this watershed has knowledge of the concerns and what needs to be done to improve the water quality.

There has not been new partnerships formed but working relationships have been strengthened with partnering agencies. This is important as we work together on the TMDL Implementation Plan for the watershed.

As this project is completed, the Lac qui Parle-Yellow Bank Watershed District plans to implement the TMDL Implementation Plan as funds become available. They have contracted with the Water Resource Center at the University of Minnesota in Mankato to complete a GIS Terrain Analysis of the entire watershed. This will provide valuable information on selection and placement of BMP's along with how the practice impacts water quality in the rivers.

The final results of this project will be shared at a TEAM meeting with partnering agencies on August 6th. A radio program will be dedicated to the results of this project as well as a project sheet developed for handout at the Lac qui Parle County fair in September. The information will be on the Lac qui Parle-Yellow Watershed District website at www.lqpybwatershed.org.

We did not reach our goal for filter strips but with the construction of grade stabilizations the project reduced several hundred tons of soil and sediment that was forming gullies and eroding directly into Ten Mile Creek.

This project was challenging as we knew there would be no extension available due to the funding cycle. This grant would have used all the funds and had greater sediment and phosphorus savings if all the encumbered projects were completed.

Section III: Final Expenditures

6. Final Budget

The original grant amount was \$141,850.00 and the final grant amount is \$116,661.48 which leaves a balance of \$25,188.52 unused grant funds.

The original cash match was \$45,600.00 and the final cash match was \$45,376.26 which left \$223.74 which will be used for additional civic engagement activities for the TMDL work in the Ten Mile Creek watershed.

The original in-kind match was \$96,500.00 and the final in-kind was \$74,263.85. The total match for the Ten Mile Creek Protection Plan is \$119,639.85.

Please see attached Excel file for details.

III.C.1. Jan 1 - Jun 30 Grant Expended	III.C.2. 2012 Jan 1 - Jun 30 Cash Match Expended	III.C.3. Jan 1 - Jun 30 In-kind Expended	III.C.5. 2012 Jan 1 - Jun 30 Total Expended	III.D.1. Jul 1 - Dec 31 Grant Expended	III.D.2. 2012 Jul 1 - Dec 31 Cash Match Expended	III.D.3. Jul 1 - Dec 31 In-kind Expended	III.D.5. 2012 Jul 1 - Dec 31 Total Expended	III.E.1. Jan 1 - Jun 30 Grant Expended	III.E.2. 2013 Jan 1 - Jun 30 Cash Match Expended
\$ 4,643.00	\$ -	\$ -	\$ 4,643.00	\$ 31,665.75	\$ -	\$ -	\$ 31,665.75	\$ 34,752.73	\$ -
\$ 1,725.00			\$ 1,725.00	\$ 17,786.25			\$ 17,786.25	\$ 4,372.50	
\$ 2,918.00			\$ 2,918.00	\$ 1,326.50			\$ 1,326.50	\$ 911.78	
				\$ 12,553.00			\$ 12,553.00	\$ 29,468.45	
						\$ 3,400.00	\$ 3,400.00		
						\$ 500.00	\$ 500.00		
						\$ 22,863.59	\$ 22,863.59		
\$ 4,643.00	\$ -	\$ 973.68	\$ 2,123.68	\$ 31,665.75	\$ -	\$ 26,763.59	\$ 58,429.34	\$ 34,752.73	\$ -
\$ 38.72			\$ 38.72				\$ -		
						\$ 962.50	\$ 962.50		
						\$ 367.50	\$ 367.50		
						\$ 70.00	\$ 70.00		
						\$ 280.00	\$ 280.00		
						\$ 280.00	\$ 526.12		\$ 37.74
\$ 38.72	\$ 92.40	\$ 92.40	\$ 597.40	\$ -	\$ 246.12	\$ 1,960.00	\$ 2,206.12	\$ -	\$ 37.74
\$ 4,643.62	\$ 4,643.62	\$ 1,714.30	\$ 9,287.24	\$ 17,882.88	\$ 17,880.07	\$ 2,250.00	\$ 35,762.95	\$ 11,607.67	\$ 11,609.84
		\$ 2,056.00	\$ 1,714.30			\$ 1,155.00	\$ 2,250.00		
		\$ 1,000.00	\$ 1,000.00			\$ 2,236.77	\$ 2,236.77		
\$ 4,643.62	\$ 4,643.62	\$ 4,770.30	\$ 14,057.54	\$ 17,882.88	\$ 17,880.07	\$ 5,641.77	\$ 41,404.72	\$ 11,607.67	\$ 11,609.84
\$ 9,325.34	\$ 4,736.02	\$ 7,491.38	\$ 21,552.74	\$ 49,548.63	\$ 18,126.19	\$ 34,365.36	\$ 102,040.18	\$ 46,360.40	\$ 11,647.58

III.E.3. Jan 1 - Jun 30 In-kind Expended	III.E.5. 2013 Jan 1 - Jun 30 Total Expended	IV.A. Cumulative Grant (III.A.1. thr I.1.)	IV.B. Cumulative Cash Match (III.A.2. thr I.2.)	IV.C. Cumulative In-kind (III.A.3. thr I.3.)	IV.E. Cumulative Total Expended (III.A.5. thr I.5.)	V.A. Budget Balance Grant (II.A. - IV.A.)	V.B. Budget Balance Cash Match (II.B. - IV.B.)	V.C. Budget Balance In-kind (II.C. - IV.C.)	V.E. Budget Balance Cumulative (II.E. - IV.E.)
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\$ -	\$ 34,752.73	\$ 71,061.48	\$ -	\$ -	\$ 71,061.48	\$ 25,188.52	\$ -	\$ -	\$ 25,188.52
	\$ 4,372.50	\$ 23,883.75	\$ -	\$ -	\$ 23,883.75				
	\$ 911.78	\$ 2,238.28	\$ -	\$ -	\$ 2,238.28				
	\$ 29,468.45	\$ 44,939.45	\$ -	\$ -	\$ 44,939.45				
\$ 600.00	\$ 600.00	\$ -	\$ -	\$ 7,000.00	\$ 7,000.00	\$ -	\$ -	\$ 20,500.00	\$ 20,500.00
\$ 9,989.69	\$ 9,989.69	\$ -	\$ -	\$ 500.00	\$ 500.00	\$ -	\$ -	\$ 5,500.00	\$ 5,500.00
\$ 10,589.69	\$ 45,342.42	\$ 71,061.48	\$ -	\$ 33,826.96	\$ 112,388.44	\$ 25,188.52	\$ -	\$ (32,826.96)	\$ 18,361.56

\$ -	\$ -	\$ 600.00	\$ -	\$ 587.50	\$ 1,187.50	\$ -	\$ -	\$ (587.50)	\$ (587.50)
\$ 189.00	\$ 189.00	\$ -	\$ -	\$ 1,495.40	\$ 1,495.40	\$ -	\$ -	\$ 1,000.00	\$ (1,195.40)
\$ 87.50	\$ 87.50	\$ -	\$ -	\$ 455.00	\$ 455.00	\$ -	\$ -	\$ 545.00	\$ 545.00
\$ 1,277.50	\$ 1,277.50	\$ -	\$ -	\$ 1,599.50	\$ 1,599.50	\$ -	\$ -	\$ (599.50)	\$ (599.50)
\$ 87.50	\$ 87.50	\$ -	\$ -	\$ 972.40	\$ 972.40	\$ -	\$ -	\$ 27.60	\$ 27.60
\$ 100.50	\$ 138.24	\$ -	\$ 376.26	\$ 1,045.50	\$ 1,421.76	\$ -	\$ 223.74	\$ 1,954.50	\$ 2,178.24
\$ 1,733.00	\$ 1,770.74	\$ 600.00	\$ 376.26	\$ 6,155.30	\$ 7,131.56	\$ -	\$ 223.74	\$ 144.70	\$ 368.44

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\$ -	\$ -	\$ 10,865.83	\$ -	\$ -	\$ 10,866.47	\$ -	\$ -	\$ -	\$ -
\$ -	\$ -	\$ 22,526.50	\$ -	\$ -	\$ 22,523.69	\$ -	\$ -	\$ -	\$ -
\$ -	\$ -	\$ 11,607.67	\$ -	\$ -	\$ 11,609.84	\$ -	\$ -	\$ -	\$ -
\$ 2,825.00	\$ 23,217.51	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 14,601.30	\$ -
\$ 1,032.50	\$ 2,825.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 14,601.30	\$ 24,898.34
\$ 1,650.02	\$ 1,032.50	\$ -	\$ -	\$ 5,293.50	\$ 5,293.50	\$ -	\$ -	\$ 5,206.86	\$ 5,206.86
	\$ 1,650.02	\$ -	\$ -	\$ 6,886.79	\$ 6,886.79	\$ -	\$ -	\$ (1,186.79)	\$ (1,186.79)
\$ 5,507.52	\$ 28,725.03	\$ 45,000.00	\$ 45,000.00	\$ 26,781.59	\$ 116,781.59	\$ -	\$ -	\$ 28,918.41	\$ 28,918.41

\$ 17,830.21	\$ 75,838.19	\$ 116,661.48	\$ 45,376.26	\$ 74,263.85	\$ 236,301.59	\$ 25,188.52	\$ 223.74	\$ 22,236.15	\$ 47,648.41
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