

LINCOLN COUNTY WATER MANAGEMENT PLAN AMENDMENT - JANUARY 1, 2017



5 - Year Implementation Plan

January 1, 2017 - December 31, 2021

Extended to December 31, 2028

TABLE OF CONTENTS

Executive Summary

| | |
|--|-----|
| Plan Administration..... | 1 |
| Purpose of the Local Water Management Plan..... | 1 |
| Area of Concern | 1 |
| Description of Priority Concerns and Summary of Actions and Projected Costs..... | 2-3 |
| Consistency of Plan with Other Plans Developed Locally | 3 |
| Past Accomplishments (Based on Priority Concerns)..... | 3-6 |
| Past Accomplishments Section Includes: | |
| • Ground Water Protection for the Verdi Well Field | 3 |
| • Surface Water Quality | 4 |
| • Erosion and Sediment Control on Agricultural Land | 4-5 |
| • Lake Management Improvement and Recreational Opportunities | 6 |
| • Surface Water Runoff and Drainage Addressing Runoff Volume | 6 |

Implementation Plan

| | |
|---|-------|
| Abbreviations | 1 |
| Impaired Waters and TMDLS | 1-3 |
| Implementation to Address Priority Concerns | 3-13 |
| Implementation Section Includes: | |
| • Ground Water Protection for the Verdi Well Field; Missouri Watershed..... | 3 |
| • Surface Water Quality | 5-6 |
| • Erosion and Sediment Control on Agricultural Land | 6-11 |
| Individual Watershed Actions: | |
| ○ Missouri Watershed | 8 |
| ○ Redwood Watershed | 8 |
| ○ Lac qui Parle Watershed | 9 |
| • Lake Management Improvement and Recreational Opportunities | 11-12 |
| • Surface Water Runoff and Drainage Addressing Runoff Volume | 12-13 |

LINCOLN COUNTY LOCAL WATER MANAGEMENT PLAN

-2017 AMENDMENT -

EXECUTIVE SUMMARY

The Lincoln County Local Water Management Plan Update was in effect for 6-years from August, 2009 – December, 2015. This amendment will cover an implementation period of January 1, 2017 – December, 2021.

PLAN ADMINISTRATION:

The County Commissioners at their March 1, 2016, regular board meeting approved a Resolution to Amend the Lincoln County Comprehensive Local Water Management Plan.

Following is the 2016 Water Management Task Force members and the agency they represent:

Rick Hamer, County Commissioner, Chairperson
Joe Drietz, County Commissioner, Vice Chairperson
Pauline VanOverbeke, Lincoln SWCD, Water Plan Coordinator
Tim Dritz, Yellow Medicine River Watershed District
Daniel Christianson, Lincoln SWCD
Joe Weber, Lincoln-Pipestone Rural Water
Dustin Hauschild, Lincoln Co. Highway Dept.
Amber Scholten, Lincoln County Civil Defense Director
Robert Olsen, Lincoln County Environmental Office
Dennis Klingbale, Cities
Merle Rost, Townships
Richard Hauschild, citizen

PURPOSE OF THE LOCAL WATER MANAGEMENT PLAN:

Prepare and adopt a local water management plan that meets the requirements in section 103B.315.

Purpose of the Lincoln County Local Water Management Plan:

- 1) To identify existing and potential problems and opportunities for the protection, management and development of water and related land resources; and*
- 2) To develop objectives and carry out a plan of action to promote sound hydrologic management of water and related land resources and effective environmental protection.*

AREA OF CONCERN:

Lincoln County is a partner in the Yellow Medicine One Watershed One Plan, therefore, this plan limits the involvement in the Yellow Medicine Watershed. The implementation plan focus is on three watersheds: Lac qui Parle Watershed, Redwood Watershed, and the Missouri Watershed with some portions including the Yellow Medicine Watershed.

DESCRIPTION OF PRIORITY CONCERNS AND SUMMARY OF ACTIONS AND PROJECTED COSTS:

Priority concerns along with a summary of the actions and projected costs:

- *Ground Water Protection for the Verdi Well Field.* The Verdi Well Field is the main source of water supply for: all of Lincoln County and Pipestone County and parts of 7 other counties: 3,400 rural customers, 29 cities, and 120 rural customers using more than one million gallons per year per customer.
 - *Actions include;* working with feedlots, septic systems, seal abandoned wells, work with easement and cost-share projects, conservation tillage, Verdi Wellhead Protection Plan and Implementation, pursue grant funds, address nitrogen or the potential to contaminate drinking water supplies through implementation of cover crops, etc., and increase awareness and education. Projected costs per year-\$230,250. See pages 3-4 of the Implementation Program for detailed actions.
- *Surface Water Quality Deterioration focusing on MPCAs list of TMDLs and Impaired waters. TMDL-South Branch, Yellow Medicine River for Fecal Coliform. Impaired waters include various river reaches listed on Pages 2-3 and the following Lakes: Dead Coon, Benton, Perch, Shaokatan and Hendricks. TMDLs underway: Lac qui Parle River-Yellow Bank-Bacteria, Turbidity, and Low Dissolved Oxygen; Lake Shaokatan-Excess Nutrients; Redwood River-Fecal Coliform and Turbidity; and Minnesota River-Turbidity.* Our primary focus will be on Nutrients and Bacteria in the TMDL sites listed. Other sites when added to the TMDL list, will be considered in this section of the priority concerns.
 - *Actions include;* work with high priority feedlots and nutrient management plans, septic systems, pursue grant funds for watershed based activities and education. Projected costs per year-\$150,000. See page 5 of the Implementation Program for detailed actions. See pages 5 of the Implementation Program for detailed actions.
- *Erosion and Sediment Control on agricultural land primarily gully erosion and concentrated flow with several priority areas throughout Lincoln County' including: TMDL-South Branch, Yellow Medicine River for Fecal Coliform. Impaired waters including various river reaches listed on Pages 2-3, and lakes including: Dead Coon, Benton, Perch, Shaokatan and Hendricks. TMDL/s underway: Lac qui Parle River-Yellow Bank-Bacteria, Turbidity and Low Dissolved Oxygen; Lake Shaokatan-Excess Nutrients; Redwood River-Fecal Coliform and Turbidity and Minnesota River-Turbidity.* Reducing the volume of sedimentation, potential attached pollutants and nutrients reaching County lakes, streams, rivers and wetlands, will improve surface and ground water quality, through implementing Best Management Practices particularly in listed priority areas.
 - *Actions include;* utilize the WRAPS/TMDL/1W1P information to target high priority resources and implementation efforts, reduce water and soil erosion sediment loads through implementation of a variety of conservation practices (such as: WSCBs, waterways, grade stabilizations, conservation tillage, buffers, filters, feedlots, tree programs, etc.), pursue funding, work with the watersheds to work on and complete: TMDLs/WRAPS/1W1Ps, well sealing, rock inlets, wetlands, wildlife habitat projects, perpetual easements and education. Projected costs per year-\$2,767,100. See pages 6-10 of the Implementation Program for detailed actions.

- *Lake Management Improvement (water quality) and Recreational Opportunities targeting Lake Benton, Lake Shaokatan, and Lake Hendricks.* Lincoln County has six major lakes having a total water surface area of about 6,480 acres with an average depth ranging from three to twelve feet and many smaller lakes. We will focus on major Recreational Lakes in Lincoln County, as they represent the greatest potential for additional recreational development including Lake Benton, Lake Shaokatan and Lake Hendricks.
 - *Actions include;* improve the water quality of the lakes, implement BMPs to prevent surface erosion and raise public awareness through education. Projected costs per year-\$219,000. See pages 10-11of the Implementation Program for detailed actions.
- *Surface Water Runoff and Drainage addressing runoff volume and water quality through drainage management.* In this section, we will focus on the Wetland Conservation Act, Wetland Banking and the Lincoln County Public Drainage Ditch Systems.
 - *Actions include;* implementation of restore wetlands, grade stabilizations, administer WCA, wetland banking, floodwater storage, and education. Projected costs per year-\$244,500. See pages 11-12 of the Implementation Program for detailed actions.

Total Implementation dollars needed per year: \$3,461,000

CONSISTENCY OF PLAN WITH OTHER PLANS DEVELOPED LOCALLY:

Lincoln County Comprehensive Local Water Management Plan is also the plan Lincoln Soil and Water Conservation District adopts as its Comprehensive Plan.

The Yellow Medicine One Watershed One Plan is the plan in place for the entire Yellow Medicine Watershed, however, parts of the Implementation Program do still address the Yellow Medicine Watershed.

PAST ACCOMPLISHMENTS:

Some of the major accomplishments under Lincoln County’s previous local water management plan from January 1, 2009 to December 31, 2015 include:

Priority Concern: Groundwater Protection for the Verdi Well Field:

- Applied for and received the FY2011; Clean Water Fund Grant for the Verdi Wellhead Protection Area Project for \$184,210
 - Practices included: Nutrient Management Plans-

| | |
|--------------------------|---|
| ▪ 6,595 acres (36 plans) | Nutrient Management Plans |
| ▪ 5,259 acres (32 plans) | Nitrogen Stabilizer/Split N Application |
| ▪ 108 acres (1 plan) | Variable Rate Technology |
| ▪ 51.2 acres (2 plans) | Filter Strip Incentives |
- Well Sealing; Big Sioux Watershed; 14 wells sealed (included in total count of wells sealed)
- Through the Water Management Task Force; provided funds for water samples on two wells located in the Verdi Wellhead Protection Area

Priority Concern: Surface Water Quality

- Completed 101-Nutrient Management Plans through the Conservation Stewardship Program
- 300 letters sent to landowners in the South Branch of the Yellow Medicine River in which 25 landowners were in attendance at a meeting held in Taunton in 2009 concerning cost-share/incentive programs.

Priority Concern: Erosion and Sediment Control on agricultural land primarily gully erosion and concentrated flow

- Conservation Practices installed through EQIP (no numbers reported from NRCS in 2011)
Flood Recovery and State Cost-Share:

- 206 Each Water & Sediment Control Basins
- 29.8 Acres Waterway
- 2 Each (1-600 AU; 1-400 AU) Ag Wastes
- 8,200 Feet Field Windbreaks
- 56.9 Acres Farmstead Shelterbelts
- 10,725 Acres Nutrient Management
- 640 Acres Cover Crops
- 4,120 Acres Rotational Grazing
- 7,500 Acres Pest Management
- 14 Each Alternative Intakes
- Tree Program; 153,300 trees sold;
 - 144.65 Acres Farmstead Shelterbelts
 - 87.5 Acres Riparian Buffer Plantings
 - 8.3 Acres Working Lands Initiative Plantings
 - 61.9 Acres Wildlife Tree Plantings
 - 41,543 Feet Living Snow Fences
 - 10,870 Feet Field Windbreaks
- Working Lands Initiative:
 - 111.8 Acres Easement/Wetlands
 - 1,007.9 Acres Incentive
 - 2 Each Restorations
- Water Management Task Force Dollars:
 - 112 Each Wells Sealed
 - 33 Each Alternative Intakes
 - 14 Landowners Conserving Use Acres; summer construction
- Lac qui Parle River Watershed;
 - Conservation Practices; funding through Clean Water Legacy:
 - 54.9 Acres Filter Strips
 - 1,125 Sq Ft Rain Garden
 - Staff attended Lac qui Parle Technical Team Meetings; WRAPS meetings
 - Assisted with the tillage transect survey

- Redwood River Watershed;
 - Conservation Practices; funding through Clean Water Partnership, Federal 319, Clean Water Legacy and Clean Water funds:
 - 31 Each Water & Sediment Control Basins
 - 3.1 Acres Waterway
 - 1,160 Acres Nutrient Management
 - 38.5 Acres Farmable Wetland
 - 723.8 Acres No-Till; Strip Till
 - 34 Each Alternative Intakes
 - 2 Each Conserving Use Acre Contract
 - 2 Each Grade Stabilization Projects (design; Area II)
 - Supervisor represents the SWCD at the RCRCA Joint Powers meetings
- Yellow Medicine River Watershed;
 - Applied for and received a FY10-Clean Water Fund for the Yellow Medicine Project for \$90,125
 - Applied for and received a FY13-Clean Water Fund Grant for the Lake Shaokatan and Yellow Medicine Sub-Watersheds Implementation Project for \$197,473
 - Conservation Practices; funding through Shaokatan Sportsmen Club, Clean Water Legacy and Clean Water Funds:
 - 215.98 Acres Filter Strip
 - 38 Each Water & Sediment Control Basins
 - 1 Each Feedlot; Filter Strip/Sediment Trap
 - 38.5 Acres Farmable Wetland
 - 2.7 Acres CRP Incentive
 - 139 Each Alternative Intakes
 - 7 Each Wetland Restorations
 - 3 Each Grade Stabilization Projects (design; Area II)
 - Staff participated in the following: Yellow Medicine Technical Team meetings, WRAPS meetings including the Interactive Community Assessment an Civic Engagement and stressor identification
 - Supervisor participated in the Yellow Medicine Watershed Advisory Committee meetings
 - Applied for and interviewed for the FY14-CWF-Targeted Watershed Project for the Yellow Medicine Watershed; however did not receive the funding
- Participated in the Missouri River Basin team/WRAPS meetings
- Applied for and received the Yellow Medicine One Watershed One Plan and participated in all of the meetings that were held for the plan completion
- CRP Contracts; 842 contracts developed
- Working Lands Initiative;
- Drill Program; total of 8,447.9 acres planted with the No-Till Drills

- Ag BMP loans; from 2010-2015; provided \$1,479,078.50 to 91 borrowers for low interest loans for septic system upgrades, manure/feedlot systems, conservation practices and conservation tillage equipment
- WRP/RIM 2-projects; 198.1 acres
- Education; provided education and outreach for the various grants, watershed projects and conservation programs through newsletters, news releases, website and fair booths
- Environmental Office;
 - Feedlots; brought 27 feedlots into compliance and closed out 43 that were not in compliance
 - Septic Systems; permitted 270
 - Alternative Intakes; replaced 15 open side inlets with alternative intakes
 - Drainage; encourage smart drainage practices by producers who are using the public drainage systems

Priority Concern: Lake Management Improvement and Recreational Opportunities targeting Lake Benton, Lake Shaokatan, and Lake Hendricks

- TMDL landowner meeting was held for and at Lake Shaokatan with 65 people in attendance.
- Education; provided outreach for the lakes through one-on-one contacts

Priority Concern: Surface Water Runoff and Drainage addressing runoff volume and water quality through drainage management

- Area II MN River Basin projects located in Lincoln County (projects with an * were previously reported under individual watershed projects):
 - Drammen 15 Grade Stabilization Project; 2009; Redwood River Watershed*
 - Drammen 14 Grade Stabilization Project; Redwood River Watershed*
 - Hansonville 22 Grande Stabilization Project; Lac qui Parle Watershed
 - Marshfield 24 Grade Stabilization Project, Redwood River Watershed*
 - Limestone 1 Road Retention Project, Yellow Medicine River Watershed
 - Limestone 11 Grade Stabilization Project, Yellow Medicine River Watershed
 - Limestone 26 Grade Stabilization Project, Yellow Medicine River Watershed
- Wetland Project involving two landowners and the Hendricks Township Section 36 for 20 acres and Royal Township Section 31 for 6.6 acres with a township road between the two sections
- Wetland Conservation Act; 4,270 contacts
- Education; provided education and outreach for the WCA program through one-on-one contacts, newsletters, website, and news releases.

LINCOLN COUNTY LOCAL WATER MANAGEMENT PLAN

-2017 AMENDMENT -

IMPLEMENTATION PROGRAM

The implementation program identifies the following: Priority Concerns, Goals, Objectives, and Actions to be implemented; when the action will be accomplished; responsible agencies; and cost/funding sources. Some costs are for staff time only.

ABBREVIATIONS:

The following abbreviations represent the responsible local unit of government and/or the possible funding source for each action item.

- Area II-Area II MN River Basin Projects
- BWSR-Board of Water and Soil Resources
- Co.-County Water Plan/Water Management Task Force, Environmental Office, Highway Department, Drainage Authorities
- DNR-Department of Natural Resources
- FSA-Farm Service Agency
- NPOs-Non-Profit Organizations (Pheasants Forever, Lake Associations, Sportsmen Groups, etc.)
- LID-Lake Improvement Districts (Lake Benton, Lake Shaokatan, Lake Hendricks)
- LPRW-Lincoln-Pipestone Rural Water
- NRCS-Natural Resources Conservation Service
- PSWCD-Pipestone Soil and Water Conservation District
- SWCD-Soil and Water Conservation District
- SWPTSA-Southwest Prairie Technical Service Area
- TWP-Townships
- USFWS-US Fish and Wildlife Service
- Watersheds: Lac qui Parle-Yellow Bank Watershed District, Redwood-Cottonwood Rivers Control Area (RCRCA), Missouri Watershed, Yellow Medicine Watershed District

The abbreviations in **BOLD** illustrate the lead agency under the specific actions.

IMPAIRED WATERS AND TMDLS:

The federal Clean Water Act requires the MPCA to:

1. Assess all waters of the state to determine if they meet water quality standards.
2. Create a list of impaired waters that do not meet standards, and update the list every even-numbered year.
3. Set pollutant-reduction goals needed to restore impaired waters, called the total maximum daily load

States must develop a list of impaired waters that require total maximum daily load (TMDL) studies, and submit an updated list to the U.S. Environmental Protection Agency every even-numbered year for approval. The TMDL is the maximum amount of a pollutant a body of

water can receive without violating water quality standards, and an allocation of that amount to the pollutant's sources

The Impaired Waters List submitted to the EPA consists of:

- The 303(d) (TMDL) list — impairments that require TMDL studies
- The inventory of impaired waters —including waters in need of TMDLs, those with completed TMDLs that have not yet been restored, non-pollutant impairments, and impairments due to natural sources
- Bodies of water that are impaired for mercury (for fish tissue and water column concentration exceedances) and part of the Statewide Mercury TMDL.

IMPAIRED WATERS/TOTAL MAXIMUM DAILY LOAD (TMDL):

Below is the MPCA Clean Water Act Section 303 (d) list of impaired waters in the county.

| <u>Reach</u> | <u>Affected Use</u> | <u>Pollutants/Stressors</u> |
|--|---------------------|--|
| Lac qui Parle River, Headwaters (Lake Hendricks 41-0110-00 to Lazarus Creek) | Aquatic Recreation | Fecal Coliform |
| | Aquatic Life | Fish Bioassessments |
| | Aquatic Life | Turbidity |
| Coon Creek, Lake Benton to Redwood River #07020006-511 | Aquatic Recreation | Fecal Coliform |
| | Aquatic Life | Fish Bioassessments |
| Spring Creek, Headwaters to MN/SD border 10170203-518 | Aquatic Life | Aquatic Macroinvertebrate |
| Medary Creek, Headwaters to MN/SD border 10170202-501 | Aquatic Life | Aquatic Macroinvertebrate |
| <u>Lakes</u> | <u>Unit ID#</u> | <u>Affected Use</u> <u>Pollutants/Stressors</u> |
| Benton | 41-0043-00 | Aquatic Recreation Nutrient* |
| Benton Tissue | 41-0043-00 | Aquatic Consumption Mercury in Fish |
| Dead Coon | 41-0021-01 | Aquatic Recreation Nutrient* |
| Dead Coon Tissue | 41-0021-01 | Aquatic Consumption Mercury in Fish |
| Hendricks | 41-0110-00 | Aquatic Recreation Nutrient* |
| Hendricks Tissue | 41-0110-00 | Aquatic Consumption Mercury in Fish |
| Unnamed | 41-0128-00 | Aquatic Life Aquatic macroinvertebrate |
| Unnamed | 41-0128-00 | Aquatic Life Aquatic Plant Bioassessments |
| Stay | 41-0034-00 | Aquatic Recreation Nutrient* |
| Steep Bank | 41-0082-00 | Aquatic Recreation Nutrient* |

*Nutrient = Nutrient/Eutrophication; Biological Indicators

Lower Minnesota River TMDL; Low Dissolved Oxygen-2004; the implementation plan addresses one-impairment in the lower portion of the Minnesota River during low flow conditions. With the main sources of excess phosphorus includes wastewater treatment facilities, direct discharges of sewage, storm water and agriculture. Results from the TMDL study indicate that, with phosphorus reductions, it is possible to meet the dissolved oxygen standard in the Lower Minnesota River during low flow conditions.

IMPLEMENTATION TO ADDRESS PRIORITY CONCERNS:

This section establishes the implementation program for local water management to address priority concerns by watersheds. Action items describe specific measures that the County intends to implement, in cooperation with appropriate local, state and federal agencies and organizations. Action items listed below were reached by consensus and are not necessarily in rank order. Funding is per year unless noted.

Some of the “Action” items where noted will address the Yellow Medicine Watershed, even though the County will follow the Yellow Medicine One Watershed One Plan.

Priority Concern: *Groundwater Protection for the Verdi Well Field.*

GOAL: *Protect the public water supply from potential contaminant sources due to land use activities; and establish and maintain a Wellhead Protection Plan (WHP) continuing public education and information program.*

Objective: Encourage property owners to adopt tillage, chemical and nutrient BMPs for cropland within the Drinking Water Supply Management Area (DWSMA).

Action: Work with feedlot owners/operators in the DWSMA area and contact any potential new operators to discuss feedlot operations. Develop an understanding of local drinking water issues and the benefits of implementing the wellhead protection plan.

Who: Co, LPRW, SWCD When: 2017-2021 Funding: \$2,500 Co, LPRW, SWCD

Objective: Continue to upgrade septic systems in the DWSMA and encourage closing of abandoned wells.

Action: Conduct inspections of septic systems in the DWSMA and implement full compliance with state and county SSTS requirements within the DWSMA to prevent the contamination of the water supply in the DWSMA by non-complying septic systems. Continue to upgrade 5 non-complying systems per year in the DWSMA.

Who: Co When: 2017-2021 Funding: \$45,000 MDA

Action: Provide cost-share assistance to landowners in the Verdi DWSMA and the entire Big Sioux Watershed to properly seal their abandoned wells. The Verdi DWSMA is a high priority for well sealing and sealing as funds allow.

Who: SWCD When: 2017-2021 Funding: Co, BWSR, MDA

Objective: Inventory and prioritize areas within the DWSMA for adoption of set-a-side and buffer easement programs.

Action: Work with property owners in the DWSMA to encourage enrollment in easement and cost-share programs such as CRP/CCRP, RIM, EQIP, ACEP, and adoption of buffer strips. Increase the number of acres of easement programs by 10 acres per year.

Who: **SWCD, FSA, PSWCD** When: 2017-2021 Funding: \$100,000 BWSR, FSA, NRCS

Action: Increase conservation tillage practices in the DWSMA, reducing sedimentation in the surface waters recharging the ground water through promotion of the Ag BMP Loan program for upgrading conservation tillage equipment to reduce erosion and runoff by targeting one landowner per year or as loan funds permit in the Verdi Water Supply Management Area.

Who: **SWCD, NRCS** When: 2017-2021 Funding: \$50,000 MDA

Objective: Protect the groundwater and the drinking water sources for the Verdi Well Field.

Action: Continue to support and contribute staff time to the Verdi Wellhead Protection Plan and implementation.

Who: **LPRW, SWCD** When: 2017-2021 Funding: \$1,000 SWCD

Action: Pursue grant funds through the BWSR for protection of the Verdi Well Field groundwater and drinking water sources.

Who: **PSWCD, SWCD, LPRW** When: 2017-2021 Funding: \$3,500 LPRW; SWCD

Action: Work with landowners/operators to address nitrogen, or the potential to contaminate drinking water supplies through the implementation of cover crops, split application of nitrogen, inhibitors for manure, and to seed down alfalfa in the Verdi Wellhead Protection Project area by 20%.

Who: **PSWCD, SWCD, LPRW** When: 2017-2021 Funding: \$25,000 BWSR

Action: Encourage water conservation efforts, land use and the installation of best management practices which recharge groundwater in the Missouri Watershed through one-on-one contacts, newsletters, and websites.

Who: **PSWCD, SWCD, LPRW** When: 2017-2021 Funding: \$500 PSWCD, SWCD, LPRW

Action: Increase awareness among public officials, land owners, and citizens regarding the interaction between groundwater and surface water sources in order to make informed water management decisions in the Verdi Wellhead Area. This will be done through one-on-one contacts, news articles, websites and a field day.

Who: **PSWCD, SWCD, LPRW** When: 2017-2021 Funding: \$1,500 PSWCD, SWCD, LPRW

Action: Educate and provide information to land owners/operators on the importance of protecting groundwater from pesticides, nutrients, etc. by providing information on:

- Proper usage and rates of pesticides/herbicides through the Minnesota Department of Ag (MDA) product use requirements;
- Sealing abandoned wells and septic system upgrades;
- Feedlot pollution reduction, and the importance of proper manure management;

- CRP/CCRP, RIM, ACEP, EQIP, and to encourage adoption of buffer strips; and
- Conservation tillage, pesticide and nutrient management plans.

This will be done through the SWCD fair booth and web site, newsletters/releases, and individual contacts.

Who: **SWCD, Co, PSWCD,** When: 2017-2021 Funding: \$1,250 SWCD, Co, PSWCD
NRCS

Priority Concern: Surface Water Quality Deterioration focusing on MPCAs list of TMDLs and Impaired waters. TMDL-South Branch, Yellow Medicine River for Fecal Coliform. Impaired waters include various river reaches listed on Pages 2-3 and the following Lakes: Dead Coon, Benton, Perch, Shaokatan and Hendricks. TMDLs underway: Lac qui Parle River-Yellow Bank-Bacteria, Turbidity, and Low Dissolved Oxygen; Lake Shaokatan-Excess Nutrients; Redwood River-Fecal Coliform and Turbidity; and Minnesota River-Turbidity.

GOAL: Restore, protect and improve the deterioration of surface water quality entering Lincoln County's lakes, rivers and streams.

Objective: Protect surface water quality from contamination caused by point and non-point source pollution and properly treat both human and animal waste.

Action: Work with 2-producers/year with high priority feedlots. Priority based on size of the operation and their proximity to water. Work with engineers to survey problem feedlots and supply the producer with 2-3 options to fix pollution problems (cost-estimate included). Work with the SWCD/NRCS on possible cost-share availability.

Who: **Co, SWPTSA, SWCD,** When: 2017-2021 Funding: \$100,000 EQIP, BWSR,
NRCS Watersheds

Action: Bring into compliance approximately 10-septic systems/year in the Redwood River, Lac qui Parle and Missouri Watersheds.

Who: **Co** When: 2017-2021 Funding: \$45,000 MDA

Action: Reduce feedlot pollution by working with 2-feedlot producer on developing a nutrient management plan on 250 acres in the Redwood, Lac qui Parle and Missouri Watersheds. Priority will be given to a feedlot producer with 300+ animal units and who spread manure in sensitive areas.

Who: **Co, NRCS, SWCD** When: 2017-2021 Funding: \$1,000 EQIP, BWSR, MPCA

Objective: Protect and improve existing surface water quality by addressing nutrient loading, bacteria issues, fecal coliform, and turbidity.

Action: Assist in pursuing grants through the BWSR and/or MPCA for watershed based activities for the following watersheds: Lac qui Parle, Redwood and Missouri. Address pollutants/stressors in each of the affected water bodies.

Who: **SWCD(s), NRCS** When: 2017-2021 Funding: \$2,500 SWCD
Watersheds

Objective: Educate property owners, land owners/operators on the importance of protecting our surface waters from deterioration.

Action: Educate and provide BMP information to land owners/operators on water impairments and the importance of reducing nutrients and bacteria in surface water quality through newsletters, releases, SWCD web site, fair booth, and individual contacts for:

- Feedlot pollution reduction, and the importance of proper manure management;
- Upgraded SSTS; and
- Implementation of BMPs to reduce the nutrients and bacteria in surface water.

Who: **SWCD, Co, Watersheds** When: 2017-2021 Funding: \$1,500 SWCD, Co, Watersheds

Priority Concern: *Erosion and Sediment Control on agricultural land primarily gully erosion and concentrated flow with several priority areas throughout Lincoln County' including: TMDL-South Branch, Yellow Medicine River for Fecal Coliform. Impaired waters including various river reaches listed on Pages 2-3, and lakes including: Dead Coon, Benton, Perch, Shaokatan and Hendricks. TMDL/s underway: Lac qui Parle River-Yellow Bank-Bacteria, Turbidity and Low Dissolved Oxygen; Lake Shaokatan-Excess Nutrients; Redwood River-Fecal Coliform and Turbidity and Minnesota River-Turbidity.*

GOAL: *Protect and preserve Lincoln County's long-term valuable soil and water resources.*

Objective: Protect and improve existing surface and ground water quality by addressing and reducing soil erosion, sedimentation and potential attached pollutants.

Action: Utilize the WRAPS and TMDL information through the use of the Terrain Analysis and the Agricultural Conservation Planning framework (ACPF) tool to target high priority resources and implementation efforts starting in the Lac qui Parle Watershed and in the future the Redwood and Missouri Watersheds.

Who: **SWCD, NRCS,** When: 2017-2021 Funding: \$1,500 SWCD, Watersheds
Watersheds

Action: Reduce water erosion to 5-ton or less soil loss per acre on cropland by utilizing targeting tools and technologies to locate BMPs and conservation structures when available. Implement BMPs such as but not limited to (approximate footage/year) in the following watersheds: Lac qui Parle, Redwood, and Missouri:

- Water & Sediment Control Basin's (WSCB'S)-8 each,
- Waterways-.5 acres,
- Conservation Tillage, and,
- Increase acres of buffers, filter strips and Critical Area Plantings by 10 new sites (50 acres) per year through various programs.

Who: **SWCD, NRCS, FSA** When: 2017-2021 Funding: \$400,000 NRCS, BWSR, FSA,
Watersheds

Action: Encourage landowners to adopt a planned erosion control or water quality improvement plan by implementing 200-500 acres per year of residue management, cover crops, nutrient, and nitrogen management in the Lac qui Parle, Redwood and Missouri Watersheds. State C-S program will address non-structural practices as early as FY18.

Who: **NRCS, SWCD** When: 2017-2021 Funding: \$20,500 NRCS, BWSR

Action: Reduce soil erosion caused by wind through various tree programs, by installing: 1 mile-field windbreaks/living snow fences, 10 acres-farmstead shelterbelts, and 20 acres-Wildlife Tree Plantings, depending on programs and funds available.

Who: **SWCD, NRCS, FSA** When: 2017-2021 Funding: \$1,000-\$10,000 FSA, DNR, DNR, PF, HD BWSR, NPOs, MN-DOT, Co

Action: Reduce sediment loads to waters of the state by replacing 10-open tile intakes with alternative tile intakes in the Lac qui Parle, Redwood and Missouri Watersheds.

Who: **SWCD, NRCS** When: 2017-2021 Funding: \$5,000 Co, BWSR, Watersheds

Action: Provide a Conserving Use Acres Contract to 6-landowners where the Water Management Task Force pays \$599.00 for planting 10-acres or more of small grain for earthwork construction from August 10 to September 30. Providing funding is available.

Who: **SWCD** When: 2017-2021 Funding: \$3,600 Co, BWSR

Action: Provide cost-share to approximately 5-landowners per year for sealing their abandoned well(s) in the Missouri, Redwood, and Lac qui Parle Watersheds. Additional funding could provide for more wells to be sealed.

Who: **SWCD, Co** When: 2017-2021 Funding: \$2,000 Co, BWSR

Action: Implement 5-low-interest loans per year for SSTS and feedlot upgrades, as well as water quality practices (such as conservation tillage equipment and conservation practices.

Who: **SWCD, Co,** When: 2017-2021 Funding: \$250,000 MDA

Action: Provide technical and financial assistance for livestock producers to assist them with adopting best management practices to reduce impacts from manure runoff and manure storage structures or areas.

Who: **Co, NRCS, SWPTSA,** When: 2017-2021 Funding: \$2,500 Co, NRCS, SWCD, SWCD SWPTSA

Action: Encourage livestock producers to participate in an on-farm environmental assessment program.

Who: **Co, SWPTSA** When: 2017-2021 Funding: \$1,000 Co, SWPSTA

Objective: Reduce the volume of sedimentation reaching county lakes, streams, rivers, public ditches and wetlands.

Action: Work with landowners to achieve 100% compliance on the Buffer Law, estimating 750 buffer-acres in the Lac qui Parle, Redwood and Missouri Watersheds.

Who: **SWCD, NRCS** When: 2017-2021 Funding: 1,000,000; BWSR, FSA

Action: Work with landowners to buffer 40 acres along watercourses through voluntary participation in easement programs and other measures when funds become available such as CREP, CRP, CCRP and RIM.

Who: **SWCD, NRCS, FSA** When: 2017-2021 Funding: \$100,000 BWSR, FSA

Action: The County Commissioners serves as the Lincoln County Ditch Authority directed the Environmental Office to issue administrative orders directing property owners to restore 16 ½ foot permanent grass buffers along open ditches where they are required or the County Commissioners may order the work done.

Who: **Co** When: 2017-2021 Funding: Landowner

Action: Assist in pursuing grants/funding for implementation of conservation practices for watershed based activities through BWSR, MPCA, and MDA. Funding based on current projects, TMDLs/WRAPS/1W1Ps underway and for new TMDLs/Impaired waters projects as they are updated through MPCA in Lac qui Parle, Redwood and Missouri Watersheds. Address pollutants/stressors in each of the affected water bodies and areas deemed as high priority through identified technical work groups.

Who: **SWCD, Co, Watersheds** When: 2017-2021 Funding: \$2,500 SWCD, Watersheds, Co

Objective: Participate in the development of WRAPS, 1W1P and targeted implementation plans in the Missouri Watershed.

Action: Work with the project partners in the Missouri River Basin for team meetings and completion of the Missouri 1W1P.

Who: **SWCD, Co, Watershed** When: 2017-2019 Funding: \$10,000 SWCD, Co

Action: Providing funding is obtained through a grant proposal (Rock County) the SWCD will assist with ground truthing of culvert locations. After the analysis is complete, work with terrain analysis to recognize priority areas of concern for soil erosion and practice location.

Who: **SWCD, Watersheds** When: 2017-2021 Funding: \$2,000 SWCD

Objective: Participate in the development of WRAPS, 1W1P and targeted implementation plans in the Redwood River Watershed.

Action: Participate in the Redwood River WRAPS when it is in the MPCA 10-year cycle to be completed.

Who: **SWCD, Co, Watersheds** When: 2019-2021 Funding: \$10,000 SWCD, Co

Action: Participate in the RCRCRA joint powers meetings and technical team meetings to develop monitoring and implementation plans for the Redwood River Watershed the team deems a priority in the watershed based on TMDLs/impaired waters. Work with the project partners in the Redwood River Basin to complete the 1W1P after the completion of WRAPS and funding is available.

Who: **SWCD, Co, Watersheds** When: 2019-2021 Funding: \$10,000 SWCD, Co

Action: Through the Redwood River Turbidity Reduction Project (RCRCA) implement BMPs such as WSCBs, waterways, streambank stabilizations, grade stabilizations to reduce external loading from surface water runoff in the Redwood River Basin.

Who: **Watersheds, SWCD** When: 2017-2018 Funding: \$90,000 Watershed (remaining)

Action: Providing funding is approved through the RCRCA-Redwood and Cottonwood Holistic Watershed Management Project (CWFs-2017) to implement: 10-WSCBs, 4,000' waterways, 1,500' streambank stabilizations, 5-grade stabilizations and 865 acres of fall cover crops.

Who: **Watershed, SWCD** When: 2017-2020 Funding: \$178,500 Watershed (total)

Action: Work with the project partners on the terrain analysis to recognize priority areas of concern for soil erosion and practice location.

Who: **SWCD, Watersheds** When: 2019-2021 Funding: \$1,000 SWCD

Objective: Participate in the development of WRAPS, 1W1P and targeted implementation plans in the Lac qui Parle River Watershed.

Action: Work with the project partners in the Lac qui Parle River Watershed technical team meetings to complete the WRAPs for the watershed, develop the 1W1P after the completion of WRAPs, monitoring and implementation plans as funding becomes available.

Who: **SWCD, Co, Watersheds** When: 2018-2020 Funding: \$10,000 SWCD, Co, Watersheds

Action: Work with the project partners on the terrain analysis to recognize priority areas of concern for soil erosion and practice location.

Who: **SWCD, Watersheds** When: 2017-2021 Funding: \$1,000 SWCD

Action: Create 5-nutrient removal wetlands in the Lac qui Parle Watershed identified in the Agricultural Conservation Planning Framework (ACPF) tool.

Who: **SWCD, Watersheds** When: 2017-2021 Funding: \$50,000 BWSR, Watersheds

Objective: Increase and protect wildlife habitat in the Lac qui Parle, Redwood and Missouri Watersheds.

Action: Provide assistance to landowners through two no-till/native drills and a native and alfalfa seeder to plant CRP/CCRP, cover crops, etc.

Who: **SWCD** When: 2017-2021 Funding: \$25,000 SWCD

Action: Increase the number of wildlife-habitat management areas, wildlife plantings and restore 2 acres of wetland restorations per year making the opportunity for wildlife enhancement and hunting opportunities greater.

Who: **SWCD, NRCS, DNR** When: 2017-2021 Funding: \$25,000 DNR, BWSR, USFWS, USFWS NPOs, NRCS

Action: Provide staff hours to assist private landowners in enrolling their land into the Walk-In-Access Program providing public hunting on private lands on approximately 3,500 acres in Lincoln County.

Who: **SWCD, DNR** When: 2017-2021 Funding: \$2,000 SWCD, DNR

Action: Expend 100% of funding available through the Working Lands Initiative (WLI) Program/Prairie Coteau Local Technical Team to protect and restore prairie grasslands and wetlands in the Prairie Core, Corridor areas and other priority areas located in the Lac qui Parle, Redwood and Missouri Watersheds.

Who: **SWCD, NRCS, DNR** When: 2017-2021 Funding: \$50,000 DNR, BWSR

Action: Convert 1% of cropland to grassland, treating 250 acres per year in Lac qui Parle, Redwood, and Missouri Watersheds. The best opportunity to do this is on HEL. First priority will be given to perpetual programs.

Who: **SWCD, NRCS,** When: 2017-2021 Funding: \$500,500 BWSR, FSA

Objective: Educate landowners/operators about erosion and sediment control, the importance of installing conservation practices and encourage conservation programs that help protect wildlife and recreational benefits in Lincoln County.

Action: Promote the Minnesota Agricultural Water Quality Certification Program with news articles, one-on-one contacts and other methods which will result in 5-applications per year in the Lac qui Parle, Redwood and Missouri Watersheds.

Who: **SWCD, PSWCD** When: 2017-2021 Funding: \$2,500 SWCD, PSWCD

Action: Encourage livestock producers to work with Technical Service Providers and/or Certified Crop Advisors to better utilize and understand the value of using GIS/GPS technologies in developing:

- Manure management plans
- Comprehensive nutrient management plans
- Pasture management plans
- Rotation grazing plans

Who: **Co, NRCS, SWCD** When: 2017-2021 Funding: \$1,500 Co, SWCD

Action: Provide BMP and funding information to land owners/operators to reduce sediment and nutrient loading of surface and ground water and to enhance wildlife and recreation opportunities giving emphasis on areas with steep slopes, coarse soils and other high priority areas. BMPs include:

- WSCB's, terraces, waterways, conservation tillage, restored wetlands,
- Feedlots, manure/nutrient/pasture/management planning and implementation;
- Replacement of open tile intakes with alternative tile intakes;
- Enhance and protect remnant native prairies, and wildlife habitat management areas;
- Buffer programs: CCRP, RIM, CREP, EQIP, ACEP, Working Lands Initiative, critical area plantings, filter strips; and
- Field windbreaks, living snow fences, farmstead shelterbelts, wildlife tree plantings.

This will be done through newsletters, news releases, one-on-one contacts, SWCD web site, workshops, and SWCD fair booth.

Who: **SWCD, NRCS, DNR,** When: 2017-2021 Funding: \$2,500 SWCD, Co, Watersheds
DNR, Co, Watersheds

Action: Provide information on the enhanced use of Precision Agricultural Technology (PCT) on various agricultural settings.

Who: **NRCS, SWCD** When: 2017-2021 Funding: \$500 SWCD

Action: Engage local partners (NRCS, SWCD, County, Non-Profit Organizations, Watersheds, etc.), through the Water Management Task Force hosting biannual meetings on the importance of conservation implementation and the new technology available for selection of BMPs, etc.

Who: **Co, SWCD** When: 2019-2021 Funding: \$1,500 Co, SWCD

Priority Concern: *Lake Management Improvement (water quality) and Recreational Opportunities targeting Lake Benton, Lake Shaokatan, and Lake Hendricks.*

GOAL: *Increase recreational opportunities by improving the water quality and quantity of Lincoln County's lakes.*

Objective: Reduce curly-leaf pondweed in Lake Benton, which has been detrimental to the use and enjoyment of Lake Benton. Work to improve tourism, economic growth and revive the recreational activities that were once abundant in Lake Benton.

Action: DNR, LID, Co, will continue to ensure the “presence of a more diverse plant community” to reduce the adverse effects of curly-leaf pondweed on Lake Benton.

Who: **DNR, Co, LID** When: 2017-2021 Funding: \$1,000 Co

Action: Co, DNR, and LID will continue to monitor Lake Benton Lake and will spot treat curly leaf pondweed in the lake when needed.

Who: **Co, DNR, LID** When: 2017-2021 Funding: \$75,000; Co, DNR, Cities, Twps, LID

Objective: Improve the water quality and quantity by implementing BMPs above Lincoln County's lakes and prevent introduction of Aquatic Invasive Species (AIS) in our lakes.

Action: Implement BMPs to prevent surface erosion into the county lakes with priority placed upon Lake Benton, Lake Hendricks and Lake Shaokatan watersheds. Practices include but not limited to: WSCBs, Grade Stabilizations, sound environmental drainage practices, fall cover crops, residue management, nutrient, and nitrogen management.

Who: **Co, SWCD, NRCS** When: 2017-2021 Funding: \$75,000 BWSR, Watershed, Watersheds LID, MPCA

Objective: Educate the residents, owners and operators of the three main lakes on the importance of protecting the recreational benefits of the lakes in Lincoln County.

Action: Raise public awareness through education activities, fair booth, one-on-one contacts, public radio announcements, meetings, etc., on the prevention of AIS and other water related issues in the lakes.

Who: **Co, DNR** When: 2017-2021 Funding: \$68,000; Co, DNR

Action: Educate citizens about the importance of protecting and improving lake water quality through meetings, one-on-one contacts, and newsletters.

Who: Co, SWCD

When: 2017-2021 Funding: \$1,000 Co, SWCD

Priority Concern: *Surface Water Runoff and Drainage addressing runoff volume and water quality through drainage management.*

GOAL: *Improve surface water management by decreasing runoff, flooding and erosion while maintaining the drainage systems already in place to sustain agricultural productivity.*

Objective: Apply watershed-based principles in properly managing drainage systems, wetlands and grade stabilization projects in the county.

Action: Reduce flooding potential by restoring wetlands by 10 acres over five years and increasing the number of filter strips through CCRP, etc.

Who: SWCD, NRCS, FSA

When: 2017-2021 Funding: \$125,000 FSA, BWSR, NRCS, DNR, USFWS

Action: Provide staff hours to establish a list of grade stabilization structures throughout the County and their status as far as needing repairs.

Who: SWCD, Co

When: 2017-2021 Funding: \$1,500 SWCD, Co

Action: Construct or repair a grade stabilization project county-wide every year or as funds permit.

Who: Area II, SWPTSA, NRCS

When: 2017-2021 Funding: \$25,000-\$100,000; Area II, BWSR, SWCD Watersheds, NRCS

Action: Administer the Wetland Conservation Act (WCA). Administration will come from the Local Governmental Unit-Lincoln Soil and Water Conservation District. Technical panel consists of a representative from BWSR, NRCS, and SWCD.

Who: SWCD, BWSR

When: 2017-2021 Funding: \$20,000 BWSR, SWCD

Action: Control drainage through construction of 5,000 feet of saturated buffers and 5-water control structures in the entire county.

Who: SWCD, BWSR

When: 2017-2021 Funding: \$40,000 BWSR

Watersheds

Objective: Incorporate flood control benefits into conservation projects without destroying fish habitat and inhibiting fish passage to spawning areas.

Action: Establish a wetland bank of at least 5 acres in size if an opportunity arises.

Who: Area II, SWCD, Co,

When: 2017-2021 Funding: \$100,000 Wetland Bank Owner

Watersheds

Action: Work in partnership with Area II and DNR for feasibility/engineering in incorporating flood control benefits in road and bridge projects without impacting fish habitat and passage.

Who: **SWCD, Co, Area II, DNR**
II, DNR, SWCD

When: 2017-2021 Funding: \$2,500 Co, Area

Action: Work with drainage authorities and Area II county wide to incorporate off-channel floodwater storage into proposed ditch projects when possible (1 in 5-years).

Who: **Area II, SWCD, Co, Watersheds, BWSR**
Watersheds

When: 2017-2021

Funding: \$500,000 BWSR, Area II, Co,
Watersheds

Objective: Educate landowners/operators in Lincoln County on the Drainage programs/issues.

Action: Educate landowners/operators of the importance of keeping buffers in place to protect public/drainage ditch systems and all waters of the state and of the negative environmental impacts associated with farming right next to ditches.

Who: **SWCD, Co, Watersheds** When: 2017-2021 Funding: \$1,000 Co, SWCD, Watersheds

Action: Educate land users on the Wetland Conservation Act (WCA) regulations, USDA Swampbuster and Army Corp. of Engineers wetland regulations. Accomplish this through newsletters, the SWCD web site and one-on-one contacts.

Who: **SWCD, NRCS**

When: 2017-2021 Funding: \$2,500 SWCD