

Minnesota River – Yellow Medicine: Water Plans

The Minnesota River – Yellow Medicine Watershed encompasses Chippewa, Kandiyohi, Lac qui Parle, Lincoln, Lyon, Redwood, Renville, and Yellow Medicine Counties. Each county has developed a 10-year rotating comprehensive local water management plan (LWMP) in order to improve water quality within Minnesota. The water plans are comprised of a set of concerns the counties have described as a priority, along with how they intend to effectively manage them.

This document contains two parts: (1) A comparison of management goals from each county (2) A summary of all county water plans in the watershed including priority concerns, goals and objectives, and actions related to nutrient management.

Water Plans:

Chippewa County LWMP 2013-2023

Kandiyohi County LWMP 2013-2017

Lac qui Parle County LWMP 2003-2012

Lincoln County LWMP 2004-2014 amended 2009

Lyon County LWMP 2007-2017 amended 2011



Redwood County LWMP 2005-2015 amended 2010

Renville County LWMP 2013-2023

Yellow Medicine County LWMP 2005-2015 amended 2010

Water Plan Evaluation

Concern	Chippewa	Kandiyohi	Lac qui Parle	Lincoln	Lyon	Redwood	Renville	Yellow Medicine
Education								
Erosion Control								
Groundwater								
TMDL - Impaired Water								
Conservation BMPs								
Drainage Management								
Feedlot Compliance								
Sediment								
SSTS/ISTS								
Surface Water								
Wetlands								
Coordination/Partnership								
Monitoring								
Technical/Financial Assistance								
Wellhead Protection								
Shoreland Management								
Watershed-based Approach								
Nutrient Management								
Stormwater Management								
Water Retention								
Municipal Wastewater								
Seek Funding								
Development Concerns								
Lake Management Plan								
Nonpoint Source Pollution								
Point Source Pollution								
Priority Pollutants								
Abandoned Wells								
Manure Management Plan								
New Technology								

-  Concerns addressed in County Water Plan associated with nutrient issues
-  Strong ongoing activities implemented in programs outside of the County Water Plan

Chippewa County LWMP 2013-2023

Priority Concern: Surface water quality and quantity impairments and concerns

Goal: Remove Fecal Coliform/Bacteria TMDL Implementation for Chippewa River Watershed and Hawk Creek Watershed.

Objective: Address fecal coliform/bacteria TMDL implementation for Chippewa River watershed and Hawk Creek watershed

Actions:

- Complete a level 3 feedlot/livestock inventory
- Do one-on-one visits with all estimated(109) feedlot/livestock owners to complete an inventory gathering information with an outcome of knowing the MINNFarm Analysis for each feedlot
- Develop a relationship with feedlot operators, determine numbers, and identify potential pollution problems, ultimately provide assistance.
 - Engage and inform commodity or producer groups, county commissioners, township officers and other local decision makers of inventory.
 - Through direct mailing and informational meetings.
- Once inventory is completed, maintain/update the information on a regular basis through use of GIS. Based on the findings of the inventory, bring 20% of non-compliant feedlots into compliance by 2018 through the use of EQIP, state cost-share, clean water funds and low interest loans.
 - Provide technical assistance and cost-share to fix feedlot problems.
- Complete Manure Management Plans for landowners that purchase manure to use for fertilizer.
 - Offer \$300 cost-share for new Manure Management plan from purchased manure
 - Map fields that have manure management plans from manure purchased.
- Complete/update Manure Management Plans for all feedlot operations with animal units between 300-999 animal unites
 - Map fields that are part of a manure management plan for manure application
 - Offer \$300 cost-share for new Manure Management Plans and \$200 for updating Plans.
- Encourage the County Planning Commission to recommend to the County Board of Commissioners to update the Zoning Ordinance to establish guidelines on the storage of manure/waste on site areas before incorporation
- Recommend to the County Planning Commission and County Board of Commissioners to include property transfer inspections for SSTS at the time of property sales to promote increased water quality to meet Fecal TMDLs in the Chippewa and Hawk Creek River Watershed areas and Countywide

- Written recommendation from the Water Plan Committee to include property transfer inspections at the time of property sale
- Complete 50 new SSTS upgrades annually reducing P by an average of 1,460 lbs/yr; N by 3832.50 lbs/yr; BOD by 12410 lbs/yr
 - Secure MPCA and MDA funding to provide low interest loans to upgrade noncompliant SSTS
 - Apply annually for cost-share to upgrade four low-income non-compliant systems annually with 75% cost-share up to \$5000
 - Outreach: Newspaper ads, cooperation with Prairie Five Community Action Council Inc. and SSTS Contractors to help get information to homeowners that funds are available to help with upgrade
- Complete 10 new SSTS upgrades reducing P by an average of 292 lbs/yr; N by 766.5lbs/yr; and BOD by 2482lbs/yr
 - Secure MPCA and MDA funding to provide low interest loans and/or grant funds to low income residents to upgrade noncompliant SSTS
 - Outreach: Newspaper ads, cooperation with Prairie Five Community Action Council Inc. and SSTS Contractors to help get information to homeowners that funds are available to help with upgrade.

Objective: Address turbidity TMDL implementation for Chippewa River watershed and Hawk Creek watershed

Actions:

- Install 235' of bank stabilization through the use of bio-engineering techniques such as tow mats, root wads and/or stream barbs along a stretch of Dry Weather Creek (location: Tunsberg Township 118-41; Section 11; SE 1/4) that is causing sloughing along County Road 35.
- Install 200' of bank stabilization through the use of bio-engineering techniques such as tow mats, root wads and/or stream barbs along a stretch of Dry Weather Creek (location: Tunsberg Township 118-41; Section 11; W 1/2, NE 1/4) that is causing sloughing along the stream bank.
- Complete a Drainage Water Management Plan on Dry Weather Creek/Ditch 22.
 - Seek funds to hire a firm to do some modeling to help strategically place water storage to reduce water quality and quantity issues on Dry Weather Creek
 - Address areas suitable for drainage water management BMPs which will consider erosion control and hydrology management practices both on the ditch and on the field/upland.
- Complete a Drainage Water Management Plan on Buffalo Lake/JD#18
 - Seek funds in cooperation with Swift County to hire a consulting/engineering firm to evaluate options related to the identified pollution in Buffalo Lake and how to address the problem.

- Address areas suitable for drainage water management BMPs which will consider erosion control and hydrology management practices both on the ditch and on the field/upland.
- Complete a summit of status of Buffalo Lake: What's been done? What needs to be done? Where to now? Strategy to move forward? Redetermination of Benefits? Dam Structure? Etc.
- Inventory the bridges and culverts on the ditch systems that are showing signs of erosion due to water quantity stress. Complete a hydrologic budget for improvement practices to improve and protect the infrastructure and enhance water quality at the same time.
- Complete a field check of gully erosion and side slope erosion in subwatershed
 - Assess potential drop inlet sites and inventory sites using GPS for potentials repair of side slope and gully erosion. In cooperation with the CRWP, help guide and direct BMP selections and placement
 - Provide 75% cost-share opportunities for 50 drop pipes/side inlets
- Provide 75% cost-share opportunities for 50 alternative tile intakes to address water quality and quantity by reducing nutrient loading in priority zone TMDL areas.
- Provide 75% cost-share on Drainage Water Management with three (3) landowners.
 - Seek assistance from MDA to talk about opportunities to engage landowners to complete a drainage water management project on their fields
 - Market multipurpose drainage management to landowners within the public drainage system sub watershed(s).
 - Include such things as controlled subsurface drainage, denitrifying bioreactors, and nutrient management components
- 42% of the Dry Weather Creek Watershed has no buffer strips on its ditches. Complete an inventory of the buffer strips via on-site visits or pictometry; determine which unbuffered ditches need buffers to reduce ditch bank erosion.
- Promote and market conservation programs and best management practices that reduce soil erosion and sedimentation in regard to soil erosion. Use a direct mailing to the landowners in the Dry Weather Creek and Shakopee Creek Watershed.
 - Establish 50 acres of new or re-enrolled filter/buffer strips. Target TMDL areas.
 - Seed 100 acres of most sensitive erodible/marginal lands into CRP, RIM easements, WRP easement, native prairie easements and/or other perennial cover
 - Install 300 alternative intakes (i.e. blind intakes) and promote benefits
 - Construct 6 water and sediment control structures as erosion runoff control
 - Install 50 side inlet structures in County and private ditch. Target TMDL areas
 - Construct 1000' of terraces for erosional control
 - Construct 2000' of grassed waterways
- Map 4B identifies priority water courses within steep slope areas to add potential erosion control structures from these flows.

- Establish sediment basins/structures to meter/slow flows before they hit the steep slopes decreasing sediment loads to downstream waters and provide some temporary storage
- Work with DNR on different strategy scenarios
- Refine mapping with DNR's assistance
- LiDAR and Terrain Analysis
 - Seek CWL funds to complete a terrain analysis of Chippewa County
 - Concentrate on the impaired reaches of Chippewa County that currently have TMDL's
 - Train staff locally to use the information to analyze and prioritize and target best management activities in minor watershed areas
 - Obtain needed software and equipment to use this program
- Multiple watershed maps will be developed and show priority ranking of BMPs and areas to target based on environmental sensitivity variables, such as slope, soil type, land use, distance to surface water, overland flow potential, stream gradient, bluffs and ravines, and erosion potential
- In cooperation with the DNR, complete assessment in Dry Weather Creek on priority restorable wetlands identified DNR in conjunction with different landscape scenarios and steep slopes. Assess the benefits if the area identified is restored as a whole or just parts.

Goal: Have all feedlots in the county in compliance with MN Statutes 7020 standards by 2023

Objective: Provide assistance to producers to reduce water quality concerns related to animal agriculture

Actions:

- Provide technical and financial assistance, if available, to assist producers in adopting BMP's to reduce the impacts of manure runoff.
- Seek additional funding to mitigate or eliminate pollution from feedlots and animal manure. Promote existing funding sources such as EQIP, cost-share, County water funds and AgBMP low interest loans to correct problems.

Objective: Encourage the development and updating of manure management plans

Actions:

- Promote the economic benefit of manure management planning through direct mailings to feedlot operators and landowners identified that purchase manure.
- Utilize the Manure Management Plan from MPCA or University of Minnesota - Extension as tools for operators.
- Ensure feedlots with 300 to 999 AU have developed and are utilizing a current manure management plan.
 - Provide assistance for plans by offering \$200 cost-share to have existing plans updated or \$300 cost-share for new plans.

- Consider purchasing scales and other equipment available for producers in implementing their plans.
- Provide opportunities for continuing education and training for agronomists and crop consultants. Possibly develop continuing education and training opportunities via a multi county or watershed effort.
- Work with local decision makers (County Board of Commissioners, County Attorney) on a Plan of Action with consequences when manure management plans are not followed.
- Increase efforts on feedlots less than 300 AU not required under current statute to have a manure management plan.
 - Provide assistance for plans by offering \$300 cost-share for new plans.
- Partner with MPCA to distribute and provide training for their newly developed program on manure management planning for smaller sites.

Objective: Provide education on proper setbacks from sensitive areas

Actions:

- Utilize GIS to identify environmentally sensitive areas for manure application
- Educate manure and fertilizer applicators and producers on existing setbacks from sensitive areas, including open tile intakes, wetlands, drainage ditches and road ditches
- Incorporate and encourage vegetated buffers in regard to runoff

Objective: Encourage the proper crediting of manure nutrients

Actions:

- Provide education on current application rates, soil testing, grid sampling and soil health by holding a 'fair' for landowners
- Support the utilization of manure as a valuable resource
- Encourage producer groups or agencies to host field days on demonstration plots and calibration of equipment
- Promote and provide education on the University of MN guidelines, which vary by soil type, yield, manure application, etc.

Goal: Promote wise use of nutrients for optimum economic benefit to the producer while minimizing impacts on the environment.

Objective: Provide education and information on proper application rates

Actions:

- Work with ag suppliers and producers on following the University of MN application rates, which sometimes differ from agronomist rates in plans
- Promote EQIP, CWP and other grant incentives for producers entering a nutrient management contract.

- Explore the possibility of holding classes or workshops for ag suppliers
- Encourage soil sampling to utilize as base data
- Educate those writing plans on rates eligible for programs

Goal: Manage new and existing Subsurface Sewage Treatment systems (SSTS).

Objective: Maintain SSTS programs to protect surface and ground water quality

Actions:

- Through the County Land & Resource Management Ordinance, amend the SSTS Ordinance to meet the requirements of the Minnesota Pollution Control Agency, Chapter 7080-7084.
 - Secure MPCA and MDA funding to provide low interest loans to upgrade noncompliant SSTS.
 - Apply annually for cost-sharing upgrading four low-income non-compliant systems annually with a maximum \$5000 cost-share
- Continue to provide oversight and assistance of State and County regulations and inspection services as part of the County’s SSTS Program including assistance to homeowners on proper SSTS design, installation, operation and maintenance
- Continue to inventory upgraded systems using County GIS. Use data to evaluate areas where fecal coliform is still high
- Recommend to the County Planning Commission and County Board of Commissioners to include property transfer inspections at the time of property sales to promote increased water quality to meet Fecal TMDLs in the Chippewa and Hawk Creek River watershed areas and countywide

Goal: Establish and implement a management program to ensure that existing SSTS are operated and maintained properly to prevent the impairment or degradation of surface and ground waters.

Objective: Maintain SSTS programs to protect surface and ground water quality

Actions:

- Develop and implement an Operation and Maintenance Planning Program for SSTS users to promote keeping SSTS in operational and treating order and increase the longevity of systems
- Keep an updated system inventory that provides management information regarding type of system, location, capacity, installation date, owner, date of last inspection and pumping record information
- Through direct mailings, notify homeowners every three years that pumping is required to keep their system in compliance
- Ensure that residuals pumped from tank are properly disposed of in a manner that does not present significant risks to surface or ground waters. Maintain an inventory of fields being used for disposal
- Publicize information on the importance of SSTS maintenance on the County website

- Continue annual training/update meeting for all system designers, installers, pumpers, and inspectors working in Chippewa County

Goal: Reduce and minimize the effects of soil erosion and sedimentation.

Objective: Market conservation programs and BMPs that reduce soil erosion and sedimentation in regard to water and wind erosion

Actions:

- Target 500' of bank stabilization, etc. in area identified in TMDL areas
- Establish 50 acres of new or re-enrolled filter/buffer strips. Target TMDL areas
- Establish and restore 100 acres of most sensitive erodible/marginal lands into CRP, RIM easements, WRP easement, native prairie easements and/or other perennial cover (Use Map 3A for reference)
- Establish 2000' of windbreak
- Install 300 alternative intakes (i.e. blind intakes) and promote benefits
- Construct 6 water and sediment control structures as erosion runoff control
- Install 50 side inlet structures in County and private ditch. Target TMDL areas
- Construct 1000' of terraces for erosion control
- Construct 2000' of grassed waterways
- Wildlife habitat: establish 15 acres of wildlife tree plantings
- Establish 20 acres of field windbreaks and farmstead shelterbelts
- Actively demonstrate and promote conservation tillage methods that are cost effective and environmentally friendly (complete tillage survey biannually)
- Educate absentee landowners and women landowners not actively involved in agriculture on the opportunities available to them for implementing/installing BMPs on their land and the benefits and needs of these BMPs for conservation and sustainability
- Target marginal land for BMP programs promoting soil health by encouraging cover crops, no-till/minimum till, grazing, etc.
- Provide educational, technical, financial assistance, as available, to landowners for the implementation of erosion and sediment control BMPs
- CRP contracts expiring; contact landowners through direct mailing that have CRP contracts expiring to engage them to re-enroll
- Provide outreach and education on the need of residue management for wind erosion
- Submit Ditch Buffer Strip Annual Report to BWSR as required. Work with non-compliant sites to meet compliance according to law set in Statute 103E.067

Objective: Multipurpose drainage management planning

Actions:

- Encourage ditch authorities when addressing drainage systems that are at their functional life span to consider technologies such as controlled drainage, wetland restoration, and buffer and filter strips that can aid in flood water control and water quality improvements.
- Seek funding through the Clean Water Conservation Drainage Management Grants to complete Multipurpose Drainage Management Planning for public drainage systems.
- Seek funding to hire a drainage engineer who will complete a public drainage system survey, inventory and evaluation on at least the Dry Weather Creek Watershed and the Shakopee Creek Watershed for the 3 year grant period.
- Develop sub watershed scale implementation plans for multipurpose drainage management to protect and improve water quality, together with adequate agricultural drainage, equitable flood protection, peak flow and erosion reduction, and wildlife habitat improvement.
 - The plan(s) should consider practices such as grassed waterways, water and sediment control basins, culvert sizing, side inlets, controlled subsurface drainage, nutrient management, denitrifying bioreactors, constructed or restored wetlands and other applicable hydrology management and water quality practices on a sub watershed basis that reduce peak flows, nutrient transport and erosion potential. Target the following BMP's to critical areas in our drainage systems: buffer strips, bank stabilization, alternative intakes, water and sediment structures, side inlets and grassed waterways.

Objective: Preserve and protect the most sensitive areas of Chippewa County

Actions:

- Apply for a grant with joint partners along the MN River Valley to preserve and protect approximately 200 acres of Granite Rock Outcrops in Chippewa County and their associated wetlands, plus improve water quality and aquatic habitat within the Minnesota River Valley.
- Prairie Plan: actively participate in implementation of the Prairie Plan via prairie core area based conservation.
 - assist in prioritizing parcels with local technical team Resource Management
 - contact landowners
 - technical staff will be well versed in program options
 - help landowners navigate programs (See Map 8A.)

Goal: Storm Water Management

Objective: Assist and encourage non-regulated communities to develop Storm Water Management Plans

Actions:

- Encourage the development of model Stormwater Management Plans that could be easily adopted or modified by small communities. Include the following information in plans
 - Drainage
 - Basic urban BMP information such as: street sweeping, catch basin cleaning, leaf litter management, salt application, snow removal, ponds, filter strips, infiltration, lawn fertilizers, etc.
 - Plans for future improvements
- Provide education and training opportunities for implementation and management of stormwater BMPs
- Seek funds to implement urban BMP demonstration sites throughout the municipalities in Chippewa County
 - Promote the use of semi-permeable surface by creating at least 2 demonstration sites per community
 - Design and install at least 2 rain gardens per community for demonstration and education sites

Objective: Encourage communities to promote or provide incentives for homeowners to implement BMPs at the lot size level

Actions:

- Offer incentives to residents to direct rooftop runoff to pervious areas such as yards, open channels or vegetated areas, and avoid routing rooftop runoff to the roadway and the storm water conveyance system.
- Offer incentives to homeowners for on-lot infiltration practices, including reduced lot grading, rain gardens or rain barrels, which control runoff at its source.
- Pursue funding sources for the establishment of urban best management practices.
- Educate homeowners on the proper handling and disposal of hazardous waste to eliminate pollutants entering the storm sewers.
- Support cities implementing the new stormwater permitting process which essentially requires each city to adopt the best way to hold water on the land, techniques that could range from rain gardens to holding ponds to pervious pavements to new sediment-collecting baffles in storm sewers. Practices can reduce phosphorus by 90% compared with the 50% that is typical of current water treatment systems. Create Urban BMP's and seek funds to assist with implementing the BMP's.
- Provide educational opportunities on urban best management practices and their benefit through workshops, press releases, county fair and possibly community education classes.
- Purchase rain barrels through the Recycling Association of MN and offer them at a reduced rate to urban residents promoting water conservation and reducing stormwater runoff.

Goal: Shoreland

Objective: Protect shoreland areas in the County

Actions:

- Inventory/Assess status of required 50' buffer in shoreland areas.
 - Use public waters inventory and seek DNR's assistance.
 - Assess status of compliance and contact non-compliant through mailings.
 - Offer programs to become compliant with existing programs, CRP, etc.
- Review Floodplain update mapping. Compare with old maps to identify changes and land use of new areas identified. Implement BMP's as necessary.

Priority Concern: Groundwater quality and quantity impairments and concerns

Goal: Protect and improve groundwater based drinking water sources

Objective: Implement BMPs in Wellhead Protection Areas (WPA)

Actions:

- In cooperation with the following municipalities; Montevideo, Milan and Granite Falls; participate in the implementation and education of approved wellhead protection plans.
- Provide planning assistance to the Cities of Maynard, Watson and Clara City and MN Department of Health when process begins.
- Watson: Drinking Water Supply Management Area (DWSMA) vulnerability boundary identified. Inventory wells within those boundaries and complete a simple land use analysis to see if BMP's are necessary to protect the wellhead area. Offer cost-share for sealing abandoned wells and offer funding for BMP's needed.
- Inventory abandoned wells in WPA's and target sealing all abandoned wells through use of cost-share well sealing program.
- Incorporate the County's sensitive groundwater recharge areas map (source MN DNR) into the local land use decision making process.
- County Geologic Atlas - systematic study of a county's geologic and groundwater resources. Host a workshop every three years with the DNR and Minnesota Geological Survey on how best to incorporate the County's Geologic Atlas into the land use decision making process.

Objective: Ensure landowners and homeowners that their supply of water is safe for drinking

Actions:

- Create a gift certificate (not to exceed \$50) for free well testing for new parents that get their source of drinking water from a private well. Seal 10 wells annually and offer 50% cost-share up to \$400 per well to landowners to seal old unusable/abandoned wells on their property.
- Send out an informational direct mailing to landowners located in flood plain areas about wells located in well pits. Recommend retrofitting the wells so the casing is located above the flood level for their own safety and for groundwater protection.
- Educate landowners on the effects on SSTS and waste water treatment plants to surface and groundwater resources from improper disposal of pharmaceutical wastes. Increase awareness on free drop off sites for pharmaceutical waste through advertising in local newspapers, radio and assistance from law enforcement, hospital, clinics, nursing homes, assisted living, home healthcare and pharmacies.
- In cooperation with the City of Clara City and Police Department, locate a collection spot in their community for pharmaceutical waste.
- In cooperation with the Chippewa County Sheriff's Department, locate a pharmaceutical collection spot in the Sheriff's Department for all County residents to use.
- Promote the use of Kandiyohi County's Household Hazardous Waste (HHW) Regional Facility located in the City of Willmar. With the use of our HHW trailer, hold HHW collections annually. (See PC 3:3.A.7)
- Through the MN Department of Agriculture water testing clinic, offer free nitrate water testing with the goal of increasing public awareness of nitrates in rural drinking and livestock water supplies.
- Offer well testing bi-annually in cooperation with the MN Department of Health for nitrates and fecal coliform bacteria. Offer \$10 cost-share for each test. Provide user guide safety and BMPs for private well users.

Objective: Groundwater Quantity/I.D. Recharge Areas

Actions:

- Pursue funding through a CWF to establish a Water Conservation/Drought Contingency Plan.
- Gather information from the City of Milan on current water usage. Develop an education program to promote water conservation with an emphasis on the energy savings, and offer free packets of water conservation tools, i.e. low flow showerheads, to all dwellings on current municipal water system and continue to gather water usage information and review the results.
- Establish a program to offer incentives to homeowners for on-lot infiltration practices, including reduced lot grading and rain gardens to control runoff at its source and promote recharge to the groundwater. Complete two practices annually.
- Continue to monitor two DNR observation wells monthly and two irrigation wells twice annually in April and October.

- Work closely with DNR to determine if more wells should be tested throughout the county to determine ground water levels.
- Discuss the needs and benefits of having more test sites
- Continue to be engaged and informed regarding on-going research to understand the impacts of drainage or other land use practices on ground water recharge rates and the means to quantify these impacts.
 - continue to inform and educate citizens
- Develop a strategy to promote water conservation and educate on the benefits and importance of ensuring an adequate and clean amount of water for the future.

Priority Concern: Public awareness and plan administration

Goal: Maintain a watershed focus

Objective: Support watersheds in Chippewa County

Actions:

- Continue to support the watershed monitoring and information gathering efforts in order to better understand, assess, and identify gaps related to the condition of the County's water resources.
- Support watershed planning, monitoring and implementation activities by providing financial (in-kind) and technical assistance by attending and participating in the Local Work Group meetings, monthly meetings and annual meetings.
- Annually review monitoring data with the watersheds and implementation accomplishments to continue coordinating future initiatives. Participate and be informed via the watershed restoration and protection strategy (led by MPCA) and be an active participant as the watershed transitions to Comprehensive Watershed Management planning.

Goal: Staff and coordinate stakeholder cooperation

Objective: Stakeholder cooperation

Actions:

- Maintain the County Local Water Management Coordinator position.
- Maintain a strong Water Planning Committee.
 - Hold at least 4 meetings per year to discuss issues and work plan agenda.
 - Review, design and implement programs.
 - Educate public on "What is Your County Water Plan?" by highlighting objectives and accomplishments thru radio and newspaper articles and seek other new ways also.
- Use the following technology tools when tracking, reviewing, assessing and analyzing data in identifying high priority areas.

- Use the County's Geographic Information System (GIS) to track water plan accomplishments and maintain current and past inventories.
- Through the active use of Pictometry
- Maintain pictometry with updated flights every 3-5 years
- LiDAR/Terrain Analysis. Use tools to prioritize non-point source, surface water management and water quality management targeting
- Assess data needs
- Obtain necessary training
- Take a course on how to use LIDAR based data to target BMPs to the most critical landscapes and improve the competitiveness of conservation grant proposal applications.
- Administer a Gap Analysis of technical skills with the main purpose to evaluate "where we are and where we want to be" and "what tools do we have and what are we missing."
- Gain fuller understanding of each department's skills and duties. Counties area • Determine the "gaps" between organization's and identify needs.
- Prioritize the gaps identified and implement a strategy to fill in those gaps.
- Upon completion of the gap analysis, project teams will have the following:
- An understanding of the differences between current practices and needed practices.
- An assessment of the barriers that need to be addressed and identify possible staffing needs for future grants.

Objective: Implement the County's land use controls

Actions:

- Continue to implement the County's land use controls which include the County's Land and Related Resources Management Ordinance and the Solid Waste Ordinance.
 - The Land & Related Resource Management Ordinance includes but is not limited to the following topics: Floodplain, SSTS, MN River Management
- District, Natural Areas Preservation District, Shoreland and Feedlots.
 - The Solid Waste Ordinance includes but is not limited to the following topics: Household Hazardous Waste, Recycling and Problem Materials.
- Administer the SSTS program through the BWSR Base Grant annually and provide needed annual reports to MPCA.
- Amend the SSTS Ordinance to implement the new Rules developed by the MPCA and the University of MN Extension by the assigned deadline of February 4, 2014.
- Administer the Shoreland Administration program through the BWSR Base Grant annually and provide needed annual reports to MN DNR.
- Administer the Wetland Conservation Act administration program through the BWSR Base Grant annually and provide needed annual reports to BWSR.

Goal: Raise public awareness on key water planning issues

Objective: Raise public awareness through education and cooperation with residents, businesses and schools

Actions:

- Provide educational, technical and financial assistance, as available, to homeowners to upgrade noncompliant SSTSs. Investigate and initiate corrective measures for improperly discharging SSTSs.
- Focus education and outreach efforts on two to three water planning issues a year. Integrate those efforts with the watershed projects educational goals. Identify the priority issues in spring each year.
- Continue to provide annual training and information program for SSTS installers, designers and haulers. Outreach: direct mailing and annual meeting (approximately 15 contractors)
- Create an Operation and Maintenance Program for residents that operate their own SSTS.
- Distribute annually updated information to excavators on proper site abandonment. Use information made available by the MN Department of Health (MDH) and MN Pollution Control Agency (MPCA) to ensure public safety and environmental safety procedures when taking down a building site.
 - Sealing Unused Wells brochure by MDH
 - Pre-Renovation/Demolition Environmental Checklist by MPCA
 - SSTS Abandonment Reporting Form by MPCA
- Promote the use of Kandiyohi County's Regional Household Hazardous Waste (HHW) Facility located in the City of Willmar.
- Hold five HHW Collections using Chippewa County's HHW trailer and the assistance of our Regional Facility in Kandiyohi County with the following schedule: - Cities of Maynard and Clara City and Townships of Granite Falls, Rheiderland, Stoneham, Crate, Louriston, Woods, Leentrop, Grace and Lone Tree.
 - City of Montevideo and Townships Sparta, Tunsberg, Rosewood and Havelock.
 - City of Milan and Townships Kragero, Big Bend and Mandt.
- Hold five Problem Material Collections. Items to be collected are tires, appliances, electronics, fluorescent bulbs and other mercury items, cell phones and rechargeable batteries.

Kandiyohei County LWMP 2013-2017

Goal: Protect and improve surface water quality

Objective: Implement BMPs to reduce erosion and sediment loading of surface water resources

Actions:

- Erodible Land. Target highly erodible land for enrollment in conservation easement programs, such as CRP and RIM.
- BMP Cost-Share. Pursue funding to provide technical and financial assistance to landowners, such as CRP, EQIP, and similar BMP programs.
- BMP Program. Provide educational, technical, and financial assistance, as available, to landowners for the implementation of water quality-related BMPs, such as stormwater retention practices, lakescaping, vegetative buffer strips, grassed waterways and field windbreaks.
- Conservation Tillage. Increase educational, technical and financial assistance to landowners to implement agriculture BMPs, such as conservation tillage.
- Control Standards. Review erosion control and storm water control standards to ensure water quality is protected during and after development.
- Hawk Creek Alternative Intakes. The Hawk Creek Watershed Project will cost-share up to 75% (not to exceed \$500) for alternative tile intakes, including rock or blind intakes, hickenbottom intakes, and replacing open intakes with pattern tile.
- Chippewa River Alternative Intakes. The Chippewa River Watershed Project will cost share up to 75% of the cost on eligible alternative tile intakes.
- Hawk Creek Buffer Strips. The Hawk Creek Watershed Project will provide \$100/acre for 10-year contract and \$150/acre for 15-year contract for the establishment of Buffer Strips. If using a perpetual conservation easement, and additional \$500/acre incentive will be paid.
- Chippewa River Watershed Ag BMPs. Reduce sediment by promoting and providing cost-share, when available, for terraces, contour farming, grassed waterways, conservation tillage, buffer strips, and streambank restorations. Prioritize the Shakopee Creek Sub-Watershed.
- NFCRWD Ag Drainage BMPs. Promote the use of Ag Drainage BMPs to reduce nutrients, sediment, and water volume being transported by field tile into the North Fork of the Crow River.

Objective: Proactively work to get waters off the MPCA's 303d List of Impaired Waters (TMDLs)

Actions:

- TMDL Studies. Cooperatively work with partners to coordinate the preparation and implementation of TMDL studies for impaired waters.

- SWCD TMDL. Provide education, technical, and financial assistance to landowners and stakeholders on BMPs to protect water resources. Priority areas include impaired waters.
- Clean Water Funds. Prioritize local projects and needs and apply for clean water legacy funding to implement projects to protect and improve surface water quality. (Complete in 2013).
- Watershed Approach. Promote the watershed approach to identify and address issues and help prevent future impairment designations.

Objective: Reduce and minimize the negative impacts of animal manure and fertilizers

Actions:

- Feedlot Program. Continue to locally administer the County Feedlot Program to assist feedlot operators in obtaining and maintaining compliance with State regulations.
- Feedlot Operator Meeting. Sponsor an annual educational meeting with feedlot operators focusing on pertinent topics, including regulations and manure management.
- Cost-Share. Provide implementing funding through EQIP & State Cost Share for Ag waste systems & nutrient management.
- Nutrient Management Guidelines. Educate landowners to follow the University of Minnesota's nutrient management guidelines.
- Lake Wakanda. Continue with the Gorans nutrient reduction project on Lake Wakanda.
- Low Interest Loans. Provide low interest loans to repair non complying feedlots.
- Feedlot BMPS. Promote BMPs around feedlots and provide technical and financial assistance, when available.
- Lawn Fertilizers. Promote the use of lawn BMPs, including the proper use of fertilizers and disposal of lawn clippings.
- Hawk Creek Feedlot BMPs. The Watershed Project can provide cost-share on eligible ag-waste feedlot upgrades and certain livestock exclusions.
- Chippewa River Watershed Feedlot BMPs. Manage viable livestock operations with: 1) Fencing and alternative water sources for pastures; 2) Rotational Grazing; 3) Agricultural Waste System Upgrades; and 4) Nutrient and Manure Management Planning for Economic and Environmental Goals.

Objective: Work with landowners on properly implementing the County's SSTS Ordinance and other wastewater initiatives

Actions:

- SSTS Program. Continue to provide compliance services as part of the County's SSTS Program.
- SSTS Training Program. Continue ongoing training program for SSTS installers and septic haulers.
- Noncompliant SSTSs. Provide educational and financial assistance, as available, to homeowners to upgrade noncompliant SSTSs.
- SSTS Loans. Administer low interest loans for septic improvements.

- SSTS BMPs. Provide SSTS education and outreach on to inspectors, contractors, and landowners.

Objective: Enhance shoreland and lake management efforts

Actions:

- In-Lake Management. Conduct and/or provide technical and financial assistance for the implementation of in-lake management efforts, when feasible.
- Aquatic Invasive Species (AIS) Management. Conduct and/or provide technical and financial assistance, as available, to lake associations and other groups/organizations for the implementation of invasive aquatic species prevention and/or control efforts. Assist with signage on accesses (in 2013) and annual enforcement, as feasible.
- Land Use Controls. Review land use plans and ordinances to ensure minimal development impacts on surface waters.
- Shoreland Restoration. Promote natural shorelands by providing education, technical, and financial assistance to landowners for shoreland restoration.
- Grants. Seek grants for shoreland restoration.
 - The SWCD will apply for grants for shoreland restoration in the SFCRW.
 - The MFCRWD will apply for grant for shoreland restoration for the MFCRW Lake Levels. Assist as needed with lake level control structures and outlet structure improvement.
 - The MFCRWD will continue to seek funding and work with Ducks Unlimited and landowners on the Hubbard-Shultz-Wheeler Chain of Lakes drawdown project, which is anticipated to take two years to complete (by 2015).
- Chippewa River Watershed Shoreline Restorations. Keep lakes usable by promoting and providing cost-share, when available, to naturalize shorelines.
- Middle Fork Crow River Watershed. Promote Best Management Practices (BMPs) and provide cost-share, when available, to naturalize shorelines.

Objective: Administer initiatives that will enhance sustainable land management activities

Actions:

- Wastewater Treatment. Cooperatively work with partners to address wastewater treatment issues associated with unsewered communities, including riparian developments.
- Hazardous Waste Program. Continue the County's Hazardous Waste Program.
- Habitat Corridors Partnership. Support efforts to conserve, enhance and restore wildlife habitat, when feasible.
- GIS Datasets. Invest in the acquisition, development, and maintenance of GIS datasets, including the digital soil survey and parcel map. Utilize these datasets to make informed decisions regarding land use planning and water resource management. Use LiDAR to identify target areas.
- Land Use Management. Continue to implement the County's adopted land use controls, including the floodplain, SSTS, shoreland, and solid waste ordinances.

Goal: Enhance surface water management

Objective: Ensure long-term agricultural production by maintaining and improve the public drainage

Actions:

- **Public Drainage Systems.** Ensure that public drainage systems are operated and maintained in accordance with the State Drainage Law (M.S. Chapter 103E) and other applicable regulations.
- **Alternative Drainage Practices.** Provide educational, technical, and financial assistance, as available, to landowners for the demonstration of alternative drainage practices. Promote the use of two-stage ditch systems.
- **Redetermination of Benefits.** Continue the redetermination of benefits on all public ditches, as requested.
- **Drainage Buffers.** Promote CRP & RIM for drainage buffers and promote the use of native prairie seeding.
- **Conservation Drainage.** Promote conservation drainage practices, and provide technical and financial assistance, when available.
 - The SWCD will target the SFCRW.
 - The MFCRWD will target the MFCRW.
- **Flow Restoration.** Assist with restoring proper flows where needed.

Objective: Manage surface waters to minimize stormwater pollution and runoff

Actions:

- **Stormwater Management Plans.** Participate in the development and implementation of Comprehensive Stormwater Management Plans. These Plans should prescribe BMPs, including potential retrofit opportunities, provide recommendations for coordinating stormwater management among local units of government, and identify potential funding options.
- **Rain Gardens.** Promote the use of rain gardens as storm water management. Provide grants and technical support.
- **Design and install a minimum of 5 rain gardens per year.**
- **Semi-Permeable Surfaces.** Encourage and implement the use of semi permeable surfaces in urban areas.
- **Stormwater Basins.** Encourage the use of storm water retention areas. Target projects to assist with the Grass Lake project.
- **Stormwater Education.** Provide education though informational booths at the Kandiyohi County Fair and West Central Ag Sale Farm Show which emphasize Urban Best Management practices.

Objective: Preserve and restore wetlands and other water retention opportunities

Actions:

- **Lake Level Conflicts.** Work with the DNR and other stakeholders to resolve lake level conflicts.

- Halvorson Dam. Cooperatively work with partners to resolve issues related to the maintenance and operation of the Halvorson Dam.
- WCA Administration. Continue to locally administer the Minnesota Wetland Conservation Act, with the entire County being designated for high priority restorations.
- Wetland Restorations. Actively pursue preserving and restoring wetlands, where appropriate.
 - Finish the Lindgren Lake Project
 - Target the Shakopee Creek Watershed
 - Target the Hawk Creek Watershed
 - Target the Middle Fork Crow River Watershed
 - Target areas south of U.S. Highway 12
- Preservation and Restoration Programs. Provide educational and technical assistance to landowners regarding State and Federal programs to preserve and restore wetlands, including drained lakebeds.
- Wetland Banking. Provide information to landowners who inquire about the State wetland-banking program.
- Grass Lake Project. Cooperatively work with partners to complete the Grass Lake wetland restoration project. SFCR
- Ag Wetland Banking. Provide information to landowners who inquire about the state agriculture banking program.

Goal: Protect and improve groundwater quality and quantity

Objective: Protect and improve groundwater quality and quantity

Actions:

- BMP Program. Provide educational, technical and financial assistance, as available, to landowners for the implementation of groundwater protection BMPs.
- Wellhead Protection. Participate in the preparation and implementation of wellhead protection plans for public water suppliers.
- Pesticide Container Collection. Continue an empty pesticide container collection day, contingent upon the availability of funding.
- Solid Waste Management. Provide educational assistance to landowners to discourage the burning and burying of solid waste.
- Groundwater Monitoring. Assist with groundwater monitoring efforts, and proactively enact measures to protect and study water supplies, when appropriate.
- Well Sealing. Provide technical and financial assistance when available, to assist with properly sealing abandoned wells.

Goal: Effectively administer the water plan with civic engagement and strong stakeholder coordination

Objective: Expand our knowledge and ability to identify and address key water planning issues

Actions:

- Water Quality Monitoring. Cooperatively work with partners to continue and expand surface and ground water quality monitoring efforts.
- Surface Water Flow Monitoring. Cooperatively work with partners to continue and expand surface water flow monitoring efforts.
- Water Quality Studies. Conduct and/or provide technical and financial assistance, as available, to partners for the completion of water quality studies.

Objective: Engage the public on key water planning issues and implementation activities

Actions:

- Funding Sources. Provide information to landowners and stakeholders on available funding sources for water resource management activities and projects.
- Environmental Education. Promote environmental and conservation education at local schools and help fund Earth Day activities.
- Prairie Woods Environmental Learning Center. Provide financial assistance, as available, to the Prairie Woods Environmental Learning Center for agricultural and environmental education.
- Outreach. Utilize available outreach tools, including the Internet and newsletters, to disseminate information to the public regarding water resource management activities and issues.
- Recreation. Protect and improve the public's water-based recreational opportunities, when feasible.

Objective: Coordinate implementation efforts with key water plan stakeholders

Actions:

- Clean Water Legacy Act. Work with partners to continue to use Clean Water Legacy funds to implement water plan initiatives.
- Watershed Cooperation. Continue the participation with watershed management projects & groups to pool financial and technical resources.
- Partner Meetings. Hold and/or attend meetings with partners to discuss water resource management issues and potential partnership opportunities.
- Joint Powers Board Membership. Continue membership in water plan stakeholder's Joint Powers Boards.
- Local Water Management Coordinator. Maintain the County Local Water Management Coordinator position.
- Water Planning Taskforce Meetings. Hold quarterly Water Planning Taskforce meetings to discuss issues and review funding requests. Annually review the Water Plan.
- Water Plan Update. Update the Goals, Objectives, and action Steps prior to 2018 when the County's five-year implementation plan expires (in 2017).

Lac qui Parle County LWMP 2003-2012

Priority Concern: Water Resource Education

Goal: Collect, analyze and provide important water planning information gathering efforts in order to better understand and assess water planning issues

Objective: Continue to support the various monitoring and information gathering efforts in order to better understand and assess water planning issues

Actions:

- Proactively work with various state agencies, watersheds and citizens to identify the condition of the County's water resources, find gaps in the County's knowledge and understanding of its water resources, find ways to fill those gaps and learn how to interpret and use the information in the decision-making process.
- Schedule training and workshops for proficiency in using data and for data creation needs.
- Continue Clean Water Partnership water quality monitoring and seek ways to effectively publicize the results, interpret and use them in planning efforts.
- Expand the Citizen Monitoring program in both numbers of monitors and in parameters tested.
- Continue and expand the volunteer Rain Gauge Monitor program and develop links from local websites to the data in the Office of Climatology.
- Monitor water levels in 11 wells in areas in the County near irrigation systems for the DNR. Add a link from the SWCD website to the data.
- Develop monitoring plans for waters that are not currently being tested so there is a more comprehensive assessment of waters in the County (for example, Emily Creek).
- Seek funding to hire technicians to work in local offices to promote existing programs on a one-to-one basis with the public.
- Use sub-watershed monitoring efforts to determine where financial and educational assistance is needed most each year. If possible, target these areas for a specific period of time or until the need is reduced to a satisfactory level.

Objective: Raise public awareness on a number of key water-planning issues

Actions:

- Review the function of the Resource Commission and revitalize its membership and potential.
- Use the Resource Commission meetings for agencies to update each other on programs, issues and activities.
- Hold monthly meeting with SWCD, Environmental Office, Watershed and Clean Water Partnership.

- Annually develop a public awareness campaign (or implementation strategy) on the County's priority water planning issues using the County Fair, newsletters, news articles, displays, radio, posters, bulletins in city mailings, electronic info (websites, email alerts, etc.) intersection billboards (like used for VFW steak fry), workshops, tours, school events, and seminars.
- Create a list of places to display maps or handouts (i.e. libraries, banks, etc.) and randomly display information on water planning issues. Review and update the list annually.
- Partner to provide environmental education to students using events such as the Southwest Minnesota Environmental Fair, tours, presentations, field days and contests.

Priority Concern: Water Management

Goal: Protect and improve water quality and quantity through water management

Objective: Identify and properly address flooding and drainage issues and opportunities

Actions:

- Work with various agencies including the East Dakota Water Development District and other counties within the watershed to assess, prioritize and pursue funding to increase water retention in upstream reaches of the watershed such as retention dams, controlled drainage projects (see Action #5), and wetland restoration. Measured by: Installation of practices
- Enhance the existing drainage system GIS layer and continue to build a data base to assist with local water management decision-making and provide training and education to effectively use the data.
- Identify and promote best management practices for water entering ditches and other water bodies such as upland treatment practices, tile management, intakes, side inlets and other practices that will reduce sedimentation and pollution. Make that information available to contractors and producers in brochures, electronic means, radio, demonstrations and possible tours.
- Pursue funding and work with 1-2 demonstration sites featuring controlled drainage and blind intakes and provide cost-share for others interested in removing open intakes.
- Dedicate a Resource Commission meeting to review portions of the County's Disaster Plan on water-related items such as flooding and drought disaster.
- Manage necessary clearing of debris from water channels.

Objective: Identify priority wetlands for protection, enhancement and restoration activities

Actions:

- Provide up-to-date information on the value of wetlands, the need for wetland mitigation, available programs and funding for voluntary restoration and enhancement.
- Pursue funding for landowners who want to voluntarily restore or enhance wetlands. Work with 3-4 landowners each year.

- Seek out 1-2 landowners to work with to create Wetland Banking Credits for trade within the watershed.

Priority Concern: Groundwater Protection

Goal: Protect and improve the quality of groundwater in the County

Objective: Help all landowners act to protect the County's groundwater quality

Actions:

- Work to provide funding to help landowners seal abandoned wells. Seal at least 30 wells each year.
- Promote and conduct a collection of chemical containers annually. Investigate a means of storage containers between collections.
- Promote and conduct two pesticide collections.
- Provide well testing information and opportunities to private landowners to have the water quality of their wells tested. Pursue funding to provide incentives.
- Support the development of water quality data bases for private wells that are compatible with the County Well Index and can be used in a geographic information system (GIS) format.
- Work with owners of older wells in well pits to upgrade their water supply system. Target the floodplain areas first. (One estimate is that about 30% of older wells located in well pits can fill with surface water in the spring or during a flood event.)

Objective: Assist the wellhead protection

Actions:

- Assist the Minnesota Department of Health wellhead/source water protection teams for during the development and implementation of Wellhead Protection Plans when invited. Advise and assist with technical land use information and planning assistance to implement the Plans. As of February, 2008, there is one approved Drinking Water Supply Management Area, delineated for the City of
- Bellingham. The following website lists all public water suppliers and a copy of the Source Water
- Assessment for the public water suppliers in Lac qui Parle County:
<http://www.health.state.mn.us>
- Provide education to create awareness that every well has a wellhead area that needs to be protected

Objective: Make good land use decisions regarding groundwater protection

Actions:

- Examine ways to incorporate groundwater information into the land use decision-making process.

- Invite state agencies to assist the County with learning how to interpret data such as the Upper Minnesota River Basin Regional Hydrogeologic Assessment and other key groundwater information, identify sensitive areas, and identify groundwater recharge areas.
- Develop an ordinance requiring a zoning permit to demolish vacant building sites to ensure abandoned wells are sealed, underground storage tanks are removed and hazardous waste is disposed of properly before demolition occurs.
- Work with municipalities to add their water testing data to their websites. Explore ways to make water testing data for municipalities who do not have websites more readily available to the public.
- Use public entity websites to establish links to sources of data such as the SWCD website link to
- DNR observation well data.

Priority Concern: Reducing priority pollutants

Goal: To restore, protect and maintain the water quality, biodiversity and natural beauty of Lac qui Parle County's water resources

Objective: In cooperation with the MPCA, participate in the development of the TMDLs and subsequent implementation efforts that will help get the waters off the TMDL 303d list of impaired waters

Actions:

- Assist partners in prioritizing water bodies/minor watersheds and work with MPCA on which TMDLs will be addressed next locally. Educate citizens on impaired waters.
- Participate with partners in the development of the TMDL implementation plan(s) for the Lac qui Parle –
- Yellow Bank Watershed; help guide and direct BMP selection and placement; demonstrate and promote
- BMPs and educate citizens on BMPs. (See actions in other issues) Currently work is being done on the Lac qui Parle River Low Dissolved Oxygen TMDL from Dawson to Ten Mile Creek. In the near future, TMDLs worked on include the Lac qui Parle River Watershed Fecal Coliform TMDL and the Lac qui Parle River Watershed Turbidity TMDL.
- With partners, reference CWP Implementation Plan and current work plans and seek additional Clean Water Legacy implementation funds.

Objective: Reduce the impact of activities on surface water quality

Actions:

- Update the County's feedlot inventory to determine the status of feedlots and to better determine where corrective assistance needed.
- Work with existing 1-2 producers each year to bring their feedlots into compliance.

- Assist producers to develop, update and follow their manure management plans. Encourage producers (who currently are not required by law to have plans) to develop plans which will help them better manage their manure resources.
- Assist producers to manage manure application by working with them and with custom applicators to access the Ag BMP Loan program to upgrade their equipment.
- Develop feasibility studies for unsewered communities, including Rosen, Lac qui Parle Village (both unincorporated) and Louisburg (incorporated).
- Investigate requiring an inspection of SSTS location and condition whenever property transfers occur.
- Network with SSTS contractors in the County to share updates on requirements and financial assistance programs available.
- Use CWP funding and Ag BMP Loan funding to help upgrade 20 SSTS each year.
- Enhance the SSTS maintenance program by contacting all individuals who upgrade their SSTS on an established schedule with a reminder and information on their responsibility to properly maintain their systems.
- Provide current information on household waste management to reduce the amount of waste entering the landfill.
- Hold countywide hazardous waste collections 2 times each year.
- Review current and ongoing water quality monitoring and promote BMPs appropriate for specific conditions where surface water may be a concern for pollution by agricultural chemical use.

Priority Concern: Erosion

Goal: To protect the County's long-term soil resources

Objective: Address sediment concerns by ensuring that turbidity and total suspended solids levels are low enough to fully support aquatic life and aesthetics/recreational use

Actions:

- Set up tours in County to show land users current applied practices. Promote and share with all agencies
- Target absentee landowners to promote erosion control practices and enhance incentives by one newsletter/year to producers and owners and by a direct one-to-one contact with 10 individuals/year
- Work with contractors and others to educate the public on ditch and streambank management – buffers – side inlets – stabilization – and cause and effect of erosion.
- Repair and/or install side inlets where needed – 50 each year.
- Install 100 acres of buffers each year
- Promote benefits of appropriate setbacks on ditches.

- Work with land users to install engineered practices to control erosion in concentrated flow areas. 10 sediment control basins each year 1 acre waterway each year
- Conduct a tillage transect survey every other year
- Promote the EQIP tillage incentive and fund five applications each year.
- Work with operators to increase conservation tillage by 5% each year
- Work with land owners to install 1,300 feet of field windbreaks or grass strips each year to reduce wind erosion.
- Protect 150 acres of highly erodible cropland each year by getting them seeded to grasses. Work with operators to plan grazing systems on 200 acres of pastureland each year for 1,000 acres net.
- Work to get funding to stabilize stream and river banks on two projects a year promoting biological practices such as willow plantings, stream barbs, etc.
- Promote and install a demonstration rain garden to address soil loss and control water quality due to runoff from impervious surfaces.
- Install ditch checks (sediment control basins) and other erosion control practices in ditches as needed during road construction and repairs.
- Work with municipalities, contractors and zoning to reduce sedimentation on construction sites from reaching surface waters through stormwater drains. Use brochures, cable access channels, flyers through utility bills and ads in the yearly construction/remodeling special newspaper issues to inform the public about how to reduce sedimentation and why it is important.

Lincoln County LWMP 2004-2014 amended 2009

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).

Actions:

- Continue to work with current 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.
- Encourage the development and adoption of tillage, pesticide and nutrient management plans on cropland within the DWSMA to reduce potential for contaminants entering the aquifer. LPRW will cost share with other local agencies for nutrient soil testing as a component of nutrient management plans. Through this process the application of commercial fertilizer will be applied at recommended agronomic rates and nitrogen management plans are implemented from cropland in the DWSMA.
- As a pilot project in the DWSMA, encourage a landowner to implement a drainage water management project (NRCS) using the new approach to controlled drainage to reduce the impacts of nitrate-nitrogen on both groundwater and surface waters and to reduce flooding potential.

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

Actions:

- 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.
- 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.

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

Actions:

- Continue to work with property owners in the DWSMA to encourage enrollment in easement and cost-share programs such as CRP/CCRP, RIM, WRP, WHIP and adoption of buffer strips. Increase the number of acres of easement programs by 10 acres per year. LPRW will offer a \$15/acre incentive for land enrolled in the CRP in those areas identified as “high priority” in the Verdi Wellhead Protection Area (WHP).
- Increase conservation tillage practices in the DWSMA, reducing sedimentation in the surface waters recharging the ground water. Promote Ag BMP Loans for upgrading conservation tillage equipment to reduce erosion and runoff by targeting one landowner per year or as loan funds permit.

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

Actions:

- Pursue grant funds through the Clean Water, Land and Legacy Amendment for protection of the Verdi Well Field groundwater and drinking water sources.
- Lincoln-Pipestone Rural Water will be in contact with DNR annually (February) to review water appropriations. The LPRW will be in continuous contact with the DNR to find other water sources and any other concerns they have throughout the year.
- 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, WRP, WHIP and 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.

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 Shaotakan-Excess Nutrients; Redwood River-Fecal Coliform and Turbidity; and Minnesota River-Turbidity.

Goal: To 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.

Actions:

- Bring into compliance approximately 30-50 septic systems/year in the Yellow Medicine River Watershed, Redwood River Watershed, and Lac qui Parle Watershed.
- Work with 4-5 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.
- Reduce feedlot pollution by working with 3-feedlot producers on developing nutrient management plans on 750 acres. Priority will be given to feedlot producers with 300+ animal units and producers who spread manure in sensitive areas.

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

Actions:

- Assist in pursuing grants through the Clean Water, Land and Legacy and Clean Water Partnerships for watershed based activities for the following watersheds: Yellow Medicine, Lac qui Parle-Yellow Bank, Redwood and Big Sioux. This is for current projects, TMDLs underway and for new TMDLs/Impaired waters projects as they are updated through MPCA in 2010 and beyond. Address pollutants/stressors in each of the affected water bodies. This would be done through the technician work groups for the Yellow Medicine and Lac qui Parle, the RCRA joint powers and through neighboring SWCDs.

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

Actions:

- 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 in order to reduce the nutrients and bacteria in surface water.
- Educate land owners/operators in the Lake Shaokatan Watershed and the South Branch of the Yellow Medicine River on the TMDL Study and implementation programs through newsletters and one on one contact.

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 Shaotakan-Excess Nutrients; Redwood River-Fecal Coliform and Turbidity and Minnesota River-Turbidity.

Goal: To 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.

Actions:

- Reduce water erosion to 5-ton or less soil loss per acre on cropland. Implement BMPs such as but not limited to (approximate footage/year):
 - Terraces-2,000 feet,
 - Water & Sediment Control Basin’s (WSCB’S)-70 each,
 - Waterways-6 acres,
 - Conservation Tillage, and,
 - Increase acres of buffers, filter strips and Critical Area Plantings by 20 new sites (125 acres) per year through CCRP. The entire county is a concern with priority given to areas deemed necessary by the Technical Groups in each of the watersheds.
- Reduce sediment loads to waters of the state throughout Lincoln County by replacing open tile intakes with alternative tile intakes. Depending on available funding approximately 25-50+ alternative tile intakes could be replaced per year.
- Reduce wind erosion to 5-ton or less soil loss per acre on cropland selling 35,000 trees per year by implementing the following (approximately footage – per year): 1 mile-Field Windbreaks/Living Snow Fences, 10 acres-Farmstead Shelterbelts, and 20 acres-Wildlife Tree Plantings, depending on programs available.
- Make the following contacts: 10-contacts in areas where MN-DOT and the County have identified for the Living Snow Fence Program/Field Windbreaks; 30-contacts to promote the

tree program. Follow-up contacts on all tree projects and keep townships informed on the available tree programs.

- Provide a Conserving Use Acres Contract to six 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.
- Provide cost-share to 5-15 landowners per year for sealing their abandoned well(s). Additional funding could provide for more wells to be sealed.

Objective: Reduce the volume of sedimentation reaching County lakes, streams, rivers and wetlands.

Actions:

- Increase conservation tillage on 1,500 acres with high residue and encourage landowners to plant 500 high residue acres with a No-Till Drill. Funding for conservation tillage equipment is available through the Ag BMP Loan Program, but is dependent on available funds. No-till drills are available at the Lincoln SWCD.
- Assist in pursuing grants/funding for implementation of conservation practices for watershed based activities through the Clean Water, Land and Legacy, Clean Water Partnership, Ag BMP, Watersheds, and BWSR. Funding based on current projects, TMDLs underway and for new TMDLs/Impaired waters projects as they are updated through MPCA in 2010 and beyond in the following watersheds: Yellow Medicine, Lac qui Parle, Redwood River and the Big Sioux. Address pollutants/stressors in each of the affected water bodies and areas deemed as high priority through the watershed project areas. This would be done through the technician work groups for the Yellow Medicine and Lac qui Parle, the RCRC joint powers and through neighboring SWCDs.

Objective: Implement Best Management Practices in the Yellow Medicine Watershed project area.

Future projects will be implemented based on future funding.

Actions:

- Implement BMPs such as sediment basins, waterways, alternative intakes, feedlots, etc. in the South Branch of the Yellow Medicine River located in Lincoln and Lyon Counties to help reduce Phosphorus loading. Funding is strictly through the Yellow Medicine River Watershed District 2007-South Branch TMDL Implementation Plan. Funding shows the remaining dollars currently available.
- Through the Lower Minnesota River TMDL; the 2006 Yellow Medicine River Dissolved Oxygen Project was approved. This project will implement WSCBs and encourage enrollment in the CRP/CCRP. CRP incentive payments are 35% of the eligible CRP/CCRP payment on 20 acres of 120 foot buffer strips which will provide additional water quality benefits. The project is through the Lincoln, Lyon and Yellow Medicine SWCDs with the Lyon SWCD administering the project. Amount of funding is for the entire Yellow Medicine River Watershed (3-counties). Dollars

include: WSCBs-\$21,000; buffer incentives-\$10,150. Grant period: February 1, 2007 thru June 30, 2011.

- Through the Lower Minnesota River TMDL, implementation of the 2009 Clean Water Legacy Grant funded for the Yellow Medicine Watershed will begin. This grant is through the Lincoln, Lyon and Yellow Medicine SWCDs with the Lyon SWCD administering the grant. Amount of funding is for the entire watershed (3-counties) which includes: \$88,000-Structure practices; \$12,000-Alternative Intakes.
- Implement alternative intakes and other projects deemed necessary through the Shaokatan Sportsmen Club dollars in the Lake Shaokatan Watershed. The amount of funding is dependent on the Sportsmen Club. Funding in 2009 consists of \$30,000.
- Participate in the Yellow Medicine River Watershed technical team meetings to develop monitoring and implementation plans the team deems a priority in the watershed based on the TMDLs/impaired waters.
- In the entire Yellow Medicine Watershed accelerate the implementation of BMPs such as sediment basins, waterways, filter strip incentive program, alternative intakes, etc. Funding is dependent on future grants specific for current and future TMDL/impaired water projects.

Objective: Implement Best Management Practices in the Redwood River Watershed project area. Future projects will be implemented based on future funding.

Actions:

- Implement WSCBs and encourage enrollment of acres in the CRP/CCRP to reduce external loading from surface water runoff. Funding is for the Redwood/Cottonwood watersheds. Implementation of the CWL portion is administered through the Redwood SWCD and the 319 portion through RCRCA. Funding includes the current 2007 and 2008 CWL Grants.
- Participate in the RCRCA joint powers meetings and technical team meetings through the SWCDs for the Redwood River Watershed to develop monitoring and implementation plans the team deems a priority in the watershed based on the TMDLs/impaired waters.
- In the Redwood River Watershed accelerate the implementation of BMPs such as sediment basins, waterways, filter strips, etc. Funding is dependent on future grants specific current and future TMDL/impaired water projects in the watershed.
- Monitor sites to evaluate progress on Lake Benton, Coon Creek and its effect on the Redwood River. Monitoring depends on future grants.

Objective: Implement Best Management Practices in the Lac qui Parle Watershed project area. Future projects will be implemented based on future funding.

Actions:

- In the Lac qui Parle River implement BMPs from the headwaters, Lake Hendricks to Lazarus Creek through a 2006 TMDL grant addressing turbidity.

- Implementation includes: 20 WSCBs for \$60,000; 50 acres of filter/buffer strips at \$50/acre per year (15-years) for \$37,500 and septic system upgrades through the SSTS low interest loan program for \$100,000. Funding is for three counties with the grant period extending through 2011. Funding for this TMDL project is through the Lac qui Parle River Watershed-CWP.
- Participate in the Lac qui Parle River Watershed technical team meetings to develop monitoring and implementation plans the team deems a priority in the watershed based on the TMDLs/impaired waters.
- In the Lac qui Parle River Watershed, accelerate the implementation of BMPs such as sediment basins, waterways, filter strips, etc. Funding is dependent on future grants specific current and future TMDL/or impaired water projects in the watershed.
- In the Lac qui Parle River headwaters, Lake Hendricks 41-0110-00 to Lazarus Creek/Canby Creek #07020003-505, with the Aquatic Recreation being the impaired use and Fecal Coliform being the pollutant. Start/completion dates of 2012/2016 (sooner if funds permit). Accelerate the implementation of WSCBs, waterways, filter strips, etc. in the impaired area. Funding is dependent on future grants specific for TMDLs/impaired waters in the watershed. Impairment of Aquatic Life with Turbidity being the pollutant has a start/completion date from MPCA of 2014/2018.

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.

Actions:

- Provide BMP information and cost-share assistance to land owners/operators to reduce sediment and nutrient loading of surface and ground water and to enhance wildlife and recreation opportunities. BMPs include:
 - WSCB's, terraces, waterways, conservation tillage, restored wetlands,
 - Feedlots, nutrient/pesticide management;
 - Replacement of open tile intakes with alternative tile intakes;
 - Enhance and protect remnant native prairies, and wildlife habitat management areas;
 - Buffer programs: CCRP, RIM/WRP, 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, individual contacts, SWCD website, workshops, and SWCD fair booth.

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

Objective: Reduce the blue-green algae in Lake Shaokatan to improve the economic and recreational activities in the lake.

Action:

- Strive to reduce the blue-green algae in Lake Shaokatan by implement BMPs in the watershed above the lake. Promote landowner awareness around the lake in the watershed on the importance of protecting the lake.

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 and wetlands and repair small dams in the county.

Actions:

- Reduce flooding potential by restoring wetlands by 50 acres over five years and increasing the number of filter strips through CCRP, etc.
- Seek funding for establishing a list of dams throughout the County and their status as far as needing repairs.
- Repair existing small dams used for flood control and water storage that are located in the county (repair one dam every three years-or as funds are available).
- 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.

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

Objective: Improve the Drainage Ditch systems in Lincoln County through proper management and implementation of buffers.

Actions:

- Enroll landowners in the CCRP in which the landowner would receive a CRP payment for the one-rod buffer required and the additional buffer required for CRP. Approximately 1,000 acres of cropland are enrolled in various conservation land programs. Increase the number of cropland acres into CCRP by 1% per year.
- In 2008, the County Commissioners serving 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. Landowners have one-year to get them restored or the County Commissioners may order the work done.

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

Actions:

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

Lyon County LWMP 2007-2017 amended 2011

Priority Concern: Impaired waters reclamation (IWR)

Objective: Work with two (2) animal feedlot operators (less than 500 animal units) per year to correct existing fecal coliform problems.

Objective: Support the development of fifteen (15) nutrient management plans.

Objective: Identify critical nutrient input points, and install protective grass buffers for sixty (60) total landowners in four (4) years.

Objective: Provide low-interest loan dollars to assist up to thirty landowners with the upgrade of subsurface septic treatment systems (SSTS)

Objective: Conduct four informational sessions to encourage participation in activities aimed at reducing TMDL impairment

Objective: Work with thirty landowner per year to establish BMPs on highly erodible row cropland

Objective: Provide low interest loan dollars for conservation tillage BMPs, and equipment

Priority Concern: Hydrologic System Management (HSM)

Goal: Work toward long-term hydrology sustainability

Goal: Protect and preserve East and West Twin Lakes sub-watershed area

Objective: Restore natural hydrologic systems and protect and preserve existing systems

Objective: Identify opportunities for additional controls and BMPs in the East and West Twin Lakes sub-watershed area

Objective: Provide additional flood control measures, evaluate existing structures, and prioritize a maintenance schedule for flood control structures

Objective: Inform and educate landowners on opportunities for wetland reclamation

Objective: Establish long-term partnerships with entities that can leverage additional hydrologic system recovery and protection

Actions:

- Repair and/or install six (6) impoundment structures
- Add 160 acres of native grass, and 40 acres of wetland.
- Inspect 8 small dams per year

- Host wetland reclamation workshop
- Model existing flood control structure benefits, and identify additional flood control opportunities
- Develop priority list of potential wetland reclamation areas, and contact landowners to assess level of interest
- Identify target areas for riparian buffers, and surface water protection
- Plan and implement several (2-3) conservation drainage pilot projects (i.e. wood chip bioreactor; controlled drainage infrastructure, etc. with willing landowners)

Priority Concern: Nutrient Load Reduction (NLR)

Goal: Limit nutrients from entering water resources

Objective: Reduce erosion, sedimentation and potential attached pollutants

Objective: Bring non-conforming septic systems into compliance

Objective: Install barriers and buffers that facilitate percolation, ponding, and retention of water

Objective: Provide assistance for land and nutrient BMPs

Actions:

- Install 1 rain garden
- Replace 12 tile surface intakes per year with subsurface tile intakes
- Assist two livestock producers per year with facility improvements
- Assist 15 livestock producers to develop Nutrient Management plans
- Offer low interest loan dollars to provide the funding needed to complete livestock waste management projects
- Assist with 2 grazing management plans per year to protect water sources from livestock access to surface waters
- Work with incorporated Municipalities to implement shoreland BMPs
- Provide low-interest loan dollars for 6 livestock facility/equipment upgrades per year
- Improve upland vegetation at 1 wetland complex

Priority Concern: Groundwater Protection (GWP)

Goal: Protect groundwater resources

Objective: Implement BMPs in Wellhead Protection Areas

Objective: Remove potential aquifer contamination sources

Objective: Monitor groundwater quality

Objective: Promote groundwater conservation practices

Actions:

- Provide cost-share to in the seal 30 abandoned wells per year
- Review land use controls in areas identified as Wellhead Protection Zones, and place
- Assist and support water conservation education efforts; especially for residents who receive their water from municipal systems
- Provide information and encourage participation in water conservation practices
- Provide low-interest loan funding for 20 SSTS upgrades
- Distribute groundwater BMP information to landowners residing in groundwater vulnerability areas
- Support municipal drinking water systems with wellhead protection

Redwood County LWMP 2005-2015 amended 2010

Priority Concern: Groundwater protection that will focus on wellhead protection for public water supply

Goal: Work with cities and groups to ensure groundwater supply for public water suppliers are protected from contamination

Goal: Prevent public drinking supplies from becoming polluted by working with suppliers to manage possible sources of contamination

Goal: Protect public water supplies from possible sources of contamination due to land use activities

Objective: The cities of Belview, Vesta, Morgan and Redwood Falls have completed Phase I of the Wellhead Protection Plan. Make contact with officials in the remaining 11 cities to encourage the delineation of wellhead protection areas and drinking water supply management areas and to conduct the vulnerability assessments of the public water supply wells and drinking water supply management areas.

Action:

- Send letters to two cities each year outlining the importance of completing Phase I, the delineation of wellhead protection areas.

Objective: Identify landowners who own and operate land in the delineated wellhead protection areas and encourage them to use practices that will aid in the protection of groundwater.

Action:

- Identify landowners, using tract numbers, and provide them with brochure on the importance of wise land use in these delineated areas.

Objective: Provide well sealing funds to individuals who have abandoned wells in the wellhead protection areas of each city.

Action:

- Send letter to identified individuals who may have abandoned wells in protection area, giving them highest priority for well sealing funds.

Objective: Develop a program for private well users to identify concerns for contamination.

Action:

- Develop a brochure identifying potential groundwater contaminants for private well users and distribute.

Objective: Educate county residents of all ages on the importance of groundwater protection.

Actions:

- Make 10 presentations utilizing the groundwater model and other educational tools to illustrate the importance of groundwater protection
- Priority Concern: Drainage management focusing on wetland restorations and floodwater retention opportunities

Goal: Provide protection to the drainage management system in place in the county

Objective: Apply watershed-based principles to properly manage drainage systems and wetland restorations.

Actions:

- Enroll 10 people in the Farmable Wetland Program and CP-23 program to reduce flood potential by restoring wetlands.
- Implement the State Wetland Conservation Act. Redwood SWCD has been identified as the Local Governmental Unit in charge of implementation:

Objective: Incorporate flood control benefits into future road and bridge replacements.

Action:

- Replace a bridge with a floodwater retention project whenever possible

Objective: Improve the drainage ditch system in the county through proper management and the implementation of filters trips.

Actions:

- Assess the percentage of drainage ways in the county protected by filters trips.
- Utilizing CRP, promote filters trips until 50% of the watercourses in the county have filter strips at least 33 feet wide.
- Maintain the 72.5 acres of filters trips enrolled through Redwood County Water Management Plan.

Objective: Educate landowners in the county on the drainage issues

Actions:

- Through news releases and direct contact inform landowners of the importance of not farming right up to a watercourse and the importance of leaving a filter strip to protect the drainage system.
- Write a newsletter and newspaper article at least once each year to promote awareness of drainage regulations that affect citizens in the county.

Priority Concern: Surface water quality addressing the following priority pollutants: phosphorus, nitrogen, and fecal coliform bacteria

Goal: To improve, restore and protect the surface water quality of the lakes, rivers and streams in Redwood County

Objective: Promote and encourage the use of University of Minnesota Recommendations for nutrient management

Actions:

- Work with five producers each year to develop nutrient management plans that follow University of Minnesota recommendations.
- Work with commercial fertilizer applicators to ensure that the maximum yield is obtained while applying and utilizing the least amount of fertilizer.

Objective: Work with landowners who utilize manure to educate them on the importance of testing and correct application

Action:

- Each year, work with two livestock producers who utilize manure to ensure they are testing before application and taking proper credits.

Objective: Provide technical assistance to feedlot operators who have a positive FLEval rating

Action:

- Each year, provide assistance to one feedlot operator who has a pollution problem utilizing funds through the EQIP or State Cost Share programs.

Objective: Target all identified Total Maximum Daily Load (TMDL) water bodies for implementation of practices to reduce pollutants

Action:

- Promote the installation of best management practices that will aid in the reduction of pollutant loading.

Objective: Identify failing septic systems in the Redwood and Cottonwood River Watersheds

Action:

- Upgrade 50 failing septic systems each year, utilizing low-interest loan programs for 25 of the upgrades.

Objective: Educate county citizens on the importance of runoff control and surface water protection

Actions:

- Make presentations to five groups utilizing the Enviroscape, Mobile Environmental Education Transport (MEET) and other educational tools.
- Provide funds to sponsor presentations by the Prairie Ecology Bus Center to two schools in the county each year.
- Priority Concern: Erosion and sediment control focusing on residue management county wide and gully and concentrated flow areas in the southwest portion of Redwood County

Goal: To protect and preserve the resource value of soil on agricultural producing land in Redwood County

Objective: Educate and encourage land operators on the importance of installing structural conservation practices to reduce erosion and sedimentation

Actions:

- Develop brochure promoting Best Management Practices (BMPs)
- Write 10 news releases promoting importance of installing BMPs
- Publish at least two newsletters jointly with other agencies
- Hold one public information gathering meeting each year

Objective: Continue to promote residue management

Actions:

- Write news releases promoting conservation tillage practices
- Make three presentations utilizing the rainfall simulator
- Enroll five producers to improve residue levels through EQIP

- Continue to promote residue management

Objective: Protect and increase wildlife habitat

Actions:

- Work with five RIM contract holders to improve existing cover.
- Enroll 50 acres in general CRP sign-up.
- Establish two acres per year of tree plantings to include field windbreaks, farmstead shelterbelt and wildlife plantings

Renville County LWMP 2013-2023

Goal: Protect and improve surface water quality

Objective: Continue efforts to reduce failing Subsurface Soil Treatment Systems (SSTS) and improve wastewater treatment discharges.

Actions:

- SSTS Program. Two County staff members will continue to provide oversight and assistance of State and County regulations and inspection services as part of the County's SSTS Program.
- Noncompliant SSTSs. Provide educational, technical, and financial assistance, as available, to homeowners to upgrade noncompliant SSTSs. Investigate and initiate corrective measures for improperly discharging SSTSs. Identify approximately 2 failing systems each year.
- SSTS Education. Provide information and assistance to homeowners on proper SSTS design, installation, operation, and maintenance through annual newsletters, mailings, and website resources.
- SSTS Funding. Secure and administer financial assistance programs to provide assistance for homeowners to upgrade noncompliant SSTSs. Promote cost-share incentive payments available through the watershed districts to encourage voluntary septic system upgrades. Work with 50 homeowners each year.
- Wastewater Treatment. Cooperatively work with partners to properly address community and industrial wastewater issues. Encourage industrial development to be located where municipal treatment services are available.

Objective: Proactively work to improve and remove waterbodies from the MPCA's 303d list of Impaired Waters (TMDLs) while continuing to protect non-impaired waterbodies.

Actions:

- Water Quality Monitoring. Cooperatively work with partners to continue current efforts and to expand surface water quality monitoring efforts. To obtain baseline and storm event data during the growing season, approximately 40 samples will be annually collected at 11 sites, depending on seasonal precipitation.
- Watershed Approach. Cooperatively work with the MPCA and partners to further the "watershed approach" process of assessment, restoration, and protection strategies for impaired waters.
- Intensive Watershed Monitoring. Assist the MPCA with identifying water quality impairments and sources of impairments within each watershed. Each of the four watersheds will be monitored once every ten-years, as determined by the MPCA. Approximately 50 sites, prioritized by the MPCA, will be tested for biological integrity within the four watersheds.

- Stressor Identification. Assist the MPCA's efforts in the development of stressor identification in aquatic ecosystems. Survey 12 waterbodies, as determined by MPCA, to target priority BMP locations.
- Flow/Level Monitoring Gauges. Assist water plan stakeholders with installing and monitoring flow and level gauges on major rivers and lakes in the County. Flow: Monitor flow on 3 waterbodies. Level gauges: Monitor water level gauges on 9 waterbodies. Approximately 40 measurements will be collected annually on 9 waterbodies, depending on seasonal precipitation. The waterbodies include Hawk Creek, Sacred Heart Creek, West Fork Beaver Creek, Beaver Creek (main stream), Birch Coulee Creek, Fort Ridgley Creek, Buffalo Creek, Lake Allie, and Lake Preston.
- Priority BMP Locations. Evaluate and annually update land use data including GIS layers and LiDAR to identify and inventory high priority practice locations within watersheds (Initially evaluate in 2016-2018).
- BMP Collaboration. Coordinate efforts with local, state, and federal agencies and Watershed Management Organizations to collaborate resources for effective BMP implementation.
- BMP Program*. Provide educational, technical, and financial assistance, as available, to landowners for the implementation of water quality-related BMPs that will address specific waterbodies impairment. For example, excessive nutrients as a result of non-point source pollutants would be treated through filtering and holding water in the field with bioreactors (2), saturated buffers (5), filter strips (50 sites), sediment basins (5), grade stabilizations (2), rock intakes (10), and wetland restorations (5 sites). *(Approximately 16 projects/sites per year).

Objective: Enhance shoreland management and protection efforts.

Actions:

- Shoreland Regulation. Two County staff members will continue to enforce public waters shoreland regulation, including requiring landowners to maintain the mandatory setbacks on public waters.
- Shoreland Conservation Easement Programs. Target marginal and sensitive land for enrollment in conservation easement programs adjacent to public waters, such as CRP, RIM, GRE, GRP, and WRP. Provide assistance to landowners for the management and enhancement of existing easements. Establish 2,000 acres within 100 easements by 2018.
- BMP Program*. Provide educational, technical, and financial assistance, as available, to landowners for the restoration of shoreland. For example, stream bank stabilization structures: (5) two specific locations are Fort Ridgely Creek along the Mayflower Golf Course and on Hawk Creek located in Section 16 of Hawk Creek Township; bank stabilization and vegetation plantings: (5) examples include lakescaping, biological structures, and plantings on Lake Allie and Preston Lake; buffers (300 acres); and grazing exclusion fencing (2). *(Approximately 5 per year).

Objective: Provide programs and regulations to protect surface water resources from livestock and manure contamination.

Actions:

- Feedlot Program. Two staff members will locally administer the County Feedlot Program to assist feedlot operators in obtaining and maintaining compliance with State and County regulations. Approximately 70 sites, or 20% of the County's feedlots, will be inspected annually.
- Noncompliant Feedlots. Provide educational, technical, and financial assistance, as available, to livestock producers to upgrade noncompliant feedlots. Work with approximately 5 noncompliant livestock producers each year.
- Manure and Nutrient Management Plans. Provide educational and technical assistance, as available, to agricultural and livestock producers on proper manure and nutrient management (Complete approximately 10 plans per year).
- BMP Program*. Provide educational, technical, and financial assistance, as available, to livestock producers for the implementation of water quality-related BMPs that will reduce impacts from feedlots and manure management issues. For example, point source pollutants can be addressed on noncompliant feedlots by installing agricultural waste storage facility (2), bark beds (3), filter strips, roof structures (2), and animal mortality facilities (3). Non-point source pollutants could be addressed through exclusion fencing (3 systems) and by installing animal watering facilities (2) outside of natural watercourses. *(Approximately 3 projects/sites per year).

Goal: Reduce erosion and sediment loadings to surface waters resources

Objective: Prioritize and implement BMPs to reduce erosion and sediment loading to surface water resources.

Actions:

- BMP Program.* Provide educational, technical, and financial assistance, as available, to landowners and communities for the implementation of water quality-related BMPs, such as conservation tillage (5 sites), vegetative buffer strips (50 sites), sediment basins (5), grade stabilization structures (2), bank stabilization structures (3), shore land restoration (3), and rock intakes (10). *(Approximately 16 projects/sites per year).
- Conservation Easement Programs. Target marginal and sensitive land for enrollment in conservation easement programs, such as CRP, RIM, GRE, GRP, and WRP (Establish approximately 100 easements totaling 2,000 acres will be completed by 2018). Provide assistance to landowners for the management and enhancement of existing easements.
- BMP Forage Programs. Provide educational, technical, and financial assistance, as available, to landowners for the conversion of marginal row crop agricultural land to forage production pasture and hay land (Establish 3 easements totaling 200 acres will be completed by 2018).

Promote retaining land currently in forage production from being converted to agricultural row crop production. Assist with implementing state or federal grazing plan on private lands.

- BMP Funding. Annually seek additional funding in the form of state cost-share, Federal EQIP, and Clean Water Funds for the implementation of priority BMPs.

Goal: Protect and improve surface water management

Objective: Encourage efforts to maintain the public drainage system while improving water quality and managing water quantity.

Actions:

- Public Drainage Systems. Renville County will ensure that public drainage systems are maintained in accordance with Minnesota Statutes Chapter 103E.
- Redetermination of Benefits. Support the redetermination of benefits on drainage systems as needed or requested.
- Public Drainage Systems BMPs. Cooperatively work with the Drainage Authority to incorporate water quality/quantity-related BMPs into the operation of public drainage systems.
- Drainage BMP Program.* Provide technical and financial assistance, as available, to landowners for the installation of alternative drainage practices. Examples include: rock intakes (10), intake risers (3), controlled drainage (2 sites), bark beds (2), bio retention ponds (2), saturated buffer projects (5), and moist soil management (2). *(Approximately 5 projects/sites per year).
- Controlled Drainage Inventory. Inventory potential sites for controlled drainage projects in underperforming stretches of the public tile systems.
- Educational Programs. Coordinate annual educational activities, such as newsletters and Field Day's, to promote the benefits of BMPs.
- Drainage Systems/Wetland Restorations. Work with the County Drainage Authority on abandoning or relocating public drainage systems in conjunction with wetland restorations. Target priority wetland restoration and saturated buffer projects for future funding. (Establish 3 locations beginning in 2014 and complete by 2018).
- Comprehensive Drainage Management Plan. Pursue the development of a comprehensive drainage management plan for public drainage systems and inventory sites for potential controlled drainage implementation. (Complete by 2018).
- Drainage Studies. Conduct, support, and utilize studies that address impacts of drainage on water quantity and quality, such as studying the water quality benefits of wetlands on Limbo Creek. (Beginning in 2014 and completed by 2018).

Objective: Manage surface waters to minimize storm water pollution and runoff.

Actions:

- Stormwater Storage. Work with municipalities to utilize storage basins and holding ponds for runoff retention and water quality treatment.

- NPDES Stormwater Permit Requirements. Provide educational assistance to landowners and contractors on NPDES stormwater permit requirements for construction activity. (Work with approximately 1 landowner/contractor each year).
- Stormwater Education. Provide educational opportunities, technical assistance, and financial assistance, as available, to create awareness of the effect of stormwater on water quality (i.e. storm drain decals, lawn care/fertilizer management. (Provide approximately 3 events/projects per year).
- BMP Program.* Provide educational, technical, and financial assistance, as available, for the implementation of water quality-related BMPs that will increase the infiltration of storm water. Example BMPs include rain barrels (50), rain gardens (5), retention basins (3), and pervious surface (2 sites). *(Approximately 12 projects/sites per year to be completed by 2018).

Objective: Protect floodplain areas from encroachment and minimize flood damage through land use controls.

Actions:

- Floodplain Regulations. Enforce State approved floodplain zoning regulation.
- Floodplain BMPs. Encourage the enrollment of flood prone areas into land retirement programs (Establish 2 easements totaling 300 acres, beginning in 2014 and completed by 2018).
- Objective: Preserve and restore wetlands and shallow lakes, and promote other water retention opportunities.
- WCA Administration. One SWCD employee will continue to administer the Minnesota Wetland Conservation Act (WCA). One Renville County staff member will continue to serve on the Technical Evaluation Panel (TEP). Renville County shall continue to be identified as a high priority area for administration of the WCA.
- Preservation and Restoration Programs. Provide educational, technical, and financial assistance to landowners to preserve and restore wetlands and grassland complexes. (Establish 500 acres to be completed by 2018).
- Wetland Easements. Pursue grants or easement opportunities to assist landowners in protecting remnant mesic wetlands not protected under State and Federal laws. (Establish 200 acres to be completed by 2018).
- WCA BMP Program.* Promote the preservation and restoration of upland storage areas (wetlands [5 sites], water and sediment basins [5 sites], and other BMPs which will slow surface runoff, reduce peak flows, stabilize stream hydrographs, prevent stream bank erosion, and reduce downstream flooding. *(Approximately 2 projects/sites per year to be completed by 2018).
- Education. Annually implement educational efforts to encourage opportunities to reduce the effects of accelerated runoff from urban, industrial and agricultural areas.
- Priority Sites. Inventory potential for priority wetland restoration sites using ARC GIS LiDAR, hydric soils layers, GIS Data layers, and other tools available. (Beginning in 2014 and completed by 2018).

- Manage Water Levels in Shallow Lakes. Pursue grants to install water control structures to manage the level of water within shallow lakes to improve nutrient filtration by increasing aquatic vegetation and invertebrates populations within these waterbodies and improve waterfowl habitat. Priority lakes in Renville County are Mud Lake, Hodgson Lake, Phare Lake, Long Lake, and Boon Lake that outlet into the County drainage systems. (Beginning in 2014 and completed by 2018).

Goal: Ensure a safe and adequate supply of groundwater

Objective: Protect groundwater and drinking water sources from contamination.

Actions:

- Wellhead Protection. Assist the MDH and the ten municipalities within Renville County with the preparation and implementation of wellhead protection plans for public water suppliers.
- Groundwater Monitoring. Continue to use groundwater monitoring data to support land use decisions and to prioritize educational efforts. Utilize data from the approximately 5 established sites.
- BMP Program. Provide educational, technical and financial assistance, as available, to communities and landowners for the implementation of groundwater protection BMPs, including promoting livestock manure management plans (10 plans), SSTS upgrades (100 systems), abandoned well sealings (50 well sealings), proper decommissioning of storage tanks, wellhead protection conservation easements (2 easements totaling 300 acres), CRP contracts (2 contracts totaling 300 acres), and the proper application and disposal of pesticides and other chemicals. Projects will be completed by 2018.
- Abandoned Wells. Continue to provide information to the public on how to identify, locate and properly seal abandoned wells. Provide cost-share assistance, as available, to seal approximately 10 abandoned wells each year. Develop a Countywide inventory of abandoned wells (To be initiated by 2015 and completed by 2018).

Objective: Ensure adequate groundwater supplies for multiple uses.

Actions:

- Precipitation Monitoring. Continue the volunteer rain gauge monitoring program, which provides monitoring reports to the state Climatology Office. Increase the number of volunteer rain gauge readers from 9 townships to 27 townships.
- Groundwater Monitoring. Cooperatively work with partners to continue and expand groundwater permitting and monitoring efforts.
- Groundwater BMPs. Promote groundwater conservation BMPs such as bio-retention basins (5), rain barrels (50), and rain gardens (5) in urban areas including cities and lakeshore areas. In rural areas, BMPs would include conservation irrigation (1), wetland restorations (5), controlled drainage (2), and saturated buffers (5 sites including the Minnesota River and tributaries focusing on RIM easements). Approximately 14 projects/sites will be completed each year.

- Education. Annually provide groundwater protection and water conservation-related educational materials to industry, homeowners, and schools through newsletters, mailings, website resources, and presentations.
- Hydrogeologic Atlas. Complete, educate, and utilize the Renville County hydrogeologic atlas to evaluate the impact of land use activities on ground water supplies (Complete by 2014). Provide at least 2 educational training by 2014 on the use of the hydrogeologic atlas.

Goal: Protect and improve biodiversity and recreational opportunities

Objective: Provide and participate in educational and outreach opportunities to engage citizens and stakeholders in the implementation of the Water Plan (i.e. civic engagement).

Actions:

- Public Meetings. Annually hold public meetings, as necessary, to keep the public informed of current water resource-related issues.
- Outreach and Education. Disseminate information to the public regarding water resource management activities and issues through newsletters (2 annually), brochures, websites, and media sources (on-going activities). Provide, as available, water quality-related educational materials to industry, homeowners, civic organizations, and schools.
- Educational Events and Workshops. Sponsor and facilitate educational events and workshops with partnering agencies. Complete 2-4 educational events, tours, or workshops annually.
- Funding Sources. Provide information to landowners, communities, and private interest groups regarding funding sources available for water resource management activities and projects.
- Partner Meetings. Hold and/or attend meetings with partners to discuss water resource management issues and potential partnership opportunities.

Objective: Continue local administration and coordination of water resource programs for the effective implementation of the Water Plan.

Actions:

- Water Management Coordinator. Maintain the Renville County Water Management Coordinator position and explore opportunities to expand the position to full time.
- Technical Coordinator. Continue utilizing the Soil and Water Conservation District (SWCD) to provide technical assistance to Renville County for Water Plan Implementation activities.
- Water Management Taskforce Meetings. Hold quarterly Water Management Taskforce meetings to discuss issues and review funding requests. Annually review progress in achieving Water Plan initiatives and identify emerging issues that should be incorporated into the Water Plan through the amendment process.
- Funding Sources. Actively pursue additional funding sources and grants to fund the implementation of Water Plan initiatives. Seek partnerships and cooperative agreements to finance initiatives, when appropriate.
- Grant Reporting. Annually report and manage grant funds once obtained from funding sources.

- Water Plan Revision. Review emerging issues that should be incorporated into the Water Plan through the amendment process and coordinate revisions to the Water Plan prior to its expiration.
- Joint Powers Board Membership. Support current and future membership in Joint Powers Boards. Attend meetings, as scheduled.
- GIS Datasets. Invest in the acquisition, development, and maintenance of GIS datasets, including LiDAR, digital soil survey, land use layers, US FWS restorable wetland inventory layers, USFWS nation wetland inventory, GIS generated storm maps, local inventory layers, and DNR data deli layers. Utilize these datasets to make informed decisions to prioritize implementation of conservation practices, land use planning, and water resource management.
- Consistency with the Water Plan. Work with local agencies, organizations, communities, and County departments to coordinate the consistency of plans, such as the Comprehensive Land Use Plan, Solid Waste Plan, and Wellhead Protection Plans, with the goals and objectives of the Water Plan.
- Water Plan Revision. Review emerging issues that should be incorporated into the Water Plan through the amendment process and coordinate revisions to the Water Plan prior to its expiration. The Water Plan will need to be amended by 2018.