

ABSTRACT

TITLE: Snake River Watershed BMP's
PROJECT MANAGER: Lynda Peterson
ORGANIZATION: Snake River Watershed Management Board
ADDRESS: 214 NW Railroad Ave.
Mora, MN 55051
LEGAL CITATION: ML 1997, (Chap. 216, Sec. 15, Subd. 6c)
APPROPRIATION AMT.: \$100,000

STATEMENT OF OBJECTIVES: This project accelerated the implementation of action items of the 1996 Snake River Watershed Management Plan to apply Best Management Practices and facilitate decision making which affects water quality through utilization of the Snake River Watershed Management Board (SRWMB) Geographic Information System.

OVERALL PROJECT RESULTS: This project had 4 results: water quality monitoring; implementation of manure management plans; streambank and lakeshore protection; and pollution abatement systems. The SRWMB purchased two sets of weigh scales to assist farmers in knowing the actual amount of manure they are applying to their fields. This will help prevent excess nutrients from entering the lakes and rivers.

The SRWMB started implementation of a ten year surface water monitoring program. The goal is to complement project implementation efforts with a long term database of nutrient and sediment loading. It is also to document if project implementation efforts result in gradual improvement in water quality. The SRWMB purchased the equipment necessary for stream monitoring.

The SRWMB provided funding for 4,125 feet of streambank and lakeshore protection on high priority lakes and rivers. We also stabilized 2,428 feet of gully erosion projects on Cross Lake. These projects were prioritized high due to the excess amount of sediment entering the lakes and rivers. This sediment contributes to poor water quality. The projects totaled over \$137,363. The SRWMB provided \$64,717 from LCMR.

The SRWMB also provided funding for pollution abatement systems. We had one feedlot which was improved. It is located along a high priority creek within the watershed. Implementation of this project will reduce pollutants from entering the creek; collect and store contaminated run-off and provide a more timely spreading of manure to the fields by eliminating winter spreading of manure.

PROJECT RESULTS USE AND DISSEMINATION: Implementation of the best management practices within the Snake River Watershed will continue through the Soil & Water Conservation Districts, Natural Resources Conservation Service, and the Snake River Watershed Management Board. The results from the water monitoring program will help in prioritizing implementation of projects.

JUN 30 1999

FINAL WORK PROGRAM

DATE OF REPORT: June 30, 1999
DATE OF NEXT STATUS REPORT: June 30, 1999
DATE OF WORK PROGRAM APPROVAL: July 1, 1997
PROJECT COMPLETION DATE: June 30, 1999
LCMR WORK PROGRAM 1997: (B11)

I. PROJECT TITLE: Snake River Watershed BMPs (B11)

Project Manager: Lynda Peterson, District Manager
Affiliation: Snake River Watershed Management Board
Mailing Address: 214 NW Railroad Ave., Mora, MN 55051
Phone Number: (320) 679-3982 Fax: (320) 679-4692
Web Page Address: Lap@mn.nrcs.usda.gov

Total Biennial Project Budget:

\$ LCMR:	\$100,000.00
-\$ LCMR Amount	
Spent:	\$100,000.00
= \$ LCMR BALANCE:	\$ 0.00

A. Legal Citation: ML 1997, (Chap. 216), Sec. (15), Subd. (6c)

Appropriation Language: This appropriation is from the future resources fund to the Board of Water and Soil Resources for an agreement with the Snake River Watershed Management Board to accelerate the implementation of the 1996 Snake River Watershed Management Plan.

B. Statue of Match Requirement: Not applicable

II. PROJECT SUMMARY AND RESULTS: This project accelerated the implementation of action items of the 1996 Snake River Watershed Management Plan to apply Best Management Practices and facilitate decision making which affects water quality through utilization of the SRWMB Geographic Information System. Many high priority problems were not corrected in the past due to the excessive cost and the low maximum amount of cost-share money available per project under the traditional cost-share programs. The type, number and extent of problems on the Snake River and tributaries were unknown prior to the completing of a resource assessment by the Snake River Watershed Management Board. This project enabled a priority rating basis on the impact on the water quality to be established according to a systemic plan, spending the available dollars on projects with the greatest results. Priority was given to shoreline erosion projects on Pokegama, Cross, Fish and Knife Lakes. The higher priority is due to the development on the lakes, the active lake associations, and the poor water quality present on the lakes. Priority was also given to feedlots within the shoreland area of these lakes. The results of the implementation of Best Management Practices are being measured and visible through the water monitoring program.

III. PROGRESS SUMMARY: The SRWMB has implemented their long term water monitoring program. They have purchased weigh scales to assist in measuring the amount of manure which is applied to the fields. Fifteen projects, 14 shoreland erosion protection projects and one feedlot project, have been completed as of June 30, 1999. For more information see IV.

IV. OUTLINE OF PROJECT RESULTS:

Result 1: Streambank and Lakeshore Protection – 400 feet (Stabilization of eroding stream banks with rock rip-rap or structures)

Budget: \$64,717

Balance: \$ 0

- Results:
- a) Completed 4,125 feet of streambank and lakeshore protection on high priority lakes and streams, such as Cross and Pokegama Lakes totaling \$33,630.
 - b) Stabilized 2,428 feet of gully erosion projects on Cross Lake totaling \$31,087.
 - c) Match (when possible) other sources of cost-share dollars to expedite high priority projects, total project dollars completed are \$137,363.
 - d) Less sedimentation in streams and lakes
 - e) Reduce the loss of trees in streams and causing obstruction
 - f) Improve beauty of streams and shorelines

Completion Date: September 1, 1998

Result 2: Manure Management Plans – 5 complete plans implemented (Developing a plan to efficiently utilize manure produced, according to the needs of each crop produced)

Budget: \$1,400

Balance: \$0

- Results:
- a) On-site assistance by SRWMB personnel in sampling and interpretation for education for livestock producers
 - b) Manure testing which will provide awareness to livestock producers in the value of manure in dollars and information gathered will be used for workshops
 - c) Purchased two sets of weigh scales to assist farmers in knowing the actual amount of manure they are applying to their fields, so overapplying of manure is not applied totaling \$1,398.75
 - d) Reduction in application of commercial fertilizer on fields already high in some nutrients.
 - e) Promotion of soil testing to determine need for crop grown with SRWMB personnel taking samples and make interpretation of results for educational purposes
 - f) Reduce spreading manure near streams, creeks and drainageways utilizing GIS maps and information.

Completion Date: June 1, 1999

Result 3: Pollution Abatement Systems – 1 system (Provide an approved storage facility as an alternative to winter spreading, collect and store contaminated run-off, reduce run-off area with diversions and utilized sediment basins and filter strips to reduce sedimentation.)

Budget: \$18,500

Balance: \$0

- Results:
- a) Reduction of pollution in streams
 - b) Better management of animal waste.
 - c) Completed one project near Pokegama Creek.
 - d) More timely spreading of manure with better utilization of nutrients.
 - e) Less contamination of normal run-off
 - f) Cleaner streams and lakes

Completion Date: November 1, 1997

* Only one project was completed. There was little interest in feedlot pollution abatement systems due to the present farm economy.

Result 4: **Water Quality Monitoring** - The goal was to complement project implementation efforts with a long term database of nutrient and sediment loading. The purpose was to document if project implementation efforts result in gradual improvement in water quality.

Budget: \$15,383.00

Balance: \$0

Results:

- a) Completed surface water monitoring on 5 lakes in 1998 totaling \$2,759.02.
- b) Completed the installation of stilling wells, ultrasound monitors and equipment necessary for the stream monitoring program that will be implemented in 1999 totaling \$13,112.45.
- c) Assessment of data collected is completed by MPCA and the SRWMB
- d) An evaluation of pollutant loads from subwatersheds will be ranked and future best management projects will be implemented in these high priority areas. Evaluation will be completed after 1999 monitoring to determine if best management practices improve water quality.

Completion Date: June 30, 1999

* The dollars expended for this project increase due to revising the SRWMB budget and needing the levy dollars to match other grants.

V. **DISSEMINATION:** The existing information program through newspapers, lake association newsletters, SWCD newsletters and at public meetings will continue to publicize the project, goals and objectives and contacts for information. The SWCD technicians serve as technical advisors to both the Snake River Watershed Management Board and the Citizens Advisory Committee and inform landowners/operators on the project in the planning process. The SRWMB coordinator has and will continue to report and discuss the project at organization and agency meetings. Data collected will be available for sharing on the SRWMB Geographic Information System.

VI. **CONTEXT:**

A. **Significance:** The Snake River watershed covers an area of approximately 986 square miles, 11 sub-watersheds, 8 important lakes to the economy of the area, incorporated cities, many important wetland areas, agriculture land and a marked increase of rural developments on the rivers. The cooperative coordination of efforts to improve, enhance and protect the quality of land and water resources is beyond the jurisdiction, capability finances and man-power of any existing unit of government, agency or organization.

The SRWMB, a joint powers board between four counties and pertains to that area within the Snake River watershed with a purpose of coordinating the comprehensive county water plans, providing for the joint and cooperative management of county water plans and other actions necessary to protect and enhance the water and land resources and identify existing and potential problems and opportunities for the protection, management and development of water and related resources. The counties of Isanti and Chisago, with 1.7 percent of the watershed are not formally included in the joint power agreement, have agreed to work cooperatively with the SRWMB to resolve environmental issues within their counties.

The total watershed needs to be treated as one entity. The resource assessment completed on the Snake River and the tributaries on a sub-watershed basis as the first step helped establish high priority areas and provided direction for the development of the Snake River Watershed Management Plan. Traditional and non-traditional methods will be used to solve or reduce the effects of the identified problems.

By laws, policy, procedure, work plans and other administrative actions are important and necessary but the number one priority of the SRWMB is the implementation of projects. They are ready to initiate conservation measures (BMP's) to the land, which will cause a favorable change of the water quality within the Snake River Watershed.

- B. Time:** Implementation of Best Management Practices within the Snake River watershed is an on-going program beginning in 1995. Funds beyond the LCMR grant period will come from the Joint Powers Board member counties and other public and private grants will be applied for to meet budget requirements. Projects funded with LCMR grant money will be complete before June 30, 1999.

C. Budget Context:

	July 1995 - June 1997 Prior expenditures <u>On this project</u>	July 1997 - June 1999 Proposed expenditures <u>on this project</u>
1. LCMR	\$0.00	\$100,000.00
2. Other State		
BWSR	\$ 60,000.00	\$ 60,000.00
DNR	\$ 60,000.00	\$ 60,000.00
MPCA	\$ 60,000.00	\$ 60,000.00
3. Non State Cash		
Member Counties	\$ 77,703.00	\$ 90,000.00
Land Owners	\$ 10,000.00	\$ 60,000.00
TOTALS	\$207,703.00	\$370,000.00

	July 1999 - June 2001 Anticipated future Expenditures <u>On this project</u>
1. LCMR	\$0.00
2. Other State	\$200,000.00
3. Non State Cash	\$190,000.00
TOTALS	\$390,000.00

BUDGET:

BUDGET

Water Quality Monitoring	\$ 15,383.00
Implementation - Actual Project Cost	
Streambank/Lakeshore Protection	\$ 64,717.00
Manure Management Plans	\$ 1,400.00
Pollution Abatement Systems	\$ 18,500.00
TOTAL	\$100,000.00

VII. COOPERATION:

Will receive LCMR dollars

- ⇒ Land owners/operators installing BMP's will receive partial funding using an established cost-share formula.
- ⇒ Monitoring equipment suppliers, testing labs and SRWMB personnel for expenses associated with monitoring program.
- ⇒ Suppliers of specific equipment and supplies.
- ⇒ Labs, suppliers and SRWMB personnel connected with manure and soil testing.
- ⇒ Suppliers of GIS data, programs or operator to store and/or retrieve data to assist in obtaining program results.
- ⇒ Suppliers of materials used for information/education workshops and programs.

A. Participate in the project without compensation from LCMR dollars.

- | | |
|------------------------------------|-------------------|
| a. Citizens Advisory Committee | g. Kanabec County |
| b. Mille Lacs County | h. Aitkin County |
| c. Knife Lake Improvement District | i. Pine County |
| d. Pokegama Lake Association | j. Pine SWCD |
| e. Cross Lake Association | k. Aitkin SWCD |
| f. Mille Lacs SWCD | l. Kanabec SWCD |

(The citizens advisory committee meets as necessary to evaluate project proposals, assign priority rating and make recommendation to the SRWMB (8 to 10 mtgs./yr.). The SWCD technicians/county water planners serve as technical advisors to the SRWMB and plan, design and supervise construction/implementation of the BMP's. The improvement district/lake associations seek out and submit project proposals, which will impact the water quality within the Snake River watershed and contribute funds for some studies.)

VIII. **LOCATION:** The Snake River watershed is part of east-central Minnesota and includes portions of Pine, Kanabec, Mille Lacs and Aitkin counties. See attached maps.

IX. **REPORTING REQUIREMENTS:** Periodic work program progress will be submitted not later than December 1, 1997 and 1998. A final work program report and associated products will be submitted by June 30, 1999, or by the completion date as set in the appropriation.

FINAL WORK PROGRAM

JUN 30 1999

DATE OF REPORT: June 30, 1999
DATE OF NEXT STATUS REPORT: June 30, 1999
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IV. **OUTLINE OF PROJECT RESULTS:**

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- A. Participate in the project without compensation from LCMR dollars.
- | | |
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