

Minnesota River – Mankato Watershed: Water Plans

The Minnesota River - Mankato Watershed encompasses Blue Earth, Brown, Cottonwood, Le Sueur, Nicollet, Redwood, Renville, Sibley, and Watonwan 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 of 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:

Blue Earth County LWMP 2008-2013

Brown County LWMP 2008-2018

Cottonwood County LWMP 2007-2017 amended 2012

Le Sueur County LWMP 2006-2015 amended 2011

Nicollet County LWMP 2008-2018

Redwood County LWMP 2005-2015 amended 2010

Renville County LWMP 2013-2023

Sibley County LWMP 2013-2023

Watonwan County LWMP 2008-2018

Water Plan Evaluation

Concern	Blue Earth	Brown	Cottonwood	Le Sueur	Nicollet
Feedlot Compliance					
Groundwater					
Technical/Financial Assistance					
Wetlands					
Conservation BMPs					
Education					
Erosion Control					
Monitoring					
SSTS/ISTS					
Abandoned Wells					
Coordination/Partnership					
Seek Funding					
Shoreland Management					
Surface Water					
TMDL - Impaired Water					
Wellhead Protection					
Priority Pollutants					
Sediment					
Stormwater Management					
Development Concerns					
Drainage Management					
Municipal Wastewater					
Manure Management Plan					
Nutrient Management					
Water Retention					
Watershed-based Approach					
New Technology					



Concerns addressed in County Water Plan associated with nutrient issues

Strong ongoing activities implemented in programs outside of the County Water Plan

Water Plan Evaluation (contin.)

Concern	Redwood	Renville	Sibley	Watonwan
Feedlot Compliance				
Groundwater				
Technical/Financial Assistance				
Wetlands				
Conservation BMPs				
Education				
Erosion Control				
Monitoring				
SSTS/ISTS				
Abandoned Wells				
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Concerns addressed in County Water Plan associated with nutrient issues

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Blue Earth County LWMP 2008-2013

Priority Concern: Ground Water

Goal: Protect groundwater resources from potential contaminants from residential, commercial and industrial land uses, well construction, abandoned wells and septic systems

Goal: Protect, enhance and restore groundwater recharge areas

Objective: Continue the Well Program

Actions:

- Blue Earth County will permit and inspect construction of new domestic wells and sealing of unused and abandoned wells and sealing of unused and abandoned wells
- The County will continue to fund the well sealing cost share program with at least \$9,000 annually

Objective: Increase local government's awareness of the potential for groundwater contamination susceptibility in Blue Earth County

Actions:

- The County will work with Township officials providing data and information related to groundwater contamination susceptibility and groundwater protection methods, including zoning, with a special focus on Lime Township and Mankato Township because of their unique position having local zoning authority and their location in areas with high susceptibility to ground water contamination
- The County will provide data and information related to ground water contamination susceptibility and groundwater protection strategies to local government officials, including municipalities

Objective: The County will assist local government units with preparation of source water protection plans

Action:

- The County will assist all local government units and the MDH with preparing source water protection plans as requested by participating in planning teams and providing available data and information including maps and aerial photos and County well index data

Objective: The County will incorporate ground water protection measures in land use planning and regulations.

Actions:

- The County will address ground water protection and land use in the update of the County Comprehensive Land Use Plan
- The County will address ground water protection measures in land use policy at the local level with special attention to business use and storage of potentially hazardous chemicals and materials and subsurface wastewater treatment and disposal

Priority Concern: Surface Water

Goal: Reduce pollutants causing water quality impairments of surface water in watersheds within and affected by land in Blue Earth County

Objective: Support development of TMDL Implementation Plans

Actions:

- Work cooperatively on a watershed basis to identify and prioritize implementation activities
- At the request of the MPCA of other TMDL sponsors and within the constraints of local staff time and resources, participate in preparation of TMDL studies and implementation plans

Objective: Implement soil and water conservation and other practices identified in TMDL implementation plans

Actions:

- Work with agricultural land owners/operators to establish best management practices to achieve TMDL implementation goals as practicable considering availability of local staff and project resources.
- Seek funding for a County-based staff person at the SWCD to work with land owners/operators in all impaired waters and TMDL Implementation Plan priority areas to establish soil and water conservation practices known to address multiple pollutants causing impairments.
- Work with nonpoint sources identified in TMDLs to increase awareness of water quality problems, change behavior and establish best management practices where appropriate and practicable considering availability of local staff and project resources.

Objective: Increase participation in the MPCA Citizen Stream Monitoring Program

Action:

- Promote Citizen Stream Monitoring in SWCD and County newsletters, website, and other information sources

Goal: Protect and improve water quality with implementation of livestock management programs, policies and best practices to prevent and minimize pollution from livestock manure

Objective: Work with all feedlot operators to improve manure management planning

Actions:

- The County will meet with 100 percent of feedlot operators and crop consultants to improve manure management planning
- The County Feedlot Officer will enhance review of manure management fields and field/site specific discussion of sensitive areas and requirements (ground water contamination maps, bedrock, slope, soils, floodplains, ditches, surface water features, two foot contour maps, property boundaries, aerial photos, and other information)
- The County will develop a program to provide County/SWCD web site access to local information about sensitive areas and requirements (ground water contamination maps, bedrock, slope, soils, floodplains, ditches, surface water feature, two foot contour maps, property boundaries, aerial photos and other information).
- The County and SWCD will enhance its general, feedlot education program by providing information about applying manure in sensitive areas such as surface water and shallow soil over bedrock for distribution and display at the SWCD/NRCS office.
- The SWCD, County and other organizations will participate in local demonstrations, field days and workshops as appropriate and report the results in newsletters and other communications.

Objective: Improve manure management in areas with high susceptibility to ground water contamination due to shallow depth of soil to bedrock.

Actions:

- Identify feedlots in areas with high susceptibility for ground water contamination and shallow depth to bedrock.
- Work with the Lime Township Board, feedlot operators and horse owners in Lime Township by providing information related to improving site management and manure management and identifying small sites with potential problems.
- Provide site specific information and other resources to feedlot operators in areas with shallow depth to bedrock.
- Provide technical assistance to horse and livestock owners to reduce the potential for ground water contamination from manure.
- Assess the need for and availability of financial assistance to horse owners to improve manure management.

Objective: Reduce runoff from agricultural fields

Action:

- Establish buffer strips, terraces and grass waterways to protect surface waters from runoff from agricultural fields

Objective: Reduce manure runoff problems from livestock feedlots and smaller sites

Actions:

- Provide technical assistance to operators of feedlots with open lot agreements to correct pollution problems by 2011, the State feedlot program compliance deadline.
- Provide technical assistance to feedlot operators and owners of small sites to address pollution problems.

Goal: Reduce and prevent pollution from agricultural land by establishing conservation practices that minimize runoff, soil erosion and sedimentation and other pollutants.

Objective: Reduce the amount of farmed, highly erodible land adjacent to public waters and ditches by establishing a buffer strip or a cover of perennial vegetation adjacent to all public waters in the County

Objective: Increase BMPs on farmed, highly erodible and potentially highly erodible land

Actions:

- The County, SWCD, and other local implementation partners will identify marginal, highly erodible farmland adjacent to public waters and drainage systems and highly erodible and potentially erodible farm land
- Identify and prioritize areas to work based on appropriate financial incentives, easements, and regulations, special projects, studies, TMDLs, and local plans related to objective
- Work with relevant implementation partners to promote conservation practices in priority areas
- Contact and work with landowners and land occupier to establish conservation practices to achieve objective
- Establish soil and water conservation practices to reduce runoff, soil erosion, and sedimentation

Objective: Bi-annually review and evaluate data and information available for targeting BMPs and other implantation efforts

Action:

- Regularly hold Water Management Plan meetings with local implementation partners to identify, assess, evaluate and prioritize current project needs, information and future implementation strategies.

Objective: Seek available funding for at least one SWCD staff position to work in all priority areas coordinating and promoting BMPs as described in the WMP 2008-2013, watershed and other relevant plans.

Actions:

- Develop description of project and staff needs based on annual SWCD plans and other plans.
- Add a full-time SWCD Technician/Coordinator to:
 - Work with land owners/operators in areas with high priority erosion problems coordinating and promoting proven soil and water conservation practices with targeted efforts such as personal contacts, tours and other activities.
 - Work with conservation partners promoting and coordinating the establishment of buffer and filter strips on County ditches, tile intakes and other waterways with an emphasis on County ditches. Increase the total miles of drainage ditch buffer strips on County ditches in Blue Earth County by 50 percent.
 - Work with land owners/operators in all impaired waters and TMDL Implementation Plan priority areas to establish soil and water conservation practices known to address multiple pollutants causing impairments.

Objective: Increase public awareness of soil and water conservation issues, problems with education and information

Actions:

- Develop posters and other informational pieces related to soil erosion and other factors used to prioritize local project implementation and funding for display at the County SWCD, NRCS and other related offices.
- Provide access to aerial photos, maps, topography, soils and other information on the County and SWCD web sites.
- Promote best management practices in newsletters, web sites, press releases and brochures distributed by the County and SWCD annually.

Goal: Protect and improve water quality by promoting and establishing stormwater management practices that reduce the rate and volume of stormwater runoff, erosion and use of pesticides and fertilizers

Objective: Encourage municipalities and Townships to review and revise stormwater zoning and subdivision ordinances to protect water resources

Actions:

- Work with City staff, engineers and consultants to provide each City with general information about urban stormwater runoff impacts.
- Work with the City staff, engineers, consultants, NEMO, DNR and others as appropriate to provide each City with model ordinances to address development and stormwater impacts.
- Assess the need and seek funding for consultant services to review and rewrite local ordinances, if needed.

- Work with Mankato Township and Lime Township to provide each with general information about urban stormwater runoff impacts and model ordinances to address stormwater impacts.

Objective: Reduce erosion at existing urban stormwater outlet structures

Actions:

- Work with City staff, engineers, SWCD and the County Ditch Manager to inventory and evaluate stormwater outlets to determine where erosion problems exist.
- Identify short-term and long-range solutions to stormwater runoff problems and construct structures, retention areas and other conservation practices where needed.
- Work with City staff and SWCD to seek funding for Action 2 if needed.

Objective: Reduce erosion from construction sites

Actions:

- Provide general information about MPCA NPDES permit rules to municipalities (not Mankato) and Mankato Township staff.
- Provide general information about MPCA NPDES permit rules along with construction permits issued by the County.
- Work with staff of municipalities, MPCA stormwater staff and others to assess compliance and educational needs related to State NPDES permit requirements.
- The City of Mankato will continue implementation of its Stormwater Pollution Prevention Plan, partnering with the County and local municipalities for education and other activities when appropriate.

Objective: City and County park systems will continue to develop and redevelop shoreland areas providing public access, reducing runoff, and protecting stream banks and shoreland.

Actions:

- The County Parks Department will continue to utilize and promote best management practices, such as rain gardens and use of native vegetation, in all County parks, as appropriate.
- The County will continue to work with lake associations, local conservation organizations, the DNR and other State agencies to stabilize shoreland areas in County Parks where needed and as funding is available.
- The City of Mankato will continue to redevelop waterfront areas, trails and parkways along the Minnesota River, Blue Earth River, Indian Creek, and Thompson Creek to improve water quality and provide education and access to the river for residents and visitors where appropriate and as funding is available.

Objective: Protect sensitive lake shoreland areas from development

Actions:

- Assess the shoreland and riparian areas of all lakes, especially those with greatest likelihood of development such as Madison, Duck, Ballantyne, George, Eagle, Lura, Crystal, Loon, and Mills Lakes, to provide a baseline and general information for the County Planning Commission and the affected municipalities.
- Address shoreline protection in the County's Comprehensive Land Use Plan and amend County land use regulations to protect shoreland areas from development impacts.

Objective: Promote homeowner BMPs to reduce pesticides, fertilizer and other pollutants generated by lawn, garage and home care

Actions:

- Work with city staff to provide data and information and sample educational materials, flyers, posters, etc.
- Include BMP's in County and SWCD newsletters, web sites and other outreach activities.

Priority Concern: County Drainage Ditches

Goal: Improve water quality with implementation of mutually-beneficial actions addressing both environmental concerns and drainage of land

Goal: Improve water quality by establishing ditch buffer strips and water retention in areas where environmental concerns and drainage needs are both addressed

Objective: Encourage voluntary establishment of ditch buffer strips on County ditches with education and information activities promoting the benefits of ditch buffers and the availability of financial incentives

Actions:

- The SWCD will provide a list of conservation funding opportunities to the Ditch Authority annually in order for the Ditch Authority to be fully aware of locally available incentives.
- The County and SWCD will increase communications providing information about water quality related benefits of ditch buffers and financial incentives available for establishing new ditch buffers.
- The County Ditch Authority and other County Departments will work together to provide information in general newsletters and the County website. The County Ditch Authority will develop written communications, such as letters and newsletters to ditch system owners when appropriate to special projects.

Objective: Increase the total miles of drainage ditch buffer strips on County ditches in Blue Earth County by 50 percent by December 31st, 2012. In order to achieve County goals for this objective, financial resources will be needed for additional staff, landowner incentives and acquisition costs.

Actions:

- Establish baseline data for this objective to consistently measure success over time, by using County data reported to BWSR to determine the total miles of ditch buffers in the County.
- Add a full-time SWCD Technician/BMP Coordinator from 2009-2012 to work at the SWCD working with conservation partners promoting and coordinating the establishment of buffer and filter strips on County ditches, tile intakes and other waterways with an emphasis on County ditches.
- Work with implementation partners to develop a reasonable, implementation goal and work plan annually for this objective assuming the addition of full time staff and financial incentives to coordinate bmp programs with a special emphasis on ditch buffers.
- Seek funding to provide financial incentives to establish ditch buffer strips on pre-identified County ditches.

Objective: Increase water retention and wetland restoration in County ditch drainage systems by 30 percent

Actions:

- Seek funding to expand the engineering and environmental review assessment for ditch improvement and repair projects to study flooding characteristics and downstream impacts during small, frequent storm events as well as 5,10, 25, 50 year flood events; water storage and retention practices; and water quality effects.
- Establish baseline data for this objective to consistently measure success over time.
- Seek funding to provide financial incentives to establish water retention areas.
- Work with local conservation groups and State and Federal agencies to seek funding and restore and enhance wildlife habitat in priority areas.
- Add a full-time SWCD Technician/BMP Coordinator from 2009-2013 at the SWCD working with conservation partners promoting and coordinating the establishment of water retention and wetlands.
- Work with implementation partners to develop a reasonable, implementation goal and work plan annually for this objective assuming the addition of full time staff and financial incentives to coordinate BMP programs with a special emphasis on ditch buffers and water retention

Objective: Identify, assess and prioritize County ditch systems and areas within County ditch systems for retention, wider ditch buffers and other strategies to improve surface and ground water quality and wildlife habitat

Actions:

- Work with local committees and workgroups with broad representatives of multiple interests similar to those formed for the Water Management Plan and Greenprint to develop criteria and methods for prioritizing program implementation. Representatives of ditch owners, wildlife conservation, rural residents, water quality and others will be involved. County GIS tools will be used to support the process.
- Priority areas will be assessed based on methods and criteria developed by committees and workgroups for program implementation as well as available resources, regulations and other requirements. The County and SWCD will work together to identify representatives and frequency of program planning and evaluation as needed.
- Identify and assess opportunities to reduce impacts from municipal storm water discharges with best management practices, including water retention, wetland restoration, buffer strips, grassed waterways, and other erosion control practices.
- Identify native plants best suited for ditch buffer plantings, assess and prioritize locations for native plants in conjunction with wildlife and other priority areas.

Priority Concern: Wetlands & Wildlife

Goal: Maximize opportunities to protect, enhance and restore wetlands and other natural areas to improve surface and ground water quality, fisheries, wildlife habitat, recreation and land conservation

Objective: Continue to administer the Wetland Conservation Act (WCA)

Action:

- Continue to administer the WCA, including TEP and with the DNR on WCA enforcement
- Objective: Continue to identify, assess and prioritize high priority areas for protection, enhancement and restoration of wetlands and wildlife habitat. Action(s):
- Continue to work with DNR Fisheries, DNR Wildlife staff and US Fish and Wildlife Service to identify, assess and prioritize specific areas important for wetland habitat, lake shore habitat, and other conservation practices.
- Work with local wildlife conservation organizations to identify, assess and prioritize specific areas important for wetland habitat, lake shore habitat, and other conservation practices.
- Continue to work with representatives of broad interests and stakeholders to identify, assess and prioritize wetland, lake shore habitat and other conservation areas.
- Evaluate the need for a Comprehensive Wetland Management Plan and ordinance in all or parts of Blue Earth County.

Objective: Encourage wetland and wildlife protection and other conservation strategies in park, open space, transportation, stormwater and land use plans.

Actions:

- Work with municipalities and townships in conjunction with stormwater implementation objectives and other planning projects to identify areas for wetland protection and enhancement within, adjacent and near the city limits.
- Continue to work with the County Public Works and Parks in conjunction with other planning projects to incorporate natural resources in transportation and park and open space plans.

Objective: Identify and incorporate ground water recharge areas in wetland and other conservation plans

Action:

- As described in the Groundwater Section of the Water Management Plan, the County views protection of ground water a very high priority. Additional data is needed to identify, assess and prioritize ground water recharge areas to target wetland protection and restorations.

Priority Concern: Ground and Surface Water

Goal: Prevent and reduce ground and surface water pollution from wastewater with administration of local programs intended to improve subsurface wastewater treatment and reduce wastewater discharges to surface waters

Objective: Continue to manage decentralized wastewater treatment with the County SSTS program

Actions:

- Maintain and update the County Ordinance consistent with State Statutes
- Issue permits, conduct inspections and maintain records for SSTS in Blue Earth County

Objective: Reduce the number of dwellings defined as imminent public health threats by 50 percent

Actions:

- Update and analyze all available data to reasonably estimate the number of imminent public health threats and determine a baseline to evaluate future results related to this goal.
- Assess the need for financial incentives, including low interest loans, to accelerate the percentage of compliant SSTS.
- Evaluate overall compliance levels every one to three years and adjust education and other program components accordingly to meet objective.

Objective: Evaluate septage management systems, including disposal, storage and land application

Actions:

- Identify the septage management systems of each contractor in the County.

- Work with pumpers, contractors, municipalities and other representatives to assess needs related to septage management in Blue Earth County.

Objective: Increase compliance with SSTS maintenance requirements

Actions:

- Determine the level of compliance with State regulated maintenance requirements.
- Work with haulers, property owner representatives and others to identify and address education, disposal and other needs related to septic system maintenance issues.

Brown County LWMP 2008-2018

Priority Concern: Soil Erosion

Goal: Address impaired surface waters and their TMDL's

Objective: Develop understanding of water quality issues.

Actions:

- Continue and expand water testing through Clean Water Partnerships (CWP's) and submit data to the MPCA
- Recruit volunteers for the MPCA's Citizen Stream Monitoring Program (CSMP) for impaired reaches
- Recruit CSMP volunteers in the rural community for water bodies that have no previous sampling record
- Develop baseline data information through coordination with MPCA, MDA, MDH staff that will meet listing and delisting requirements
- Follow approved sampling techniques and submit water quality data for analysis and review.

Objective: Reduce the impairments in surface waters.

Actions:

- Cooperate with SWCD and NRCS to market available conservation programs to landowners
- Develop strategies with the county drainage authority to address water quantity issues that explore alternatives to existing drainage management
- Utilize Counties Geographic Information Systems (GIS) data to inventory and target areas for best management practices
- Provide educational opportunities on the TMDL process to the public through articles, meetings and personal contacts
- Partner with Cities and Industries to define their role in the TMDL process and the practices they can utilize to reduce impacts.

Objective: Delisting of existing impaired waters.

Actions:

- Work with CWP's and MPCA in the development and implementation of Total Maximum Daily Load (TMDL) plans for impaired waters
- Provide County level assistance throughout study and implementation phases to coordinating agencies and organizations

- Work with individuals and businesses to help develop plans that will reduce their impacts to the developed implementation plan on impaired reaches
- Use developed priority areas as guide on progress and update implementation strategy based on successes and continued sampling.

Goal: Reduce soil erosion and sedimentation on agricultural lands

Objective: Identify areas that show potential for high erosion.

Actions:

- Use available GIS resources and soil survey information to identify areas of concern where soil and slope conditions exist that may cause highly erodible conditions
- Identify and map areas to be targeted for implementation projects
- Prioritize implementation projects based on impaired waters.

Objective: Cooperate with SWCD to promote and market conservation programs and practices.

Actions:

- Provide education to landowners in targeted areas on BMP's and conservation programs available through County, State and Federal programs
- Work with the Brown County SWCD to pursue additional cost-share and incentive funding for BMP's
- Work with County Board as the Ditch Authority to establish a long term or permanent buffer program
- Demonstrate conservation tillage, alternative drainage practices and BMP's through field days sponsored by the County, U of M, State Agencies and farm groups and businesses.

Goal: Reduce streambank erosion and ditch bank erosion

Objective: Identify problem areas within the County.

Actions:

- Utilize GIS data and ditch records to identify high priority areas prone to stream and ditch bank erosion
- Conduct air photo reviews of priority areas
- Conduct site visits and document erosion impacts
- Inventory and prioritize sites based on implementation potential.

Objective: Provide education and options to control stream and ditch bank erosion.

Actions:

- Target sites on the inventory list to educate and provide assistance to landowners on erosion control measures
- Pursue funding for the implementation of buffer strips and stream bank stabilization practices
- Develop and provide information on upland management practices including wetland restorations, water storage, and infiltration practices that help to store and meter water
- Provide education and information on grazing management practices that reduce bank erosion
- Seek and provide funding for demonstration projects for fencing or buffers that show benefits of bank stabilization
- Work with County Drainage Authority to develop a plan that considers water retention and storage as part of ditch repair and improvements
- Work with Ditch Authority on possible funding of buffer incentives through the County
- Research and provide information on cost effective conservation practices that provide ditch and stream bank stabilization and report to County Board
- Work with SWCD and NRCS to encourage the re-enrollment of expiring CRP contracts that promote stream and ditch buffers.

Goal: Reduce urban runoff and storm water impacts to surface waters.

Objective: Assess urban nonpoint source pollution in Brown County.

Actions:

- Consult with cities to review storm water system designs and current outlet systems
- Consult with cities to determine flows at different storm event levels
- Consult with industries to determine discharges to storm sewer systems and permitted discharges
- Sample to determine types and quantities of pollutants seen in the storm water system
- Work with State agencies to determine acceptable levels for storm water management
- Assess the nature, cause, and effect of urban runoff and storm water pollution on surface waters.

Objective: Provide education to cities and citizens on runoff and stormwater management.

Actions:

- Provide information and education opportunities to local officials on non-point source pollution, runoff and storm water issues
- Provide information to communities on the use of BMP's that reduce the effects of storm water runoff
- Provide education and training opportunities for implementation of storm water best management practices to city utility employees
- Assist in providing Phase II Storm water Program workshops for local officials and contractors

- Provide education opportunities to developers, and contractors on low impact development
- Provide education opportunities that highlight the role citizens play in nonpoint source pollution through press releases and community events
- Educate homeowners on the proper handling and disposal of household hazardous waste
- Offer incentives to residents to encourage redirecting runoff to pervious surfaces for on-lot infiltration.

Objective: Implement storm water and runoff practices with cooperating cities.

Actions:

- Assist communities to utilize existing and pursue additional funding for the implementation of urban best management practices
- Provide technical and financial assistance to communities to assist officials, developers, and contractors in fulfilling Phase II Storm water Program requirements
- Encourage and provide information on the utilization of storm water management practices including retention, infiltration and storm water wetlands
- Provide assistance on projects to follow erosion and sediment control regulations and techniques available from the MPCA and Minnesota Erosion Control Association (MECA)
- Encourage the development of Storm water Management Plans that consider practices that improve water quality including street sweeping, catch basin cleaning, leaf litter management, salt application, snow removal storage, ponds, filter strips, infiltration and plans for future improvements.

Priority Concern: Groundwater

Goal: Protect ground water sources from pesticide and fertilizer contamination from agricultural and urban contamination.

Objective: Obtain groundwater information relating to potential impacts.

Actions:

- Compile and review monitoring data from MDA on pesticide application and groundwater contamination
- Review Brown County Groundwater Vulnerability Project information; Work with MDNR and MGS on well log survey
- Work with Brown Nicollet Community Health for well information from nitrate testing studies.

Objective: Provide education and information on proper agricultural and residential application rates.

Actions:

- Use MDA guidelines to promote pesticide water quality BMP's

- Concentrate education activities on priority areas that show greatest potential for groundwater impacts
- Work with and provide information to applicators and producers on following the University of Minnesota recommended application rates
- Provide field day education opportunities for ag suppliers, applicators and property owners on proper application practices
- Encourage soil sampling to gain a better understanding of soil needs before application
- Provide technical and financial assistance to assist producers in adopting BMP's to reduce the impacts of manure runoff
- Develop residential educational resources on chemical and fertilizer application
- Provide educational resources and technical assistance to community groups, schools and at community events on utilizing BMP's.

Goal: Protect drinking water sources.

Objective: Recognize and support needs of public water supply wellhead protection.

Actions:

- Encourage community and non-community public water suppliers to develop and implement wellhead protection plans
- Work with public water suppliers to reduce potential impacts to drinking water sources
- Assist public water suppliers with the development of maps outlining the location of wells and radius of concern
- Consider wellhead protection areas when making land use decisions
- Utilize information provided by Minnesota Department of Health in source water assessments.

Objective: Encourage private well protection from contamination sources.

Actions:

- Educate homeowners, realtors, and contractors on the importance of maintaining proper setbacks from private wells to potential contamination sources
- Educate homeowners and realtors on the importance of well disclosure; Encourage homeowners to get private wells tested on a regular basis.

Objective: Encourage proper sealing of unused or abandoned wells.

Actions:

- Inventory locations of abandoned or unused wells
- Prioritize the sealing of unused or abandoned wells based on potential for contamination
- Use existing and develop new cost-share programs to assist with well sealing costs

- Develop and distribute educational materials for homeowners, realtors, bankers and attorneys on the importance of disclosing and sealing wells.

Goal: Minimize impacts to groundwater sources from industrial and rural development.

Objective: Reduce impacts of rural and industrial development on groundwater resources.

Actions:

- Define and map areas that may have low availability of groundwater resources and high potential for contamination
- Obtain up to date information on water use practices involving rural development including feedlot needs and ethanol production
- Inform Planning and Zoning office on industrial uses that have high water use potential and develop plans that consider high water use impacts
- Work with DNR to consider planning for significant water use developments.

Priority Concern: Drainage

Goal: Improve drainage management system based on water quality goals.

Objective: Cooperate with Drainage Authorities to inventory current drainage system.

Actions:

- Utilize mapping and data management process from current GIS ditch layer for public drainage systems
- Field verify ditch systems to determine as built conditions
- Compile ditch information relating to previous repair and improvements
- Inventory conservation projects currently active on ditch network
- Consider new GIS based information system with archived ditch maps and compiled information.

Objective: Determine and map problem areas.

Actions:

- Identify areas with high potential for failure due to the amount of inputs to the system
- Identify areas with high maintenance costs and develop solutions that provide water storage, reduced erosion and reduced maintenance
- Prioritize drainage systems that currently impact an impaired water body.

Objective: Reduce water inputs and provide water storage to the system.

Actions:

- Utilize GIS data to create potential water retention sites
- Identify upstream practices that slow or reduce flow to receiving waters in problem areas
- Pursue funding opportunities for water storage or wetland restorations in high priority areas
- Explore funding mechanisms through the Ditch Authority that rewards landowners for their water retention efforts through incentives or reduced taxing
- Develop controlled drainage demonstration site.

Objective: Develop education and incentives programs to increase conservation practices.

Actions:

- Promote and seek funding for the installation of buffers on the drainage systems
- Pursue funding for alternatives to surface tile inlets;
- Provide information and educational resources on water retention and wetland restoration efforts to officials and landowners
- Provide information and educational resources on controlled drainage to officials and landowners
- Develop economic worksheet considering water storage benefits to the system in reduced maintenance costs
- Encourage the County Drainage Authority to partner with other agencies for project support and funding.

Priority Concern: Wetlands/Water Retention

Goal: Protect existing wetlands and increase wetland resources.

Objective: Identify current wetlands and potential wetland restoration sites.

Actions:

- Create wetland inventory for existing wetlands covered under local, State and Federal jurisdictions
- Create drained wetlands inventory for water storage potential
- Create GIS map of wetlands currently managed through an easement or conservation program
- Identify wetland preservation areas according to the Wetland Conservation Act.

Objective: Educate citizens and officials on wetland functions and importance.

Actions:

- Collaborate with agency and conservation group partners to share information gathered through the inventory process Develop information to distribute to contractors, developers and realtors on wetland identification

- Provide wetland training opportunities to local officials who make planning, development and permitting decisions
- Work with DNR and Planning and Zoning on lakeshore development wetland impact issues
- Provide lakeshore owners information on needed permits for vegetation removal and beach development by the DNR.

Objective: Encourage wetland restoration and management.

Actions:

- Identify through the building permit process potential wetland impacts that may need consideration
- Protect existing wetland areas for their value to flood reduction, infiltration, sediment reduction, erosion control and nutrient reduction
- Administer the Wetland Conservation Act
- Work with DNR and USFWS to maintain existing wildlife and wetland areas; Educate landowners to the benefits of converting drained wetlands in the WRP and CRP programs
- Work with SWCD and other agencies to enroll individuals in wetland restoration programs.

Objective: Develop a Local Comprehensive Wetland Projection and Management Plan.

Actions:

- Form a stakeholder/advisor group of County Board members, BWSR, DNR, Brown County SWCD, Brown County NRCS and local citizens of the County
- Develop the plan according to Wetland Conservation Act 8420.0650.

Priority Concern: Human Wastewater

Goal: Eliminate Subsurface Sewage Treatment Systems (SSTS) contamination to surface and groundwater.

Objective: Maintain onsite sewage treatment inspection program.

Actions:

- Provide site and soils investigations with contractors to verify design criteria
- Provide assistance, review and approval of system designs
- Complete site inspections at time of installation
- Maintain file system of compliant systems and design and installation records.

Objective: Provide education and seek funding for septic program.

Actions:

- Provide educational materials on system design and maintenance to new septic system owners
- Provide pumping notice to homeowners for maintenance to systems
- Develop information to be used at meetings, events and shows on the importance of SSTS upgrade and maintenance
- Provide financial and technical status reports to County Officials
- Inventory of systems considered Imminent Threat to Public Health or Safety
- Continue seeking funds for low interest loan programs sponsored by Clean Water Partnerships and County Septic fund.

Goal: Assist with improvements and upgrades to municipal and industrial wastewater treatment systems.

Objective: Inventory of existing processes in waste water treatment facilities.

Actions:

- Work with waste water operators and municipal officials to gain understanding of current systems
- Develop inventory of current treatment plant operations
- Obtain permit information pertaining to facility discharges and their potential impacts to impaired waters.

Objective: Inventory of needs and funding opportunities for improved technologies.

Actions:

- Provide technical assistance and support to communities with inadequate sewage collection and treatment
- Work with operators to determine needs to upgrade and improve treatment facilities
- Research technologies to update and improve water treatment facilities
- Seek funding to upgrade processes and facilities as requested.

Cottonwood County LWMP 2007-2017 amended 2012

Priority Concern: Improve Surface Water Quality

Goal: Prevent further degradation of stream and lake water quality, with a priority for the Des Moines and Watonwan watersheds

Objective: Protect soil from erosion and prevent agricultural runoff.

Actions:

- Review zoning ordinances to insure minimal development impacts on surface waters
- Assist coordination of a multi-county yearly water festival that educates 850 children on environmental stewardship
- Help fund a multi-county yearly water festival that educates 850 children on environmental stewardship
- Help fund an annual environmental fair and conservation day which educates 500 children from southwest Minnesota
- Educate landowners on proper lakeshore and stream-bank stabilization practices
- Promote use of buffer strips along ditches and streams within the Des Moines and Watonwan watersheds
- Assist producers in applying for cost share opportunities for conservation practices; Promote conservation tillage, EQIP, and AgBMPs by contacting all County landowners through an informational bulletin sent by the SWCD
- Conduct conservation tillage transect survey for the County, and analyze data to determine residue cover
- Provide incentives for sign up of 80 acres of buffer strips along ditches and streams within the Des Moines, Heron Lake and Watonwan watersheds
- Enroll 500 acres of marginal land into CREP buffer strip program
- Reduce the amount of wind erosion by planting 12,500 feet of field windbreaks and living snow fences; also plant 25 acres of farmstead shelterbelts.

Objective: Address impacts of Drainage Management.

Actions:

- Administer the Floodplain Ordinance to assure adherence to water plan; Investigate developing a GIS layer of all public drainage systems

- Develop a GIS layer of all public drainage systems and include: system name, watershed size, outlets, date established, system type, repair history, improvement history, and other relevant data
- Assist with and install 25 grassed waterways
- Assist with and install 30 sediment control structures
- Work with Area II Representatives to identify areas in the Minnesota River basin watersheds for water retention structures
- Seek additional funding for water retention structures within the Des Moines River and Watonwan headwaters watersheds.

Objective: Wetland restoration and management.

Actions:

- Provide technical assistance to the Wetland Technical Evaluation Panel (TEP) to minimize the amount of wetland conversions
- Work with DNR and US Fish and Wildlife Service to maintain wetlands in existing wildlife areas
- Work with the Heron Lake Watershed District to educate landowners on the benefits of converting drained wetlands back to a vegetated state, using Wetland Reserve Program, Conservation Reserve Program and Continuous CRP
- Enroll 100 acres of marginal land into CREP/WRP wetland restoration program.

Objective: Address TMDL Impaired Waters.

Actions:

- Provide public information on water quality through a booth at the County Fair
- Provide public information on water quality through a booth at Windom Ag day
- Coordinate preparation of the Des Moines River TMDL study and plan
- Provide technical assistance for preparation of Greater Blue Earth Basin TMDL plans
- Provide technical assistance for preparation of the Little Cottonwood River TMDL plans
- Provide technical assistance for preparation of the Redwood/Cottonwood Rivers TMDL plans
- Coordinate implementation of the Des Moines River TMDL study and plans, through funding from Clean Water Legacy and other sources.

Priority Concern: Protect Ground Water

Goal: Assure long-term quality and quantity of groundwater supplies, with a priority for Drinking Water Supply Management Areas (DWSMA) and surficial aquifer areas.

Objective: Support Well Head Protection planning and implementation.

Actions:

- Educate cities on importance of Wellhead Protection
- Assist cities with completing a Wellhead Protection Plan
- Educate landowners in DWSMAs on measures to protect groundwater
- Protect DWSMA and surficial aquifer areas from agricultural and industrial contamination through conditional use hearings
- Maintain a GIS layer of wellhead protection areas throughout the County
- Assess effectiveness of existing ordinances to ensure that they protect and do not negatively impact Well Head Protection Areas
- Continue to cooperate with Red Rock Rural Water on the expansion of the rural water systems and advise the public about County programs that will help manage potential contamination sources
- Promote use of CREP in Well Head Protection Areas.

Objective: Prevent nitrate and pesticide infiltration of shallow groundwater.

Actions:

- Promote proper application of fertilizers and pesticides
- Promote use of grassed waterways and buffer strips along ditches and streams in surficial aquifer areas
- Conduct bi-yearly free clinics for testing nitrate levels in well water
- Seek additional funding for nitrate and pesticide education and outreach
- Assist 3 producers a year with nutrient management plans.

Objective: Prevent groundwater contamination from unused wells.

Actions:

- Work with well contractors to promote proper well protection and sealing
- Provide information to rural water system members about proper well protection and sealing programs
- Prevent contamination of groundwater aquifers through the sealing of 30 unused wells per year.

Objective: Protect long-term water supply.

Actions:

- Assist public water suppliers with water exploration within the County
- Promote water conservation by using existing materials and resources
- Protect long-term water supply through conditional use hearings for municipal, industrial, irrigation, or public water supply wells.

Priority Concern: Feedlots & ISTS

Goal: Protect public waters and assist residents in meeting feedlot and septic standards, focusing on immediate health and safety situations.

Objective: Assist feedlot owners to maintain compliance with MN Statute 7020 standards.

Actions:

- Conduct yearly meetings with township officials and promote Ag BMP's
- Inspect 10% of all registered feedlots per year to verify they are in compliance with MN Statute 7020
- Provide technical assistance for feedlot improvements to 150 projects over 5 years;
- Provide implementation funding through EQIP and state cost-share to 75 projects over 5 years
- Maintain a GIS layer of all registered feedlots compatible with E-link
- Provide manure sample kits to 12 producers a year
- Assist 10 producers a year with registered feedlots over 300 animal units to develop and maintain a manure management plan for proper manure application
- Assist 3 producers a year with nutrient management plans.

Objective: Continue to bring nonconforming ISTS into compliance with state standards.

Actions:

- Work through GBERBA to develop a basin-wide (Greater Blue Earth watershed) plan to accelerate upgrades to septic systems
- Upgrade 40 non-compliant septic systems per year
- Seek additional funding from USDA and other sources for ISTS construction
- Update County ISTS ordinance to achieve compliance with State rules
- Provide an informational packet regarding septic system maintenance to every landowner who installs a new ISTS
- Maintain a GIS layer of all septic system installations throughout the County
- Work with Cities to hook households and businesses with non-compliant ISTS onto municipal services
- Provide public information on state sewer rules and educate property owners about the imminent public health threats and environmental harm posed by non-complying systems.

Le Sueur County LWMP 2006-2015 amended 2011

Priority Concern: Impaired Waters/TMDLs

Goal: Protected, restored and improved surface water quality in lakes, rivers, and streams

Objective: Work with the MPCA, Lake Associations, neighboring counties, and other state and federal agencies on TMDL process with the development of TMDL implementation plans that address impairments according to the MPCA schedule by 2015

Actions:

- Determine annually, the local impairments from 303(d) list and the timeline of the State to address these impairments
- Develop TMDL Implementation Plans by coordinating and/or participation in meetings and providing input

Objective: Implement TMDL Implementation Plans by year 2015

Actions:

- Incorporate TMDL implementation actions into local plans
- Implement TMDL plans

Objective: Collect useful scientific water quality data on area lakes, streams, rivers and wetlands within Middle Minnesota River watersheds when funding is available

Actions:

- Locate funding sources to assess surface water in the Middle MN Watershed
- Implement the monitoring project which includes entering data into the state reporting program

Priority Concern: Wastewater Treatment

Goal: All septic systems in Le Sueur County brought into compliance

Objective: Strengthen and improve ISTS Local Program by December 2015

Actions:

- Conduct a septic system inventory. Enter data into Seplog and ArcMap using GPS as a mapping tool
- Update septic system inventory on a regular basis
- Develop plan to hire a full time Septic Program staff person

Objective: Increase the number of ISTS upgrades to bring systems into compliance by 20% annually

Actions:

- Continue the countywide revolving loan program for septic upgrades
- Develop incentive payment program for septic upgrades
- Locate grant-funding sources for incentive payment program for septic upgrades
- Implement program for septic upgrades
- Educate landowners about nonconforming septic systems and the relationship between these systems and water quality through news releases, workshops, brochures and mailings
- Promote local ISTS/SSTS programs that offer education, financial assistance and alternative system research
- Work with Lake Associations and municipalities on sewer options

Priority Concern: Stormwater Management

Goal: Minimize impacts from runoff of development areas and agricultural land that alter surface water hydrology

Objective: Increase the number of water retention structures and practices on the landscape by 30% annually by 2015

Actions:

- Actively promote programs that provide financial assistance to install water retention BMPs. See watershed implementation plans for priority projects
- Locate funding sources to bring the 50% cost share programs up to 75%

Objective: Increase the number of wetland restoration contracts in the county by 20% annually by 2015

Actions:

- Promote wetland restorations and programs in areas that will address surface water peak flow
- Locate funding sources for incentive for wetland restorations
- Maintain GIS coverage of wetland restoration

Objective: Increase the number of municipal and shoreland water retention structures and practices on the landscape by 30% by 2015

Actions:

- Create an inventory of municipal stormwater systems and locate areas that flood
- Actively promote programs that provide financial assistance to install water retention BMPs
- Locate funding sources that offers 75% cost share

- Implement the rain garden/native plantings Cost Share Project by installing up to 20 shoreland BMP projects

Goal: Diminished runoff issues cause by urban and development runoff

Objective: Promote sound hydrologic stormwater management to reduce runoff to 11 municipalities and developers and unincorporated areas by 2015

Action:

- Provide information to all municipalities, their residents and to developers in Le Sueur County on Best Storm Water Management practices through letters, news releases, and workshops

Objective: Promote stormwater management to municipalities and all residents to reduce pollutants from reaching surface water annually by 2015

Actions:

- Provide information to all municipalities, their residents and to developers in Le Sueur County on Best Stormwater Management practices through letters, posters, news releases, and workshops
- Develop two workshop projects and locate funding for workshops on stormwater management

Priority Concern: Protection of Undeveloped Shoreline

Goal: Achieved no net loss of existing natural shoreline

Objective: Respond to 100% shoreland regulation inquiries annually

Actions:

- Respond to all shoreland regulation inquiries and ensure proper restitution if violations occur
- Provide information and assistance to landowners and lake associations for the development and implementation of shoreline restoration plans and projects
- Review other county ordinances that have high number of lakes
- Review local shoreland ordinance and revise if necessary

Goal: Achieved a new natural shoreline gain through shoreline restorations

Objective: Complete up to 40 shoreland improvement projects by 2015

Actions:

- Educate shoreland owners on shoreland BMPs and the need to restore shoreline to a more natural state through news releases, workshops, representation to organizations. Ag shoreland buffers are included in this

- Locate funding for Lake Shoreland Restoration Projects and implement shoreland restoration projects
- Promote shoreland protection through green space planning, Natural Resources Inventory, educational programs and research efforts through publications, presentation, workshop efforts of federal, state and local agencies

Priority Concern: Drinking Water Protection

Goal: Protected groundwater quality and quantity

Objective: Educate the public on proper construction, maintenance, protection and abandonment of wells and conservation of groundwater through two news releases and/or presentations annually

Action:

- Inform the public on the importance of well construction, maintenance, protection and abandonment and water conservation annually through various media sources

Objective: Coordinate water-testing clinic for up to 200 county residents with wells that include nitrate and arsenic by 2015

Actions:

- Locate funding for a water testing clinic that includes nitrate and arsenic testing throughout the county
- Organize and implement the water testing clinics, provide information to residents on arsenic and nitrate at the clinics
- Compile collected information and enter into GIS mapping program
- Provide outreach on arsenic following the testing clinic to disseminate information on arsenic in water supplies

Objective: Gather information about groundwater quantities and interconnection to surface water by 2015

Actions:

- Continue to monitor existing observation wells through the DNR OBWELL Program
- Identify major groundwater usage within the county through appropriation permits
- Work with state agencies on stream flow data and interpretation to determine relationship to groundwater recharge
- Investigate methods for obtaining a Class V Injection Well Inventory within groundwater management zones in wellhead protection areas
- Maintain and improve GIS files to assist Le Sueur County with water management efforts and decision making
- Investigate water quality monitoring sites that are in the vicinity of landfills

Priority Concern: Agricultural Drainage Management

Goal: Maintained drainage systems while sustaining agricultural productivity as well as improving artificial drainage water quality, understanding the system is part of a larger tributary system

Objective: Apply watershed base principles to drainage system management

Actions:

- Ensure that public drainage systems are operated and maintained in accordance with the State Drainage Law (M.S. Chapter 103D) and other applicable regulations
- Support drainage research and local demonstration projects that improve water quality
- Work with County Ditch Authority, the County Highway Department and MNDOT on drainage outlets that drain directly to lakes and rivers that need repair
- Modernization of ditch records
- Educate the public about drainage issues, drainage options to improve water quality, and the request if redetermination of benefits
- Promote programs that provide financial and technical assistance to install BMPs along drainage systems that will improve water quality

Priority Concern: Minimize environmental risks of agricultural impacts to water resources

Goal: Reduced water quality issues from agricultural sources to surface water

Objective: Secure funding for surface water protection and improvement projects on a watershed basis by 2015

Actions:

- Prioritize watersheds, carry out project development for watershed improvement projects, locate funding, implement project
- Work with Met Council, Scott and Rice Counties on a Sand Creek Watershed implementation project
- Promote Federal, State and local cost share and financial assistance programs for conservation projects to agricultural producers
- Locate funding sources to enhance 50% cost share programs to 75% cost share in priority watersheds
- Provide cost share funds through grant funded projects for installation of conservation practices

Objective: Provide education on nutrient management to residents by 2015

Actions:

- Support Minnesota Extension Service Nutrient Management Projects through assisting with locating funds to provide incentive for following MES guidelines
- Address manure management issues through the county feedlot program in assessed priority watershed and countywide

Nicollet County LWMP 2008-2018

Priority Concern: Stormwater management

Goal: Stormwater control

Objective: Innovative techniques for city stormwater control

Actions:

- Assist the City of Lafayette with their stormwater improvement project
- Assist the City of Lafayette with installation of 4 rain gardens
- Assist cities in researching grants and loans for stormwater projects, including control of erosion during construction
- Work with cities to continue and increase stormwater education
- Encourage the cities to continue to inform their citizens of the outlet source of the storm water drains

Objective: Erosion control and best management practices

Actions:

- Continue research into various practices
- Implement new practices at 5 locations
- Hold one demonstration of new practices each year
- Hold one demonstration on current BMPs each year
- Research methods to address ravine erosion

Objective: Sensitive land along ravines and streams

Actions:

- Implement BMPs at 20 locations throughout the 10 year plan
- Hold one educational event per year on ways to keep surface water from eroding ravines
- Promote structural practices in ravine buffer strips

Objective: Establish filter strips along riparian corridors, bluff land interfaces, ditches, and natural streams

Actions:

- Establish 5 buffer strips per year
- Send out 20 proposals to landowners per year

Objective: Stormwater education

Action:

- Develop and distribute information on the BMPs of stormwater management yearly

Priority Concern: Urban and Rural Resource Management

Goal: Urban and rural resource management

Objective: Establish buffers and native plantings

Actions:

- Establish buffer strips around 2 existing wetlands during the duration of the Plan
- Hold 2 demonstrations on all aspects of native grass plantings in rural and urban areas where applicable

Objective: Subsurface sewage treatment systems

Actions:

- Upgrade 65 non-compliant systems per year
- When applicable continue with County funding for upgrades
- Continue funding full time SSTS inspector program

Objective: Wetlands

Actions:

- Utilize college interns to complete mapping historic wetlands started under Seven Mile Creek CWP project
- Work with other agencies to reestablish 25 acres of wetlands

Objective: Parks and scenic areas

Actions:

- Continue efforts to purchase additional land for established parks and scenic areas
- Search out grants and other avenues to continue to furnish state-of-the-art playground equipment
- Continue to enhance the county park and scenic areas with landscaping (including costs)
- Assist the Parks Department and Probation Office in the building of a structure at SMC Park to store equipment for the Park and Sentence-to-Serve crew
- Assist landowners, cities, townships and agencies in preserving and enhancing scenic areas such as lakes and the scenic roadways as request
- Work with DNR and landowners in the Swan Lake Watershed to plant 1 area in native plants and restore 1 wetland area within the 10 year lifespan of the plan

- Assist with grants and other contributions for purchase of the 2.8 acre lot adjoining and to the west of Minnemishinona Falls Scenic Outlook

Objective: Manure management plan

Actions:

- Advocate manure and soils testing with 10 area producers
- Develop 5 manure plans utilizing U of M guidelines and match up application rates with needs of crops and discuss with area producers
- Discuss with 5 area producers the issues of over application of commercial fertilizer and manure
- Seek 2 landowners who will erect educational signs that show benefits of using manure as fertilizer, e.g. 10 hogs fertilize 1 acre

Objective: Solid waste

Actions:

- Continue to enforce the Solid Waste Ordinance
- Continue ways of promoting proper solid waste disposal throughout the county
- Continue Open Burning/Burn Barrel education campaign at the County Fair demonstrations and presentations
- Hold Household Hazardous Waste Collections and Tire-Appliance Electronic Collections yearly (cost includes disposal and staffing)
- Develop and distribute educational information packets on the dangers of using backyard burn barrels to 50 citizen per year
- Give annual presentations to 2 schools on recycling, dangers of backyard burning and/or solid waste
- Seek Funding for solid waste education and help clean up problem areas

Objective: Education

Actions:

- Continue to hold the Annual Children's Water Festival for Fourth Graders
- Continue to attend Career Day and present occupational information
- Annually donate tree seedlings to elementary students
- Continue to participate in the Fort Ridgely Education Days every year

Priority Concern: Total Maximum Daily Loads

Goal: TMDLs

Objective: Seven Mile Creek Watershed (SMC WS)

Actions:

- Assist with the implementation of the Fecal Coliform TMDL Study
- Seek innovative ways of accomplishing the objectives of the Fecal Coliform TMDL Implementation
- Contact 5 landowners along ditch systems to implement CRP
- Contact 5 landowners for wetland restorations under CRP
- Install 2 structural practices through EQIP & State Cost-Share Program

Objective: Rush River Watershed (RR WS)

Actions:

- Complete the Implementation Plan for Fecal coliform Bacteria Impairment
- Assist with the Implementation of the Fecal Coliform TMDL Study
- Assist with the Turbidity TMDL Study
- Seek innovative ways of accomplishing the objectives of the Fecal Coliform Implementation Plan
- Contact 5 landowners along ditch systems to implement CRP
- Contact 5 landowners for wetland restorations under CRP
- Install structural practices through EQIP & State Cost-Share Program
- Install 5 rock tile inlets per year

Objective: Middle Minnesota BMP CWP

Action:

- Continue the initiatives as set forth in the CWP work plan

Objective: Roger's a.k.a Robard's Creek

Actions:

- Investigate the Fish Biota (IBI) Impairment Listing on Roger's Creek
- Pursue removal from the TMDL List if appropriate
- Pursue writing a TMDL Study if applicable

Objective: Minnesota River TMDLs

Action:

- Work with adjacent counties along the Minnesota River to form partnerships to complete the Turbidity TMDL Study for implementation

Objective: Education

Action:

- Promote education on the improvement of the Minnesota River and the importance of its tributaries

Priority Concern: Ground water

Goal: Groundwater

Objective: Township well water testing

Actions:

- Continue Township Well Water testing program if applicable, every three years
- Continue to support GIS water quality data base input from township testing

Objective: Wellhead Protection

Actions:

- Assist the cities of North Mankato and Courtland in wellhead protection plans and implementation as applicable
- Assist property owners that have transient and non-transient wells, as designated by MDH, in wellhead protection plans and implementation as applicable
- Assist property owners in education about wellhead areas around private wells as applicable
- Assist in seeking wellhead protection implementation funding

Objective: Well Sealing

Actions:

- Use state cost share and other funds to assist with 2 well decommissioning per year
- Assist cities in obtaining funding for relocation and sealing of municipal wells

Objective: Education

Actions:

- Assist Extension in one educational event on protection of rural wells
- Assist in education on non-community public water supply systems and interwell management zone at County Fairs

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.

Sibley County LWMP 2013-2023

Priority Concern: Drinking water quality

Goal: Protect and improve the quality of groundwater for the citizens of Sibley County

Objective: Encourage the public to protect public and private wells from contamination

Actions:

- Assist the cities of Arlington, Gaylord, Gibbon, Green Isle, Henderson, New Auburn and Winthrop as they create or update their Wellhead Protection Plans.
- Continue to encourage and provide financial assistance to landowners to seal abandoned or unused wells. Seal 10 wells per year if funding is available.
- Continue to encourage and provide financial assistance to landowners to seal abandoned or unused wells. Seal 10 wells per year if funding is available

Goal: Protect and improve the quality of surface waters

Objective: Work with rural and urban landowners to continue to improve surface water quality

Actions:

- Continue to offer best management practices and incentives to landowners for the implementation of water quality related BMPs such as structures, buffer strips, conservation tillage, terraces, inlet alternatives and contour farming. Offer incentives to 10 projects annually
- Encourage the use of Solid Waste Programs such as discouraging burn barrels and burying solid waste
- Continue the agricultural bag pickup program each spring and fall
- Continue with the yearly recycling of tires, appliances and electrical products
- Clean-up 1 township dump site annually
- Provide the public with a yearly hazardous waste pickup program. Biannually review the program
- Target 100 acres annually of highly erodible land for enrollment in conservation easement programs
- Conduct site evaluations and provide technical assistance to interested landowners that want to install water quality related BMPs. Such as water and sediment basins, waterways, filter strips, structures, field windbreaks and terraces. Implement 5 projects each year

Goal: Conduct water quality studies

Objective: Work with MPCA, watershed districts, lake associations, neighboring counties and other state and federal organizations to address water quality issues

Actions:

- Work with partners to continue water quality monitoring efforts. Target 25 samples per year for each of the 5 monitoring sites. Annually review data and prioritize BMPs
- Cooperatively work with partners to coordinate the preparation and implementation of TMDL and IWM studies and plans. Beginning in 2013 with the Middle Minnesota River Watershed and in 2014 with the Lower Minnesota Watershed.
- Continue to have the DNR monitor groundwater test wells.
- Partner in MPCA's watershed approach to identify and address all water quality problems. Beginning in 2013 with the Middle Minnesota River Watershed and in 2014 with the Lower Minnesota Watershed

Priority Concern: Water quantity

Goal: Encourage the preservation and restoration of wetlands

Objective: Utilize partners to restore wetlands offer incentives to install BMPs

Actions:

- Work with partners to prioritize and promote the preservation and restoration of wetlands. Target 50 or more acres annually to be restore if funding is available
- Continue to have Sibley SWCD administer the Minnesota Wetland Conservation Act
- Work with the County Drainage Authority on abandoning or relocating public drainage systems in conjunction with wetland restorations

Goal: Conduct water quantity studies

Objective: Collect useful water quantity data on the lakes, streams, river and wetlands within the county

Actions:

- In conjunction with water quality monitoring efforts continue to study water quantity. Continue to sample a minimum of 25 times per year at each established sampling site. Annually review data and prioritize BMPs.
- Use TMDL and IWM studies to follow the effects of water quantity. The Middle Minnesota River Watershed in 2013 and the Lower Minnesota River Watershed in 2014
- Work with partners to study what effects water quantity has with flooding. Study land areas susceptible to increased erosion due to increased water quantity and/or precipitation intensity. Annually review sampling data and look for trends that are emerging
- Continue the local rain gauge monitoring program and increase the number of volunteer rain gauge readers that report to the State Climatology Office. Target a minimum of 7 additional readers

- Continue to work on Re-determination of Benefits of the County's public drainage system. Phase 2 of System 1 – Middle Branch Rush River in 2013 and Phase 3 of System 1 – Middle Branch Rush River in 2015, with future phases being determined at a later date

Priority Concern: Nutrient, Manure and Human Waste

Goal: Reduce the amount of phosphorus and nitrogen that is entering the water

Objective: Work toward all producers using approved nutrient and manure management plans

Actions:

- Partner with lake groups to reduce the amount of sediment, phosphorus and nitrogen that is coming into their lakes. Promote the installation of BMPS, including but not limited to terraces, grassed waterways, buffer strips, conservation tillage and shoreline restorations as money is available. Implement 3 projects annually
- Partner with Watershed projects to show landowners the benefits of proper nutrient management. Target impaired subwatersheds
- Continue to provide county staff; that locally administers the County Feedlot Program to assist feedlot operators in obtaining and maintaining compliance with feedlot rules. Assist feedlot operators when they renew their permit every four year
- Continue to have Environmental Services staff attend feedlot program training annually
- Provide educational and technical assistance, as available, to agricultural landowners and producers for proper manure and nutrient management. Host an educational seminar or demonstration every third year
- Utilize TMDL monitoring results to monitor the progress of phosphorus and nitrogen loading. Review data annually to prioritize subwatersheds for BMP implementation

Objective: Continue to encourage homeowners to install compliant septic systems

Actions:

- Continue to have the Cities of Arlington, Gaylord, Gibbon, Green Isle, Henderson, New Auburn and Winthrop monitor and manage wastewater discharge
- Continue to work toward 100% compliance of individual septic systems by offering low interest loans to eligible home owners. Target 30 loans per year
- Continue to have county staff provide compliance and inspection services as part of the County's SSTS Program. Sibley County contracts SSTS compliance and inspection services with a private entity
- Provide educational assistance, every third year (2015, 2018 and 2021) to homeowners on proper SSTS maintenance

Priority Concern: Soil Erosion

Goal: Reduce erosion and sediment loading of surface waters

Objective: Install BMPs that reduce erosion or sediment loading

Actions:

- Promote effective BMPs, but not limited to water and sediment basins, terraces, waterways, buffers, contour farming, conservation tillage and streambank restorations to landowners to reduce erosion and sediment loading to surface waters. Implement 7 projects per year, if funding is available
- Work with partners to identify highly erodible land and promote the use best management practices such as enrolling in conservation easement programs. Target 150 acres annually
- Continue to maintain the County's public drainage system ensuring that State Drainage Law (M.S. Chapter 103E) and other applicable regulations are followed
- Study alternative drainage ideas and how that would affect soil erosion and associated nutrients. (Bio-reactors, pattern tiling, controlled drainage and rock inlets)
- Provide financial assistance, when available, for the installation of alternative drainage BMPs. Target 30 alternative inlets and 1 alternative drainage BMP per year
- Work with Cities of Arlington, Gaylord, Gibbon, Green Isle Henderson, New Auburn and Winthrop to promote effective storm water management
- Continue to use TMDL studies to reduce erosion and sediment loading by prioritizing the use of effective BMPs in the Buffalo Creek, High Island Creek, Rush River, Bevens & Silver Creek and Middle Minnesota River Watersheds

Priority Concern: Plan Administration

Goal: Provide for effective plan administration and coordination

Objective: Maintain adequate staffing, utilize the Water Resources Advisory Committee and Joint Powers Boards

Actions:

- Maintain the position of Water Planner at or above present levels to coordinate and lead water planning efforts in Sibley County as well as provide for required reporting as necessary
- Continue to support and participate in the regional watershed efforts of existing and future Joint Powers Boards and other entities

Goal: Review and update the Water Plan

Objective: Provide for an annual review and mid-term revision of the plan

Actions:

- Continue to conduct semi-annual meetings of the Water Resources Advisory Committee to identify emerging issues. Annually review the Water Plan.
- Update the goals, objectives and actions section of the Water Plan prior to the end of the plan's fifth year (2018).
- Revise the Comprehensive Local Water Plan prior to the plan expiring in 2023.

Goal: Use of GIS data

Objective: Utilize GIS data to enhance work of county departments

Actions:

- Invest in geographic information to support the work of county departments.
- Provide training to staff for the use of GIS.
- Explore the feasibility of establishing and funding a GIS Department in Sibley County.

Goal: Pursue grant funding opportunities

Objective: Seek out funding to implement identified plan activities

Action:

- Work with partners to secure Clean Water Funds and other funding opportunities to implement water plan activities

Objective: Investigate funding opportunities to keep the water plan a fully funded position

Action:

- Continue to seek additional funding to supplement the water plan budget and fund the water plan coordinator position

Watonwan County LWMP 2008-2018

Priority Concern: Surface Water Quality Protection & Improvement

Goal: Prevention of further impairment of stream and lake water quality in the waters of Watonwan County

Objective: Agricultural Runoff

Actions:

- Make landowners aware of minimum tillage, ridge till, strip till and no till options through correspondence, news articles and personal contact
- Provide financial support for alternative tillage through EQIP
- AgBMP low interest loan funding for minimum tillage and no till equipment
- Inform landowners regarding the availability of easement programs: CRP, RIM, WRP & WHIP through the SWCD website
- Cost share funds for water retention and erosion control, terraces, waterways, sediment basins, retention ponds
- 3rd crop programs
- Annual Environmental Day for all county 6th graders.
- Assist county drainage officials in determining compliance with buffer requirements on drainage ditches
- Provide information to the public on water quality and conservation through a booth and display at the county fair
- Bring the Prairie Ecology Bus annual display to the county fair

Objective: TMDL Assessment

Actions:

- Participate in GBERBA TMDL planning efforts
- Address TMDL's through selling of BMP's and provision of technical assistance in BMP implementation

Objective: Shoreland Management

Actions:

- Review and assess adequacy of Watonwan County Shoreland Ordinances and procedures
- Administer and enforce when necessary compliance with county ordinances and state recommendations, in cooperation with DNR staff

- Provide educational opportunities for shoreland residents and landowners on proper shoreland use and management

Objective: Feedlots & Nutrient Management

Actions:

- Manure management plans developed and maintained as required by county ordinances
- Continue county delegation agreement with MPCA for inspections and registrations of feedlots
- Coordinate efforts with the Madelia Project for potential use of livestock waste in bio-fuels production
- Administer permitting of new and expanded feedlot sites to fit local and state standards. Forward all applications that exceed minimums for animal unit thresholds to MPCA for processing as National Pollutant Discharge Elimination System permits
- Provide information to feedlot owners and operations on a frequent basis of setback requirements for manure application by letter annually
- Distribute, collect and file upon receipt manure application acreage and volume records as required in the county ordinance
- Ag BMP loan program funds offered for manure handling equipment

Objective: Wastewater Treatment

Actions:

- Bring about ISTS replacements and upgrades through the provisions of the Watonwan County Zoning Ordinance
- Installation and replacement of 150 septic systems over 5 years
- Seek sources of low interest loan funds for ISTS
- Completion of efforts to have all incorporated communities in Watonwan County served by wastewater treatment facilities
- Communicate through correspondence with permit holding homeowners on maintenance of septic systems. Send bi-annual letter of reminder to pump septic tanks regularly
- Review and update the wastewater treatment section of the Watonwan County Zoning Ordinance

Objective: Wetland Restoration

Actions:

- Provide opportunities for the utilization of CRP, RIM, WRP, WHIP and wetland banking in Watonwan County
- Use newsletters, news articles, meeting and personal contacts and SWCD website to inform landowners and producers on the value of wetland restoration and protection
- Administer and enforce the Watonwan County Flood Plain Ordinance

- Act as county authority for purposes of administration of Wetland Conservation Act

Priority Concern: Groundwater Protection

Goal: Assure protection of the quality and safety of drinking water supply that is drawn from aquifers that serve the county and its inhabitants and assure a vigilant approach is take and maintained in assuring the sustainability of groundwater.

Objective: Rural water

Action:

- Secure an inventory of rural water services in Watonwan County from Red Rock Rural Water

Objective: Well head protection

Actions:

- Coordinate activities and requests for permits in WHP's and DWSMA's with the unit of government that administers the protection plans
- Participate in the development of future DWSMA and WHP plans

Objective: Landuse

Actions:

- Review and update of the Watonwan County Zoning Ordinance as it addresses Mining and Extraction
- Target application acres in manure plans located in sensitive areas and DWSMA's for review
- Provide producers with information regarding availability of assistance with the closure of abandoned manure storage facilities through EQIP
- Continue county water screen services
- Monitor eight DNR observation wells in the county
- Direct potential users to DNR for necessary appropriation permits
- Make irrigation operators aware of assistance in conversion to low pressure irrigation through EQIP

Objective: Pesticide Application

Actions:

- Administer MDA pesticide application testing. Direct custom manure applicators to appropriate county sites for testing
- Use newsletters and news articles to remind producers on the importance of following label requirements for ag pesticide application

- Provide an opportunity to enroll in NRCS comprehensive nutrient and pest management planning through EQIP

Objective: Well Sealing

Action:

- Provide financial assistance for the sealing of unused and abandoned wells in the county

Priority Concern: Groundwater Protection

Goal: Assure protection of the quality and safety of drinking water supply that is drawn from aquifers that serve the county and its inhabitants and assure a vigilant approach is taken and maintained in assuring the sustainability of groundwater.

Objective: Rural water

Action:

- Secure an inventory of rural water services in Watonwan County from Red Rock Rural Water

Objective: Well head protection

Actions:

- Coordinate activities and requests for permits in WHP's and DWSMA's with the unit of government that administers the protection plans
- Participate in the development of future DWSMA and WHP plans

Objective: Land use

Actions:

- Review and update of the Watonwan County Zoning Ordinance as it addresses Mining and Extraction
- Target application acres in manure plans located in sensitive areas and DWSMA's for review
- Provide producers with information regarding availability of assistance with the closure of abandoned manure storage facilities through EQIP
- Continue county water screen services
- Monitor eight DNR observation wells in the county
- Direct potential users to DNR for necessary appropriation permits
- Make irrigation operators aware of assistance in conversion to low pressure irrigation through EQIP

Objective: Pesticide Application

Actions:

- Administer MDA pesticide application testing. Direct custom manure applicators to appropriate county sites for testing
- Use newsletters and news articles to remind producers on the importance of following label requirements for ag pesticide application
- Provide an opportunity to enroll in NRCS comprehensive nutrient and pest management planning through EQIP

Objective: Well Sealing

Action:

- Provide financial assistance for the sealing of unused and abandoned wells in the county

Priority Concern: Sediment Control & Stream Protection

Goal: To reduce sedimentation to streams and lakes and reduction of the effects that sediment has on habitats, stream courses, transfer of pollutants and impaired downstream conditions.

Objective: TMDL's

Actions:

- Utilize pictography technology to assist in identification of potential sediment sources.
- Provide technical assistance for implementation of BMP's as determined for local and regional TMDL's for aquatic life as affected by turbidity, sediment, and Fish Index of Biological Integrity.

Objective: Watersheds

Action:

- Provide technical assistance to watershed organizations and agencies in development of basin TMDL's and plans.

Objective: Streambank repair and protection

Actions:

- Cooperate with DNR on conditional use and other permits for shoreland development to assure compliance with local and state standards.
- Provide cost share opportunities for the installation of buffer strips along streams, lakeshores and ditches and monitor buffer requirement compliance along drainage ditches.
- Assist landowners in seeking cost share funds for sediment control BMP's.
- Provide technical assistance for evaluation and design of BMP's

- Direct developers and contractors to obtain NPDES construction stormwater permits for projects that meet minimum affected area requirements.
- Provide financial support to townships in continuation of self-determined projects for reduction of sedimentation. Provide technical assistance and financial support for culvert end, bridge abutments, ditch bank erosion and other sediment delivery sources within the townships.