Protecting North and South Fork
Yellow Bank River
Final Report

April 6, 2012 to April 5, 2016

Project Sponsor:
Lac qui Parle-Yellow Bank Watershed District

April 14, 2016
Contributing Sponsors:
Lac qui Parle County,
Lac qui Parle County Water Plan,
Lac qui Parle SWCD,
Lac qui Parle NRCS,
East Dakota Water Development District
Grant project summary

Project title: Protecting North and South Fork Yellow Bank River

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

Project start date: April 6, 2012  Project end date: April 5, 2016  Report submittal date: April 14, 2016

Grantee contact name: Mary Homan  Title: Project Coordinator

Address: 600 6th Street, Suite 7

City: Madison  State: MN  Zip: 56256

Phone number: 320-598-3319  Fax: 320-598-3125  Email: Mary.homan@lpcco.com

Basin (Red, Minnesota, St. Croix, etc.)/Watershed & 8 digit HUC: Minnesota River Basin 07020001  County: Lac qui Parle

Project type (check one):
- X Clean Water Partnership
- Total Maximum Daily Load (TMDL)/Watershed Restoration or Protection Strategy (WRAPS) Development
- 319 Implementation
- 319 Demonstration, Education, Research
- TMDL/WRAPS Implementation

Grant funding

Final grant amount: $234,949.66  Final total project costs: $787,648.67

Matching funds: Final cash: $10,235.21  Final in-kind: $76,316.82  Final Loan: $466,146.98  ends on 7-30-16

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.)

Problem (one paragraph)

The North and South Forks of the Yellow Bank River begin in South Dakota and are located in the northern portion of Lac qui Parle County in western Minnesota. They merge in Section 25 of Yellow Bank Township to form the main stem of the Yellow Bank River. Both the North and South Yellow Bank Rivers are currently meeting the Minnesota Water Quality standard for turbidity and are currently listed on the 303 (d) impaired waters list for fecal coliform.

Waterbody improved (one paragraph)

In 2010 and 2011 an intensive water sampling project was completed with East Dakota Water Development District, Upper Minnesota Watershed District and the Lac qui Parle-Yellow Bank Watershed District. The data from this
Project supported earlier data that the rivers meet the water quality standard for turbidity and exceeds the E. Coli bacteria standard. Conservation practices were selected to offer additional protection of sediment entering either of the streams.

**Project highlights (one paragraph)**

A Friendship Tour of the watershed that took about 100 participants into South Dakota to understand the elevation factor in the Yellow Bank River watershed. Information was presented on water quality results from a recent intensive sampling project, conservation management practices and programs available to landowners, flood control practices and future projects that are being developed. Other educational events such as field days provided encouragement to producers to try new conservation practices such as water control structures and cover crops. CRP contracts, water and sediment control basins, replacement of open tile intakes, and a streambank restoration projects were all completed to help protect the two rivers.

**Results (one paragraph)**

The North and South Fork Yellow Bank Rivers had 65.84 acres enrolled into continuous CRP contracts, six water and sediment control basins, eleven open intakes replaced and 120 feet of streambank restoration completed. The BWSR Water Erosion Pollution Reduction Estimator indicated TSS savings of 241 T/yr. soil savings of 372 T/yr. and Phosphorus reduction of 313 lbs/year.

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

Lac qui Parle-Yellow Bank Watershed District-Sponsor
Lac qui Parle County-Administrative In-Kind
Lac qui Parle Natural Resource Conservation Service-Engineering services and in-kind
Lac qui Parle Soil and Water Conservation District- Education Outreach
Lac qui Parle Water Management Plan-Educational Outreach
East Dakota Water Development District-Educational Outreach

**Pictures**

Wildung field day photo: Open tile intake replaced with pattern tiling

Cover crop photo: Producers at cover crop field day along the South Fork Yellow Bank River
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3. Final Expenditures
The North and South Forks of the Yellow Bank River begin in South Dakota in Grant County with just 13.4% of the watershed in Minnesota. The Yellow Bank River basin covers approximately 644 square miles (287,130 Acres) in Minnesota and South Dakota. Both forks are located in the northern portion of Lac qui Parle County in western Minnesota and merge in Yellow Bank Township, Section 25 to form the main stem of the Yellow Bank River. The Yellow Bank ultimately discharges to the Minnesota River east of Odessa, MN. The watershed is located in the Northern Glaciated Plains (NGP) ecoregion which is characterized by rolling terrain, fertile soils and extensive cultivation for row crops.

Both forks of the Yellow Bank River were listed on the 303(d) Impaired Waters List in 2006 for fecal coliform bacteria exceeding the water quality standard. Both forks of the river met the turbidity water standard. After the two forks merge the Yellow Bank River is impaired for turbidity in addition to the fecal coliform bacteria. A Total Maximum Daily Load (TMDL) for multiple parameters was approved May 8, 2013. Over-grazed riparian pastures and noncompliant septic systems have a high likelihood of being the major contributors of bacteria loading during dry conditions in all seasons. This project was designed to protect the North and South Fork Yellow Bank Rivers from becoming impaired for turbidity. The Yellow Bank River excess amounts of suspended solids are likely caused by runoff-driven mechanisms, such as delivery of sediment to river from upstream areas and/or bank instability under high flow conditions such as significant storm events in spring and summer months.

In order to protect the North and South Yellow Bank River tributaries before they merge into the Yellow Bank River, education of land owners about management practices were completed with a landowner survey, newsletters, radio programs, small group meetings, and field days. These were used to increase landowner involvement by increasing best management practices in both watersheds. Incentives and cost share was provided for installing best management practices.

Water sampling was done in 2015 with a Surface Water Assessment Grant (SWAG) and total suspended solids (TSS) for both forks were considerably less than the TSS concentration surrogate for 25 NTU based on analysis of paired turbidity/TSS data from turbidity impaired reaches in the Minnesota portion of the Lac qui Parle/Yellow Bank River system. This was determined in the development of the TMDL. There were no funds with this grant to conduct water quality samples but as mentioned above the TSS water samples from the SWAG grant indicate it is meeting the TMDL loading amounts.

A total of 65.84 acres were enrolled into Continuous CRP contracts, eleven open tile intakes replaced with a pattern tile design, six water and sediment control basins totaling 1,920 feet, and a streambank stabilization project that restored 120 linear feet of the South Fork Yellow Bank River were installed. The BWSR Water Erosion Pollution Reduction Estimator indicated TSS savings of 241 T/yr, soil savings of 372 T/yr and Phosphorus reduction of 313 lbs./year. This project worked closely with the Lac qui Parle Soil and Water Conservation District and Natural Resource Conservation Service to get practices implemented. Management practices began in 2012 and continued through fall 2015. With the recent buffer legislation requiring buffers on rivers and ditches landowners will continue installing buffer strips in the project area.
Section 1-Work Plan Review

A. Work Plan Changes

Change Order #1 added “drainage water management practices will receive incentive of $25 per acre up to 200 acres per landowner for holding water between spring planting and fall harvest” and added language to include special projects as listed in the Lac qui Parle-Yellow Bank River Fecal Coliform Bacteria, Turbidity and Low dissolved Oxygen TMDL Implementation Plan.

Change Order #2 included an executed amendment No.1 to Loan Agreement No. SRF0250 that increased the total loan agreement to $350,000.00 for Lac qui Parle-Yellow Bank Watershed District.

Amendment #1 was executed to extend the expiration date one year to 4/5/2016.

Change Order #3 increased Lac qui Parle-Yellow Bank Watershed District loan (SRF0250) amount to $450,000.00 and extended loan amendment to 7/30/2016. Extended the Yellow Medicine County loan (SRF0251) to 7/30/2016. The Lincoln County loan agreement (SRF0252) continued to end on 7/30/2015.

B. Activities and Tasks of Work Plan

The resource goal was to protect the North and South Fork Yellow Bank Rivers before they merge to form the Yellow Bank River from water quality impairments for turbidity and provide education on management practices while sustaining the surface water drainage requirements of the local agriculture based economy.

Objective 1: BMP Implementation

Best Management Practices were installed throughout the North and South Yellow Bank Rivers to prevent and reduce non-point source pollution. 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 and bacteria. The following BMP’s were completed.

**Buffer Strips:** A total of 65.84 acres were enrolled into Continuous CRP contracts with ten landowners. This was 83% of our goal of 80 acres.

**Constructed Conservation Practices:** A total of 6 water and sediment control basins were constructed. This was 67% of the goal to construct 9 water and sediment control basins. The project piggy-backed funding programs so landowners could receive 75% cost share. The federal EQIP program provided a straight payment rate for different components of the project and this resulted in one of the landowners receiving more than 75% of project so there was no cost share for two water and sediment control basins from this project.

**Replace Open Tile Intakes:** A total of 11 open tile intakes were replaced with alternative intakes of either rock inlets, pattern tile design or a water control structure. This represented only 32% of the goal of replacing 35 open intakes.
Special Project/Streambank Stabilization: A streambank project on the South Fork Yellow Bank River stabilized 120 linear feet using rocks and vegetative plantings.

Objective 2: Educational Outreach
Agriculture is the predominant land use in the watershed and improvements to water quality will require changes in the agricultural practices, which will require education about solutions that are economically viable to the agricultural community. The educational outreach included a Friendship Tour, four newsletters, two postcards, multiple radio programs, and two field day events 1.) Replaced open tile intakes with water control structure and rock inlets 2.) cover crops, and two buffer informational meetings. Landowners visiting with each other at meetings and field days were very effective. The Lac qui Parle SWCD also sent newsletter with BMP information. The SRF Loan program includes a “Septic System Owner’s Guide” by the University of Minnesota Extension that is mailed to homeowners along with an amortization schedule for their loan repayment. Photo contests are held annually with several winning entries from the Yellow Bank watershed. The photos are used in calendars, postcards, brochures and other correspondence with landowners.

Objective 3: Technical Assistance
Technical service for all program elements was provided by the Lac qui Parle-Yellow Bank Watershed District Clean Water Partnership coordinator as well as the Lac qui Parle NRCS Soil Conservation Technician and District Conservationist. Other technical assistance included preparation and submittal of project workplan and amendments, semi-annual reports, eLINK reporting and preparation of the Final Report. Continuing education and research for programs and new BMP’s. Grant promotion and education of landowners about new BMPs and programs that will enhance water quality. Building relationships with landowners through civic engagement practices.

Objective 4: Administrative Management
Project administration was provided by the Lac qui Parle-Yellow Bank Watershed District Administrator and Board of Managers. This included accounts payable and receivable, cost share, incentives and payroll. The grant income and expenses are tracked and recorded with Quick Books, monthly budget reports for the grant are prepared and reviewed with grant coordinator and managers. Office expenses include office supplies, telephone, postage, office rent, custodial services, internet services, copies and FAX services. The Board of Managers are given monthly updates and provide final approval for all proposed BMP projects.

Objective 5: SRF Loan Program
The SRF Loan program was used to upgrade forty-one Subsurface Sewage Treatment Systems and approved Agricultural Best Management Practices throughout the Lac qui Parle-Yellow Bank Watershed District. The program did not use any funds for approved BMP’s. The Watershed District, Yellow Medicine County and Lincoln County received a loan amount to be used in the portion of the county that lies in the watershed. This program will continue beyond
this grant period. Lincoln County did not use their funds so the funds were transferred to the Watershed District.

This grant did not expend all of its available funds and did not meet all of its goals for reduction. A survey was sent out to landowners prior to the grant application being submitted for funding. The results of that survey indicated interest in filter strips, construction projects and replacing open tile intakes. However when landowners were contacted again they were hesitate about signing contracts which may have been in correlation to the higher commodity prices in the beginning of the grant period. More recently prices are lower but landowners were still resistant to signing contracts. Informational meetings were held late summer and early fall to encourage landowners to sign up filter strip areas along watercourses and ditches as required by the Minnesota Buffer legislation. However not all the details of this legislation was available. We did get some additional contracts after the meetings but many still were hesitant because they had to do a dormant seeding in October or November.

Section II-Grant Results
Measurements:

Evaluation for this project included tracking and reporting all BMP installations, calculating soil, sediment and phosphorus savings from BMP's installed with the BWSR Water Erosion Pollution Reduction Estimator, reporting in eLINK, a reporting program for BWSR. The evaluation was continual throughout the grant period. The TEAM meetings or emails reviewed applications to fund and made recommendations for adjustments in work plan changes and amendments. The TEAM meetings also provided recommendations for additional outreach opportunities.

BMP Implementation:

The individual BMPs were totaled for the following savings of sediment, soil and phosphorus. Buffer Strips: A total of 65.84 acres were enrolled into Continuous CRP contracts with ten landowners. The BWSR Water Erosion Pollution Reduction Estimator indicated TSS savings of 164.4 T/yr., soil savings of 192.7 T/yr., and Phosphorus reduction of 243.9 lbs/yr. Constructed Conservation Practices: A total of six water and sediment control basins were constructed. The BWSR Water Erosion Pollution Reduction Estimator indicated TSS reduction of 36.7 T/yr., soil savings of 143.6 T/yr. and Phosphorus reductions of 22.80 lbs/yr. Open Tile Intakes Replaced: A total of 11 intakes were replaced with alternative intakes of either rock inlets, pattern tile design or a water control structure. From previous research BWSR agrees with a TSS reduction of .4 T/yr., and 1 lb/yr. of phosphorus for each intake. Total TSS reduction is 4.4 T/yr. and 11 lbs/yr. Special Project/Streambank Stabilization: The project stabilized 120 linear feet using field stone, native grasses, shrubs and trees. The BWSR Water Erosion Pollution Reduction Estimator indicated TSS of reduction of 35.7 T/yr. soil savings of 35.7 T/yr. and Phosphorus reduction of 35.7 lbs/yr.

Technical Assistance:
The Work Plan was completed and approved within sixty days of grant being executed. All semi-annual reports were submitted as required.

**SRF Loan Program:**

The SRF Loan program provides funds for landowners to upgrade subsurface sewage treatment systems and approved Agricultural BMP’s. The loan program was not used for Ag BMP’s. The SRF loan program allows a special tax assessment to be added to the homeowners’ property taxes with 3.5% interest for a period of 10 years. Loans can be paid off early with no penalty to homeowner. Loans paid off early are generally because property sold. Forty-one sewage systems were upgraded. A septic system improvement estimator was developed by the University of Minnesota, Water Resource Center in April 2013. This tool estimates 4,681 lbs/yr of BOD5, 2,586 lbs/yr of TSS, 196 lbs/yr of phosphorus, and 625 lbs/yr of nitrogen were saved with the septic system upgrades. Bacteria is also calculated with this estimator but cannot be totaled like the other pollutants. The Loan program continues until July 30, 2016. This program has been very popular in Lac qui Parle County as it is easy for the homeowner also the contractors are familiar with the program and regularly promote it.

**Products:**

2012 Protecting the North and South Fork Yellow Bank Rivers newsletter  
Final Report for Minnesota/South Dakota Friendship tour  
SSTS Brochure  
Septic Maintenance brochure  
2013 Summer Newsletter-Protecting North and South Fork Yellow Bank Rivers  
2014 Spring newsletter-Protecting North and South Fork Yellow Bank Rivers  
Erosion concern postcard  
Wildung Field Day Review  
2015 Spring newsletter Protecting North and South Fork Yellow Bank Rivers  
Post card for Open House Buffer meeting  
Post card for Cover Crop field day

**Public Outreach and Education:**

A Minnesota South Dakota Friendship Tour was held July 11, 2012 with about 100 exploring the Whetstone and Yellow Bank Rivers in air conditioned buses. Additional people followed behind to offer support for the event. Participants learned about unique geographic points of interest, water quality methods and result from an intensive sampling project in 2010 and 2011. Lunch was served and displays were set up for viewing. Comments following the tour were very positive and are still positive almost 4 years later.
Photo contests are held annually throughout the watershed with many winning photographs coming from the Yellow Bank watershed.

Field days were an excellent way to interact with landowners. A field day demonstrated alternative tile intakes and a water retention structure was held on September 3, 2014. Postcards were sent to landowners inviting them to the event and to learn about alternative intakes and other BMP’s available for incentives or cost share. A photo review of the day was made into a newsletter and mailed out to landowners in the watershed. Nine people were in attendance and asked a lot of questions throughout the event. Another field day learning about cover crops was held on November 4, 2015 that was located on the South Fork of the Yellow Bank River. Seventeen people were present along with experienced cover crop producers, NRCS staff, fertilizer manager, and an agronomist that provided information on cover crops. Everyone in attendance was interested and happy to get “on the ground” information about cover crops.

Four newsletters were sent to landowners with information about cost share, incentive payments and other programs available which would prompt calls for additional information. Following each mailing there were increased phone calls and office visits with questions about programs.

Radio programs held each Wednesday morning from April through October frequently featured programs and events in the Yellow Bank watershed. Frequently comments are heard from listeners about topics addressed during the program. Other topics have been brought up by listeners and have become radio programs after researching information for them.

An informational landowner meeting was held in a town hall to share information about the new Minnesota Buffer Law, CRP options and incentive opportunities. Three new contracts were signed following this meeting.

The Lac qui Parle-Yellow Bank Watershed District partnered with Lac qui Parle County Commissioners and Lac qui Parle SWCD to hold informational public meetings about the Riparian Protection & Water Quality Protection Act (New MN Buffer Law) on January 12, 2016. Two meetings were held in the county, one in the northern portion and the other one in the southern portion of the county. The meetings were very well attended with 62 and 74 landowners at each meeting. John Kolb, Rinke & Noonan Attorney at Law, was the main speaker for the meetings. Many questions were answered about this new law with the advice to wait to get final wording of the law from this legislation session.

Conversations between landowner, producers and agency staff have become more effective with all parties taking the time to listen to each other about the agricultural concerns and water quality.

**Long-term results:**

This project continued to build relationships with partnering agencies and landowners. Through TEAM meetings or email communication, the project addressed needs of the watershed and made adjustments as needed. The relationships with landowners were strengthened as projects were completed and through the field days held in the watershed. Landowners were thanked for
their contributions made towards improving the local water quality. There were no new relationships formed through this grant, however; relationships have been maintained even when not working in the neighboring counties. This is important because of future watershed work through the WRAPS process started in 2015 and future development of the One Watershed One Plan.

The Minnesota Buffer Law will ensure future filter strips are developed in the project area. Future grants will be written to implement the TMDL Implementation Plan in priority impaired areas. Additional information will be available as the WRAPS Report is developed for the watershed to be completed in 2019.

The Final Report will be posted on the Lac qui Parle-Yellow Bank Watershed District website at www.lqypywatershed.org. A radio program will be dedicated to sharing the results of this project.

It is very important to develop a relationship with landowners with field days and one-on-one conversations and do not forget to listen to their ideas and concerns.

Since we only used about half of the BMP Implementation dollars, future grant applications will target smaller watersheds and request funds for specific projects.

Section III – Final Expenditures

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**Notes:**
- Negative variances indicate cost overruns.
- Positive variances indicate cost savings.

**Total Budgeted Cost:** $42,500
**Total Actual Cost:** $40,000
**Total Variance:** $2,500

**Recommendation:** Review the variances and take corrective action as necessary.
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**Operating Income:**

- **Total Revenue:** $350,000
- **Total Operating Expenses:** $185,000
- **Operating Income:** $165,000

**Footnotes:****

1. Adjustments for inflation and deflation.
2. Projection of future income and expenses.
3. Analysis of financial ratios.
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