

THE MCLEOD COUNTY COMPREHENSIVE LOCAL WATER PLAN

~ 2013-2023 ~

WITH A FIVE-YEAR
IMPLEMENTATION PLAN



Swan Lake Park Pier

**ADOPTED:
JUNE 18, 2013**

*Prepared by McLeod County and the
Mid-Minnesota Development Commission*

McLeod County Water Plan Task Force

Voting Members

Grant Knutson ~ Lynn Township
Ryan Freitag ~ McLeod County SWCD
Robert Anderson ~ Citizen
Donald Albrecht ~ Townships
Herman Miller ~ High Island Watershed District
Corey Henke - Buffalo Creek Watershed District
Lee Sundmark ~ MN DNR
Skip Quade ~ Local Business
Virgil Voigt ~ Pheasants Forever
Clayton Schmitz ~ NRCS

Ex-Officio Members

Kathy Nowak ~ McLeod County Public Health
Paul Wright ~ McLeod County Commissioner
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McLeod County Key Water Plan Stakeholders

~ click the link to visit their website ~

[Minnesota Board of Water & Soil Resources \(BWSR\)](#)

[Minnesota Department of Agriculture \(MDA\)](#)

[Minnesota Department of Natural Resources \(DNR\)](#)

[Minnesota Pollution Control Agency \(MPCA\)](#)

[Minnesota Department of Health \(MDH\)](#)

[The Crow River Organization of Waters \(CROW\)](#)

[Buffalo Creek Watershed District \(BCWD\)](#)

[High Island Creek Watershed District \(HIWD\)](#)

[McLeod County Soil & Water Conservation District \(SWCD\)](#)

[Natural Resources Conservation Service \(NRCS\)](#)

McLeod County
Comprehensive Local Water Management Plan
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McLeod County

Comprehensive Local Water Management Plan:

Executive Summary

This McLeod County Water Plan follows the provisions set forth in Minnesota State Statutes 103B.314 - Contents of [Water] Plan.

A. Purpose of the Local Water Management Plan

According to Minnesota Statute 103B, each county is encouraged to develop and implement a local water management plan with the authority to:

- Prepare and adopt a local water management plan that meets the requirements of this section and section 103B.315;
- Review water and related land resources plans and official controls submitted by local units of government to assure consistency with the local water management plan; and
- Exercise any and all powers necessary to assure implementation of local water management plans.

Pursuant to the requirements of the law, this McLeod County Water Plan:

- Covers the entire area of McLeod County;
- Addresses water problems in the context of watershed units and groundwater systems;
- Is based upon principles of sound hydrologic management of water, effective environmental protection and efficient management;
- Is consistent with comprehensive water plans prepared by counties and watershed management organizations wholly or partially within a single watershed unit or groundwater system; and
- Will serve as a 10-year water plan (2013-2023), with a 5-year implementation plan (2013-2018). In 2018, the implementation plan will be updated.

B. A Description of McLeod County's Priority Concerns

Chapter Two provides a detailed assessment of the priority concerns. Based upon the McLeod County Water Plan Survey, comments received during the water plan public informational meeting, and the comments received by the various water plan stakeholders, the Water Plan Task Force identified the following McLeod County priority water planning issues (**note: these issues are not ranked**):

1. Surface Water Quality ~ Reducing Priority Pollutants
 - a. Erosion & Sediment Control
 - b. TMDL Implementation
 - c. Feedlot/Livestock Management
 - d. Subsurface Sewage Treatment Systems
 - e. Aquatic Invasive Species
2. Surface Water Quantity ~ Management
 - a. Agricultural Drainage
 - b. Stormwater Management
 - c. Wetland Restorations
3. Groundwater Quality & Quantity
 - a. Wellhead Protection Areas
 - b. Drinking Water Quality
4. Plan Administration
 - a. Watershed Focus
 - b. Raising Public Awareness

C. Summary of Goals, Objectives, Action Steps, and Estimated Costs

To address the priority concerns identified in the scoping process, the McLeod County Water Plan Task Force met and developed four goal areas. These four goal areas are further broken down into interrelated objectives that deal with each of the priority concerns. Most importantly, each objective has a series of action steps identified which are designed to help achieve the goal area if implemented properly. A summary of the County's Water Plan Goals, Objectives and Action Steps are provided in this section. Collectively they form the County's Water Implementation Plan. **In addition, a summary of their annual estimated costs is provided** separated into Overall Costs and County Only Costs (the later includes funds spent by both

McLeod County and the McLeod County SWCD). To Be Determined (TBD) amounts and one-time cost estimates (versus ongoing annual cost estimates) ***are not included in the estimated overall costs, since the numbers presented in the summary represent potential estimated annual expenditures.*** The intent of this section of the Executive Summary is merely to provide a brief summary of the initiatives and their estimated costs, not a comprehensive description. A full description of the Goals, Objectives, and Action Steps is contained in Chapter Three of this Water Plan. Likewise, Chapter Four provides details on administering the Water Plan. Please keep in mind that not all of the identified Action Items will be accomplished over the duration of the Water Plan. **The Action Steps are estimates of potential implementation activities that can change due to work loads, available project funding, or a re-determination of priorities in the water plan. Furthermore, many of the Action Steps represent commitments on behalf of the various water plan stakeholders and can only be accomplished if funding is available.**

GOAL 1: PROTECT AND IMPROVE SURFACE WATER QUALITY

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

- Erodible Land. Annually target 500 acres of highly erodible land for enrollment in conservation easement programs, such as CRP and RIM.
- BMP Program. Provide educational, technical, and financial assistance, as available, to landowners for the implementation of water quality-related BMPs. Implement a minimum of five projects annually.
- Cost-Share. Seek financial aid in the form of State cost-share, Federal EQIP, and Clean Water Funds for the installation of BMPs. Establish a minimum of \$100,000 in cost-share funds annually.
- Site Inspections. Conduct site inspections and provide technical assistance to interested landowners. Target 25 inspections annually.
- SWCD Wind Erosion. Establish 1 mile of field windbreaks and five acres of shelterbelts annually.
- SWCD Water Erosion. Reduce sediment loading and erosion into surface waters by installing BMPs. Implement five projects annually.

Objective A Estimated Overall Costs = \$500,000; County Only Costs = \$160,000

Objective B: Proactively work to delist all of McLeod County's water bodies off the MPCA's 303d List of Impaired Waters.

- Water Quality Monitoring. Cooperatively work with partners to continue water quality monitoring efforts. Annually review the data and adjust BMP programs accordingly. Continue to weekly monitor the Crow River and High Island Creek for water clarity using a turbidity tube (except when frozen).
- TMDL Studies. Cooperatively work with partners to coordinate the preparation and implementation of TMDL studies and plans for Impaired Waters. Biannually review and target the impaired waters for BMP implementation (2014 & 2016).
- Watershed Approach. Partner in MPCA's watershed approach to identifying and addressing water quality problems. Annually review and target key subwatersheds for BMP implementation and Civic Engagement Activities with stakeholders.
- Stressor IDs. Assist with the U.S. Environmental Protection Agency's (EPA) efforts in the development of stressor identification in aquatic ecosystems. Once the stressors are identified, target BMPs accordingly.

Objective B Estimated Overall Costs = \$170,000; County Only Costs = \$17,000

Objective C: Reduce or minimize the negative impacts of animal manure/ lawn fertilizers.

- Feedlot Program. Continue to locally administer the County Feedlot Program to assist feedlot operators in obtaining and maintaining compliance with State regulations. Annually inspect 10% of the feedlots in the County.
- Noncompliant Feedlots. Provide educational, technical, and financial assistance, as available, to landowners/producers to upgrade noncompliant feedlots. Implement one feedlot upgrade annually.
- SWCD Feedlot Assistance. Assist the County with Feedlot site evaluations, planning, design, and overall general technical assistance. Complete MINNFARM evaluations for potential pollution problems and assist with fixing problems, when necessary. Target impaired waters and implement 5 projects annually.
- Nutrient Management Meeting. Sponsor an annual meeting to provide information on proper nutrient management.

- Manure and Nutrient Management. Provide educational and technical assistance, as available, to landowners/producers on proper manure and nutrient management. Target impaired waters.
- High Island Creek Watershed Initiative. Work with High Island Watershed to reduce Fecal coliform and E. coli levels through the implementation of manure management and feedlot BMPS.

Objective C Estimated Overall Costs = \$292,500; County Only Costs = \$137,500

Objective D: Work with landowners on properly implementing the County's Subsurface Sewage Treatment System Ordinance and other wastewater initiatives.

- SSTS Program. Continue to provide compliance and inspection services as part of the County's SSTS Program. Permit and inspect 100 new septic systems annually.
- Noncompliant SSTSs. Provide educational and financial assistance, as available, to homeowners to upgrade noncompliant SSTSs. Target impaired waters and upgrade 10 systems annually.
- Improper SSTS Discharge. Investigate and initiate corrective measures for SSTS improperly discharging into drainage ditches, lakes, and rivers when reported.
- Industrial Development. Encourage industrial development to be located where appropriate public services are located, such as municipal sewer service. Biannually review development ordinances to ensure proper language (2013, 2015, 2017).
- Shoreland Development. Provide technical and financial assistance, when available, to assist lake associations and shoreland residents with the installation of cluster sewer systems.
- BCWD SSTS Incentive. Provide \$500 incentive to replace 5 failing septic systems, according to BCWD criteria.
- HICWD SSTS Incentive. Provide \$500 incentive to replace 5 failing septic systems, according to HICWD criteria.
- Wastewater Treatment. Cooperatively work with partners to address wastewater treatment issues. Assist with securing funds with one project annually or as needed.

- City of Biscay. Complete work on Biscay in upgrading their septic system with the construction of the cluster system in 2013 and finish construction of sewer lines and tank installation in 2014.

Objective D Estimated Overall Costs = \$466,000; County Only Costs = \$67,500

Objective E: Enhance shoreland and lake management efforts.

- Lake Management. Conduct and/or provide technical and financial assistance, as available, to partners for the implementation of lake management efforts, when appropriate. Target impaired waters and implement two projects annually.
- Aquatic Invasive Species Management. Conduct and/or provide technical and financial assistance, as available, to lake associations and other groups/organizations for the implementation of invasive aquatic species prevention and/or control efforts. Host one meeting annually.
- Lake Level Conflicts. Work with the DNR and other stakeholders to resolve lake level conflicts.
- Watercourse Management. Proactively cleanout debris from water resources. Implement one project annually.
- Shoreland Ordinance. Continue to implement the County's Shoreland zoning standards. Biannually review (2014, 2016).
- City of Lester Prairie. Support the City of Lester Prairie's efforts to obtain Clean Water Funding for shoreland restorations along the Crow River.

Objective E Estimated Overall Costs = \$115,000; County Only Costs = \$20,000

Objective F: Administer initiatives that will enhance sustainable land management activities.

- Hazardous Waste Program. Continue the County's Hazardous Waste Program. Biannually review the program.
- Habitat Corridors. Support efforts to conserve, enhance and restore fish and wildlife habitat, when feasible. Implement one or more projects annually.
- GIS Datasets. Annually invest in the acquisition, development, and maintenance of GIS datasets, including the digital soil survey and parcel map. Utilize these datasets

to make informed decisions regarding land use planning and water resource management.

- Land Use Management. Continue to implement the County's adopted land use controls, including the Comprehensive Plan, floodplain, SSTS, shoreland, and solid waste ordinances. Biannually review language.
- Land Use Decisions and Ordinance Amendments. Work with the Planning Commission and Board of Commissioners to ensure that land use decisions and ordinances are consistent with the Water Plan. Identify inconsistencies and update documents accordingly.

Objective F Estimated Overall Costs = \$1,060,000; County Only Costs = \$670,000

GOAL 2: ENHANCE SURFACE WATER MANAGEMENT

Objective G: Ensure long-term agricultural production by maintaining and improving the public drainage system.

- Public Drainage Systems. Ensure that public drainage systems are operated and maintained in accordance with the State Drainage Law (M.S. Chapter 103E) and other applicable regulations, such as WCA. Continue to inspect and perform brush control on ditches once every three years.
- Comprehensive Drainage Management Plan. Pursue the development of a comprehensive drainage management plan for public drainage systems.
- Redetermination of Benefits. Redetermine the benefits on drainage systems as requested.
- Agricultural Studies. Support studies related to agricultural impacts on water quantity and quality. Establish two local test sites.
- Drainage Systems. Work with the County Drainage Authority on abandoning or relocating public drainage systems in conjunction with wetland restorations. Target impaired waters.
- Drainage BMPs. Cooperatively work with the Drainage Authority to incorporate water quantity/quality-related BMPs into the operation of public drainage systems. For example, work to establish/enhance five side inlets annually.

- **Alternative Drainage Practices.** Provide educational, technical, and financial assistance, as available, to landowners for the demonstration of alternative drainage practices, such as blind intakes, that replace conventional open tile intakes. Establish two demonstration sites.
- **Pattern Tiling.** Better understand the effects of pattern tiling on surface water management. Work to establish a research/demonstration site.
- **BCWD Filtering Inlet Incentive.** Provide financial assistance, as available, for establishing filtering inlets. Implement five sites.

Objective G Estimated Overall Costs = \$523,000; County Only Costs = \$118,500

Objective H: Manage surface waters to minimize Stormwater pollution and runoff.

- **Stormwater Management Plans.** Participate in the development and implementation of Comprehensive Stormwater Management Plans, identifying BMPs, potential retrofit opportunities, providing recommendations for coordination among LGUs, and identifying potential funding options.
- **NPDES Stormwater Permit Requirements.** Provide educational assistance to landowners and contractors on NPDES stormwater permit requirements for construction activity. Update educational materials as they become available.
- **SWCD Stormwater Initiatives.** Provide technical and financial assistance to citizens on stormwater BMPs (i.e., rain gardens, bio-retention, etc.), and assist with proper implementation. Implement five projects annually.
- **Stormwater Storage.** Work with municipalities to utilize storage basins and holding ponds for runoff retention and water quality treatment.
- **Marsh Water Project.** Work with the City of Glencoe and the Buffalo Creek Watershed District to implement the Marsh Water Project to mitigate stormwater flooding.
- **City of Lester Prairie.** Support the City of Lester Prairie's efforts to obtain Clean Water Funding for stormwater treatment and/or surface water management projects.

Objective H Estimated Overall Costs = \$480,000; County Only Costs = \$43,500

Objective I: Preserve and Restore Wetlands and other Water Retention Opportunities.

- WCA Administration. Continue to locally administer the Minnesota Wetland Conservation Act. The entire County shall be identified as a high priority area for wetland restorations.
- Wetland Restorations. Assess the potential for wetland restoration. Pursue installation with voluntary landowners, target impaired waters, and implement one project annually.
- Preservation and Restoration Programs. Provide educational and technical assistance to landowners regarding State and Federal programs to preserve and restore wetlands, including drained lakebeds. Target landowners near impaired waters.
- Wetland Banking. Provide information to landowners who inquire about the State wetland-banking program. Annually review the State's requirements.
- SWCD Wetland Initiative. Assist the USDA with the wetland provisions within the Farm Bill, including Swampbuster and 1026 drainage requests.

Objective I Estimated Overall Costs = \$177,000; County Only Costs = \$51,000

GOAL 3: PROTECT GROUNDWATER SUPPLIES

Objective J: Protect Groundwater from Contamination by implementing Best Management Practices.

- BMP Program. Provide educational, technical and financial assistance, as available, to landowners for the implementation of groundwater protection BMPs, including the proper decommissioning of wells and storage tanks and correct application of pesticides and other chemicals. Implement two projects annually.
- Wellhead Protection. Participate in the preparation and implementation of wellhead protection plans for public water suppliers.
- Pesticide Container Collection. Continue an empty pesticide container collection day, contingent upon the availability of funding.
- Solid Waste Management. Provide educational assistance to landowners to discourage the burning and burying of solid waste. Review educational materials annually and target 5,000 households.

- Abandoned Wells. Continue to provide information to the public on how to identify, locate and seal abandoned wells. Provide financial assistance and create an abandoned well inventory, as funds are available. Target sealing five abandoned wells annually.

Objective J Estimated Overall Costs = \$160,000; County Only Costs = \$23,000

Objective K: Ensure Adequate Groundwater Supplies for Multiple Uses.

- Precipitation Monitoring. Continue monitoring and increase the number of volunteer rain gauge readers that report to the State Climatology Office to one per township.
- Ground Water Level Monitoring. Cooperatively work with partners on groundwater permitting and monitoring efforts. Annually review data and adjust BMP programs accordingly.
- Hydrogeologic Atlas. Learn how to best use hydrogeologic information for the County to evaluate the impact of land use activities on ground water supplies. Biannually host a workshop (2014, 2016).
- Water Conservation Program. Apply for funds to assist with creating a Water Conservation Program, with low-flow conservation kits and establishing a county-wide Drought Contingency Plan (by 2015).

Objective K Estimated Overall Costs = \$18,500; County Only Costs = \$6,000

GOAL 4: EFFECTIVE PLAN ADMINISTRATION & COORDINATION

Objective L: Expand our knowledge and partnerships on identifying and addressing key water planning issues.

- Water Quality Monitoring/Studies. Cooperatively work with partners to continue and expand surface and ground water quality monitoring and studies. Annually review the data and adjust BMP programs accordingly.
- Surface Water Flow Monitoring. Cooperatively work with partners to continue and expand surface water flow monitoring efforts. Annually review the data and adjust BMP programs accordingly.

- CROW BMP Implementation and Education Initiatives. Cooperatively work with the Crow River Organization of Waters (CROW) to implement BMP implementation and education initiatives to reduce Fecal coliform, E.coli, turbidity, dissolved oxygen and chloride in North and South Fork Crow River Watersheds. Projects include: Lakeshore/Streambank Stabilization, Wetland Restorations, Rain Gardens, Lakeshore Naturalizations, Filterstrip/Grass/Riparian Buffers, Windbreaks, Sediment Basins, Grass Waterways, CRP/RIM Incentive Payments, Social Media, Newsletters and workshops – Implement six projects annually, create quarterly electronic newsletters, update website/facebook page weekly and provide annual workshop.

Objective L Estimated Overall Costs = \$225,000; County Only Costs = \$7,000

Objective M: Provide and participate in Outreach and Educational efforts on key water planning issues.

- Partner Meetings. Hold and/or attend meetings with partners to discuss water resource management issues and potential partnership opportunities. Annually invite key stakeholders to a water plan meeting.
- Joint Powers Board Membership. Continue membership in water plan stakeholder's Joint Powers Boards.
- Runoff Education. Implement educational efforts to control or reduce the effects of accelerated runoff from urban, industrial and agricultural areas. Include in newsletters twice a year.
- SSTS Education. Provide information to the public on proper SSTS design, installation, operation, and maintenance. Include information in annual workshops, news articles, and stakeholder mailings.
- SWCD Outreach Initiatives. Assist the County with providing the educational components of the Water Plan by providing one-on-one education, developing E-newsletters, and coordinating the 4th Grade Nature Field Day event.
- Water Conservation. Locate and provide water conservation-related educational materials to industry, homeowners and schools. Target one topic and media source annually.
- High Island Creek Watershed Education. Create quarterly newsletters, assist with manure management workshops and host manure management field days.

Objective M Estimated Overall Costs = \$124,000; County Only Costs = \$78,250

Objective N: Properly Administer the Water Plan to help ensure it achieves success.

- Local Water Management Coordinator. Maintain the County Local Water Management Coordinator position.
- Additional Funding Sources. Pursue additional funding sources, such as grants, in order to fund the implementation of initiatives. Seek partnerships and cooperative agreements to finance initiatives, when appropriate. Annually review projects and funding needs.
- Funding Opportunities. Provide information to landowners on available funding sources for water resource management activities and projects. Include on website, news articles, and newsletters.
- Water Planning Taskforce Meetings. Hold semi-annual Water Planning Taskforce meetings to discuss issues, review funding requests, and implement the Water Plan.
- SWCD Administration. Continue to be fiscally responsible while providing quality service to McLeod County's citizens; work with the County to ensure the County's General Levy adequately supports conservation needs; seek grants, partnerships, and provide adequate staffing. Quarterly review efforts and make adjustments accordingly.
- Water Plan Update. Update the County's water plan action steps prior to the County's water plan expiring in 2018.

Objective N Estimated Overall Costs = \$68,500; County Only Costs = \$60,000

Summary of Estimated Annual Overall and County Only Costs

Objective A Estimated Overall Costs = \$500,000; County Only Costs = \$160,000

Objective B Estimated Overall Costs = \$170,000; County Only Costs = \$17,000

Objective C Estimated Overall Costs = \$292,500; County Only Costs = \$137,500

Objective D Estimated Overall Costs = \$466,000; County Only Costs = \$67,500

Objective E Estimated Overall Costs = \$115,000; County Only Costs = \$20,000

Objective F Estimated Overall Costs = \$1,060,000; County Only Costs = \$670,000

Objective G Estimated Overall Costs = \$523,000; County Only Costs = \$118,500

Objective H Estimated Overall Costs = \$480,000; County Only Costs = \$43,500

Objective I Estimated Overall Costs = \$177,000; County Only Costs = \$51,000

Objective J Estimated Overall Costs = \$160,000; County Only Costs = \$23,000

Objective K Estimated Overall Costs = \$18,500; County Only Costs = \$6,000
Objective L Estimated Overall Costs = \$225,000; County Only Costs = \$7,000
Objective M Estimated Overall Costs = \$124,000; County Only Costs = \$78,250
Objective N Estimated Overall Costs = \$68,500; County Only Costs = \$60,000

*Total Estimated Overall Costs = \$4,379,500**

*Estimated County Only Costs = \$1,459,250**

***Note:** Please refer to Chapters Three and Four of this Water Plan for a more detailed description of the estimated costs overall and to McLeod County. Although these costs may seem exaggerated at first, there are numerous stakeholders involved with their corresponding activities and budgets. In addition, many of the Action Steps identified overlap with multiple other Action Steps with their scope and functionality. Furthermore, this Water Plan is intended to set high water resource planning goals, with the realization that it may not be feasible to accomplish everything that has been identified.

D. Relationship to other Plans

The McLeod County Water Plan Task Force represents a diverse group of people representing a number of key water plan stakeholders (the members are listed on the inside cover page). This helped to ensure the Water Plan, and its corresponding Goals, Objectives and Action Steps, was developed to be consistent with existing plans and official land use controls. In addition, many of the identified Action Items were simply revised from previous versions of the McLeod County Water Plan. **As a result, this updated McLeod County Water Plan is believed to be consistent with the plans and official controls of the other pertinent local, State and regional plans and controls. In conclusion, there are no recommended amendments to other plans and official controls to achieve consistency with this Water Plan.**

Chapter One:

McLeod County Priority Concerns Scoping Document

~ This Chapter and Appendices A & B made up the County's Priority Concerns Scoping Document ~

Section One:

Introduction to the Water Plan & McLeod County

A. Water Plan Background

In 1989, the McLeod County Board of Commissioners adopted a resolution to develop a Comprehensive Local Water Plan, according to Minnesota Statutes 110B. The plan was to serve two purposes. The first was to identify existing and potential problems and opportunities for the protection, management and development of water and related land resources. The second purpose was to develop goals, objectives and a work plan to implement programs and strategies to promote the sound management of water and land resources for effective environmental protection. The plan focused on surface water, groundwater, related land resources and land use. The original Comprehensive Local Water Plan was approved by the Board of Soil and Water Resources (BWSR) and officially adopted by the McLeod County Board of Commissioners in 1991. Since then, McLeod County has revised its Water Plan in 1996, 2002, and 2007.

According to Minnesota Statute 103B, each county is encouraged to develop and implement a local water management plan with the authority to:

- (1) Prepare and adopt a local water management plan that meets the requirements of this section and section 103B.315;
- (2) Review water and related land resources plans and official controls submitted by local units of government to assure consistency with the local water management plan; and
- (3) Exercise any and all powers necessary to assure implementation of local water management plans.

Pursuant to the requirements of the law, this McLeod County Water Plan:

- Covers the entire area of McLeod County;

- Addresses water problems in the context of watershed units and groundwater systems;
- Is based upon principles of sound hydrologic management of water, effective environmental protection and efficient management;
- Is consistent with comprehensive water plans prepared by counties and watershed management organizations wholly or partially within a single watershed unit or groundwater system; and
- Will serve as a 10-year water plan (2013-2023), with a 5-year implementation plan (2013-2018). In 2018, the implementation plan will be updated.

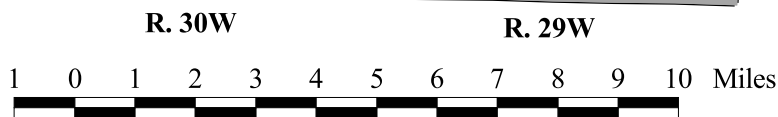
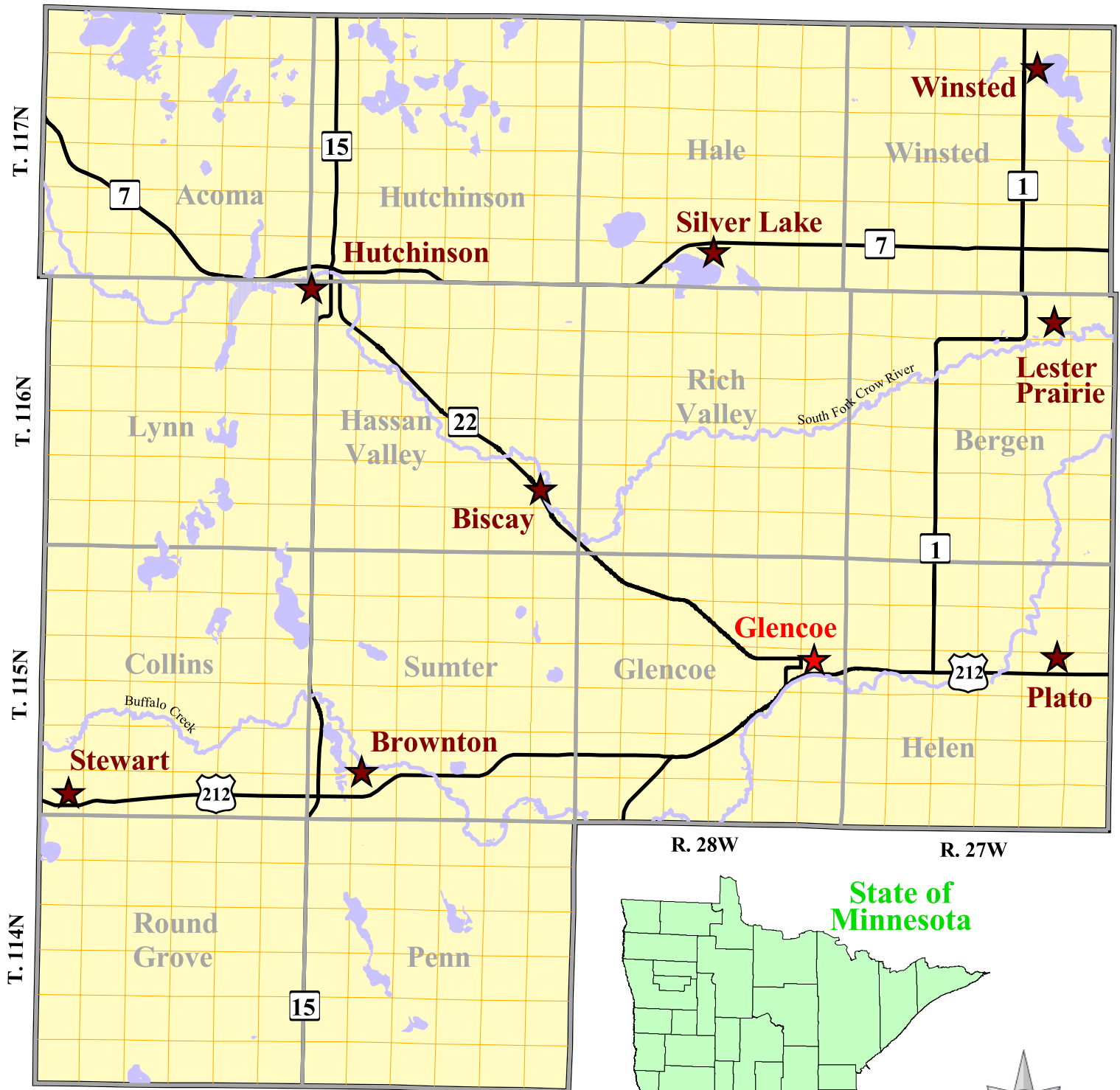
B. McLeod County Profile

Founded in 1856, McLeod County is located in central Minnesota, approximately 40 miles west of the Minneapolis-St. Paul Metropolitan Area. As Map 1A shows, there are nine cities and fourteen townships in McLeod County. The City of Glencoe is the County Seat (located in the south central portion of the County). McLeod County is characterized by numerous lakes, rolling hills, and vast agricultural land. The County shares borders with Meeker and Wright counties to the north, Carver County to the east, Sibley County to the south and Renville County to the west. Table 1 shows McLeod County's Census population since 1970, which is currently around 36,651 residents (2010 Census).

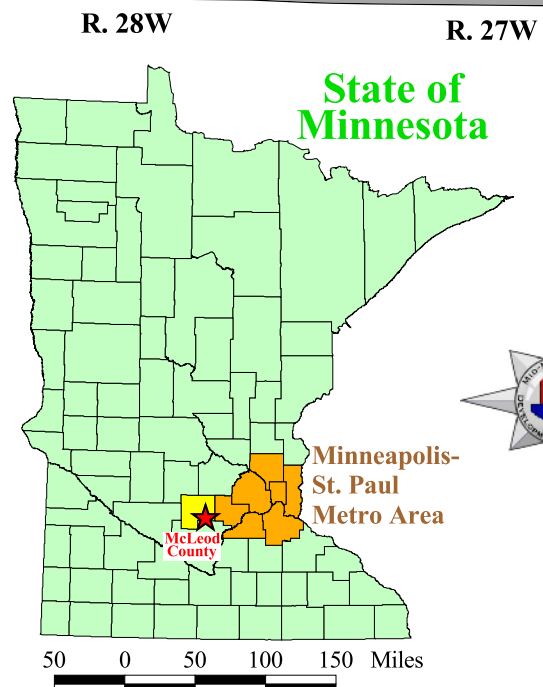
**Table 1:
McLeod County's Population since 1970**

Area	U.S. Census Year					Change	
	1970	1980	1990	2000	2010	#	%
Biscay	105	114	113	114	111	6	6%
Brownton	688	697	781	807	762	74	11%
Glencoe	4,217	4,396	4,648	5,453	5,631	1,414	34%
Lester Prairie	1,162	1,229	1,180	1,377	1,730	568	49%
Hutchinson	8,031	9,244	11,523	13,080	14,178	6,147	77%
Plato	303	390	355	336	320	17	6%
Silver Lake	694	698	764	761	837	143	21%
Stewart	666	616	566	564	571	-95	-14%
Winsted	1,266	1,522	1,581	2,094	2,355	1,089	86%
McLeod County	27,662	29,657	32,030	34,898	36,651	8,989	32%
State of Minnesota	3,804,971	4,075,970	4,375,099	4,919,479	5,303,925	1,498,954	39%

**Map 1A:
McLeod County's Location, Cities and Townships**



- | | | | |
|--|---------------------|--|---------------|
| | County Seat | | U.S. Highway |
| | Municipality | | State Highway |
| | Township | | Lake |
| | Section Line | | River |



Section Two: Priority Concerns Scoping Document Planning Process

C. Resolution to Update the McLeod County Water Plan

The first step in the Water Planning Process was for the McLeod County Board to pass a resolution indicating the County was officially updating its Water Plan. This action took place on November 29, 2011, at the regularly scheduled County Board meeting. A copy of the resolution appears in Appendix A.

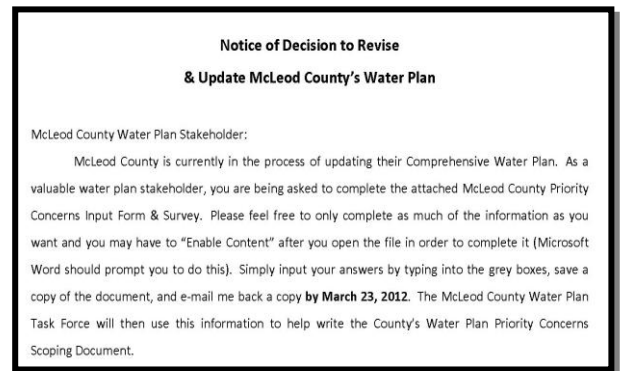
D. Notice of Plan Update

An official “Notice of Plan Update” for the McLeod County Water Plan was sent on February 24, 2012, to the people prescribed by Minnesota Statutes 103B (www.revisor.mn.gov/statutes) and according to the “Routing Information” contained on BWSR’s website under the Resource Management and Planning tab:

www.bwsr.state.mn.us/planning/routing.html

A copy of the Notice of Plan Update can be found in Appendix A.

**Figure 1:
Notice of Plan Update
~ Found in Appendix A ~**



E. Water Plan Open House Comments

McLeod County hosted an open house meeting to kick off the Water Plan. The meeting took place on February 28, 2012, from 4:00 to 6:00 p.m. in the Board Room of the McLeod County Courthouse. A press release was sent to all of the local media sources. In addition, A copy of the press release, meeting summary and the list of attendees can be found in Appendix A. The following water plan issues were identified and discussed:

- | | | |
|----------------------------------|---------------------------|---------------------------------|
| • Agricultural runoff | • Impaired waters (TMDLs) | • Wellhead protection |
| • Drainage ditches | • Land use management | • Wetland protection |
| • Emphasize testing & monitoring | • Public education | • Using reliable information |
| • Erosion control | • Septic systems | • Cooperating with stakeholders |
| • Feedlots | • Shoreland development | • Pattern tiling |
| • Ground/drinking water | • Stormwater management | |

F. Water Plan Survey Results

McLeod County created an online Water Plan Survey through Survey Monkey (www.surveymonkey.com). The link to the online survey was e-mailed to McLeod County's cities, townships, and key water plan stakeholders. A paper copy of the survey was also made available through McLeod County Environmental Services and was handed out at the Water Plan Open House.

Thirty-two people completed McLeod County's Water Plan Survey (26 online & 6 written copies). The survey results are presented below, along with any written comments that were submitted by the participants. Ground/drinking water issues was the top priority concern identified in both questions 1 and 2. There also seemed to be a lot of support of continuing to educate the public on important water planning issues. Appendix A contains a copy of the actual survey used.

Figure 2:
Water Plan Online Survey
~ Found in Appendix A ~

McLeod County Local Water Plan Citizen's Survey

1. Overall, which of the following needs to be protected or improved the most in McLeod County? Please select one...

- ☐ Ground/Drinking Water
- ☐ Stormwater/Drainage Systems
- ☐ Lakes/Streams/Rivers
- ☐ Natural Habitat (i.e., prairie, wetlands, etc.)
- ☐ Other

Other (please specify):

2. What are the top THREE issues/threats to water resources in McLeod County? Please check up to three issues...

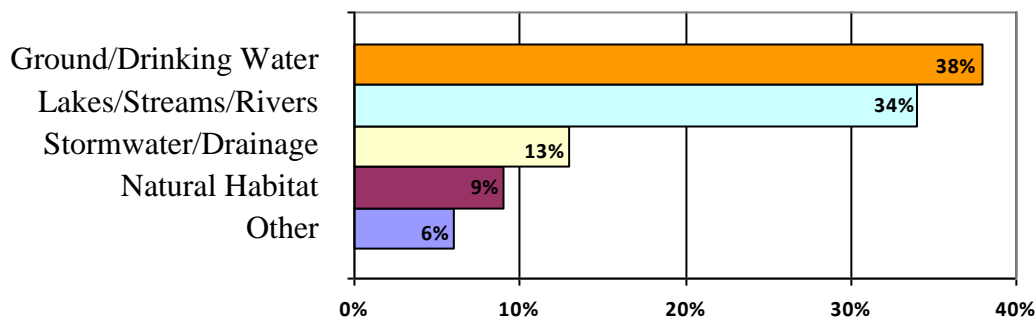
- ☐ Failing Septic Systems
- ☐ Natural Habitat Destruction
- ☐ Soil Erosion
- ☐ Overuse of Groundwater Resources
- ☐ Ground/Drinking Water Contamination
- ☐ Declining Water Clarity/Quality
- ☐ Contaminated Runoff
- ☐ Other (please specify)
- ☐ Lack of Environmental Education
- ☐ Stormwater/Drainage Issues
- ☐ Over Application of Lawn/Garden Chemicals
- ☐ Lack of Regulations/Enforcement
- ☐ Over Application of Agricultural Chemicals
- ☐ Aquatic Invasive Species

3. Please explain what can be done to assist with the issues/threats you identified.

4. What other water resource concerns do you have?

5. Would you like a copy of the DRAFT McLeod County Water Plan to review?

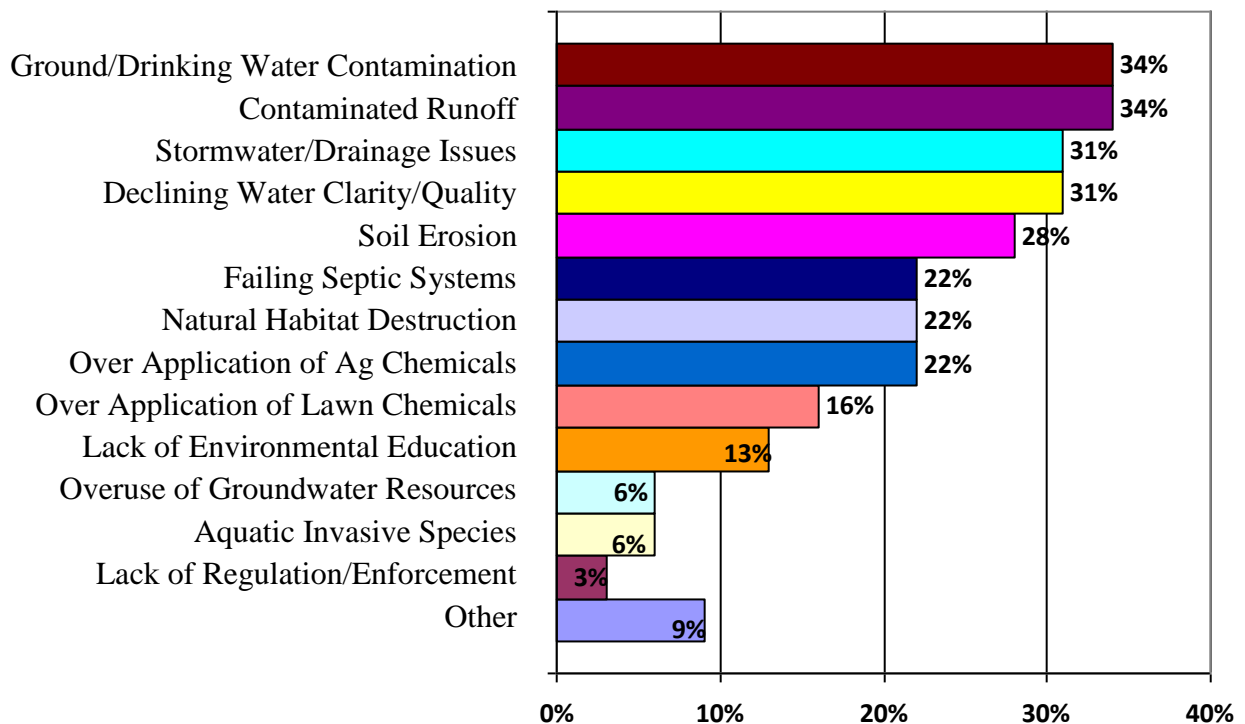
1. Overall, which of the following needs to be protected or improved the most in McLeod County? Please select one...



Other Comments:

- ~ Glencoe seems to be really bad. My mother's basement gets flooded regularly when it rains and this water comes up through her floor drain.
- ~ A balance of reasonable use of property while also providing for better quality of water in all sources.
- ~ All are important.
- ~ Lack of education of public from the farmer's perspective.

2. What are the top *THREE* issues/threats to water resources in McLeod County? Please select up to three issues...



Other Comments:

- ~ Tiling. The price of corn is driving the need to tile every square inch of land. The superflush causes exponential erosion.
- ~ Overuse of insecticides (especially for mosquitoes) that kill off their natural predators too.

3. Please explain what can be done to assist with the issues/threats you identified.

- ~ Demanding from cities to explore better quality water without adding so many chemicals to hide things.
- ~ Having information available to let the public know of the issues and what they can do to prevent issues from getting worse in the future.
- ~ How do we educate the public? Teaching encourages behavior along with financial incentives
- ~ Make more grant money available for updating septic systems
- ~ Additional education.

- ~ Identify sources of contamination and work on those.
- ~ Keep informing the public on how, where, when, cost, to properly dispose of containers and what solvents not to use on a daily basis that end up in the treatment plants, lakes, and rivers.
- ~ Education to show how much damage we have done to God's Country in 100 years. Then plans for correction.
- ~ Tighten drainage laws
- ~ Public Education I am not concerned about agriculture or industries use of chemicals as they are already very regulated.
- ~ Limit direct flow of open & closed drainage systems to protected surface waters (lakes, rivers, creeks, streams).
- ~ The public needs a better understanding of overall issues.

4. What other water resource concerns do you have?

- ~ Farmers and spreading chemically induced manure from chemically induced cattle. What ever happened to natural foods!
- ~ So many people need to purchase drinking water due to wells not being safe.
- ~ I would like to see the South Fork of the Crow River clean up so it can be used recreationally.
- ~ To make the public more aware of water quality issues, water testing (specifically cost), is a contributing factor of early detection. Keeping costs down are key, then people will be more likely to do it.
- ~ Creation of chemicals to treat the water rather than identifying and correcting the source of the contamination. IE, I would rather drink naturally clean water than chemically cured once infested water.
- ~ Clean lakes and rivers
- ~ I observed a lot of farm field tiling done in the last year. Concerned about the impacts this may cause on local wetlands and streams, etc.
- ~ Too many government agencies involved in water issues.
- ~ More needs to be done to increase buffers to filter sediment from entering surface waters. Buffer strips are not being enforced for ag producers.

G. State & Local Stakeholder Comments

At the beginning of McLeod County's water planning process, the County's key water planning stakeholders were asked to submit comments on priority water planning issues and suggested implementation activities. This was accomplished by completing either a McLeod County Priority Concerns Input Form, or by simply submitting a letter. The following stakeholders submitted comments:

- The Minnesota Department of Agriculture
- The Minnesota Pollution Control Agency
- The Minnesota Board of Water and Soil Resources
- The Minnesota Department of Natural Resources
- The Minnesota Department of Health
- The Crow River Organization of Waters
- The City of Hutchinson
- The City of Winsted

Table 2 summarizes the priority concerns identified by each of the stakeholders. The "Other" column in Table 2 combines the responses from the Crow River Organization of Waters, the City of Hutchinson, and the City of Winsted. Based upon the stakeholders comments received, McLeod County's top three priority issues are:

- 1) Wetlands/Water Retention
- 2) Drainage/Stormwater Management
- 3) Surface Water Quality

Minnesota Department of Agriculture (MDA)

The MDA submitted a Priority Concerns Input Form for McLeod County. A copy of the form, dated March 23, 2012, is contained in Appendix B. The MDA's identified the following five priority water planning concerns:

1. Agricultural Drainage, Wetlands and Water Retention
2. Groundwater and Surface Water Protection: Agricultural Chemicals and Nutrients/Water Use/Land Management in Wellhead Protection Areas
3. Manure Management and Livestock Issues
4. Agricultural Land Management
5. Targeting of BMPs, Aligning Local Plans and Engaging Agriculture

The MDA also created a webpage which communicates and profiles their top five priority water planning concerns. The webpage provides links to each of the five priority concern areas, including information on why the issue is important, what actions need to be taken, and links to more information on the subject. For more information, please visit the following MDA link:

www.mda.state.mn.us/protecting/waterprotection/waterplanning.aspx

Minnesota Pollution Control Agency (MPCA)

The MPCA submitted a letter outlining their top five priority concerns for McLeod County. In addition, the MPCA submitted a map showing McLeod County's Water Table Sensitivity. The map shows the location of Public Water Supply Wells and categorizes all of McLeod County into Low, Medium, and High Aquifer Sensitivity. A copy of the map and letter, dated March 16, 2012, can be found in Appendix B. The MPCA submitted the following five priority concerns for McLeod County:

1. Impaired Waters/Total Maximum Daily Loads (TMDL)
2. Wetland Restoration and Protection
3. Subsurface Sewage Treatment Systems (SSTS)
4. Agricultural Drainage Management
5. Increase Coordination with other counties in the Lower MN Watershed

Minnesota Board of Water and Soil Resources (BWSR)

The BWSR submitted a McLeod County Priority Concerns Input Form on March 23, 2012 (a copy of the correspondence can be found in Appendix B). BWSR identified the following five top priority concerns:

1. Erosion and Sediment Control; Nutrient Management on Agricultural Land
2. Feedlot Program Management and Non-Conforming Subsurface Septic Treatment Systems
3. Conservation Buffers
4. Drainage System Maintenance and Repair; Drainage System Management Plan
5. Wetland Protection and Enhancement

Table 2: McLeod County Water Plan
Summary of Stakeholder's Priority Concerns
(Please refer the text)

Priority Concern/Issue	Stakeholder					
	<i>*Stakeholder's Top Priority Concern</i>					
	BWSR	Dept. of Ag	MPCA	DNR	CROW	Other**
1. Wetlands/Water Retention	Yes	Yes*	Yes		Yes*	Yes
2. Drainage/Stormwater	Yes	Yes*	Yes	Yes*		Yes
3. Surface Water Quality		Yes	Yes	Yes	Yes*	Yes
Soil Erosion/Sediment Control	Yes*	Yes				Yes
Feedlots/Nutrient Management	Yes	Yes				
Septic Systems (SSTS)	Yes		Yes			
Groundwater quality/quantity		Yes				Yes
Best Management Practices	Yes	Yes				
Impaired Waters		Yes	Yes*	Yes	Yes	
Watershed Approach			Yes			
Natural Habitat				Yes		
Increasing Public Awareness					Yes	

** = Stakeholder's Top Priority Concern*

*Other** = Comments received from Mn Dept. of Health and the cities of Hutchinson and Winsted*

1-3 = County's overall top three priority concerns based upon all stakeholder's feedback

Minnesota Department of Natural Resources (DNR)

The DNR submitted a completed Priority Concerns Input Form & Survey for McLeod County. The information submitted identifies three priority concerns and includes a variety of suggested implementation ideas. The DNR three priority water planning concerns are as follows:

1. Stormwater/Tile Drainage
2. Declining Water Quality/Clarity
3. Natural Habitat Destruction

Crow River Organization of Waters (CROW)

The CROW submitted a McLeod County Priority Concerns Input Form (see Appendix B) and identified the following three water planning issues:

1. Surface Water Quality & Quantity
2. Lack of knowledge/connection between citizens and water related issues
3. Bacteria

Minnesota Department of Health (MDH)

The MDH submitted a completed Priority Concerns Input Form & Survey for McLeod County. A copy of the correspondence can be found in Appendix B. The following two MDH priority concerns were identified:

1. Protection of groundwater as a drinking water source
2. Promote sealing of unused wells

City of Hutchinson

The City of Hutchinson submitted a McLeod County Priority Concerns Input Form (see Appendix B). The City identified the following three priority issues:

1. Water Quality and Volume ~ are not properly managed prior to discharging into public waters
2. Loss of Wetlands
3. Protecting Groundwater

City of Winsted

The City of Winsted submitted a McLeod County Priority Concerns Input Form (see Appendix B) and identified the following priority issue:

1. Contaminated Runoff

Section Three:
McLeod County
Priority Water Planning Issues

H. Water Plan Task Force

McLeod County maintains a Water Plan Task Force which meets regularly on water plan initiatives (the members are listed on the inside cover of this document). In addition, the Task Force is used throughout the water planning process to help identify priority issues and to develop the water plan's Goals, Objectives, and Action Steps.

I. Priority Water Planning Issues

Based upon the McLeod County Water Plan Survey, comments received during the water plan public informational meeting, and the comments received by the various water plan stakeholders, the Water Plan Task Force identified the following McLeod County priority water planning issues (**note: these issues are not ranked**):

1. Surface Water Quantity ~ Management
 - a. Agricultural Drainage
 - b. Stormwater Management
 - c. Wetland Restorations
2. Surface Water Quality ~ Reducing Priority Pollutants
 - a. Erosion & Sediment Control
 - b. TMDL Implementation
 - c. Feedlot/Livestock Management
 - d. Subsurface Sewage Treatment Systems
 - e. Aquatic Invasive Species
3. Groundwater Quality & Quantity
 - a. Wellhead Protection Areas
 - b. Drinking Water Quality
4. Plan Administration
 - a. Watershed Focus
 - b. Raising Public Awareness

Section Four: McLeod County Ongoing Water Plan Activities

McLeod County has numerous ongoing programs and land use controls that are directly linked to the County's Water Plan. These ongoing activities include educational efforts on key water planning issues, stream monitoring, well testing, and lake aeration. In addition, County staff regularly attends water management meetings, educational conferences, enforces local land use controls. The County also annually provides cost-share to fund various watershed groups (i.e., Crow River Joint Powers and MN River Joint Powers Boards) and similar organizations. McLeod County has also contributed \$82,436 to participate in the development of the County's Geologic Atlas. All of these activities directly are related to implementing the Local Water Management Program (i.e., Water Plan).

In addition to implementing the County's Water Plan, the County also accomplishes numerous water plan initiatives through implementing the following County programs. **Table 3 shows that McLeod County has spent nearly \$1 million in funds on all of these ongoing activities between the five-year period of 2007 and 2011.**

County Feedlot Program – McLeod County has a county feedlot program, administered through the Minnesota Pollution Control Agency (MPCA). This means the county works with producers on registration, permitting, inspections, education, and complaint follow-up.

Subsurface Sewage Treatment System (Program SSTS) – McLeod County enforces MN Rules Chapter 7080-7083 through the McLeod County SSTS Ordinance. This Ordinance helps ensure that septic systems are designed and maintained properly, and includes a compliance inspection when property is transferred (seller's responsibility).

Shoreland Management Program – McLeod County assists the Minnesota Department of Natural Resources (DNR) with administering the Shoreland Management Act. This Act regulates land use development within 1,000 feet of a lake and 300 feet of a river and its designated floodplain.

Wetland Conservation Act Program (WCA) – McLeod County assist the Minnesota Board of Water and Soil Resources (BWSR) with administering the Minnesota Wetland Conservation Act of 1991. The goals of the Act are to maintain a "no-net-loss of wetlands", minimize any impacts on wetlands, and to replace any lost wetland acres affected by development.

Table 3:
McLeod County's
Natural Resource Block Grant Expenditures
~ 2007 – 2011 ~

Year - Category	2007		2008		2009		2010		2011		5-Year Totals		
	State	Match	State	Match	State	Match	State	Match	State	Match	State	Match	Overall
Feedlot¹	\$39,174	\$31,660	\$42,063	\$43,291	\$39,387	\$36,256	\$34,965	\$27,460	\$31,791	\$29,574	\$187,380	\$168,240	\$355,621
SSTS²	\$9,885	\$12,000	\$10,000	\$10,526	\$10,000	\$10,433	\$9,931	\$20,748	\$9,931	\$12,189	\$49,747	\$65,896	\$115,643
LWM³	\$16,645	\$35,231	\$16,645	\$53,795	\$16,645	\$33,065	\$17,311	\$23,587	\$12,430	\$25,942	\$79,676	\$171,620	\$251,296
Shoreland⁴	\$3,404	\$4,500	\$3,404	\$5,199	\$3,404	\$4,655	\$3,404	\$4,171	\$2,938	\$4,073	\$16,554	\$22,598	\$39,152
WCA⁵	\$18,737	\$21,180	\$18,737	\$18,892	\$18,737	\$21,980	\$18,737	\$21,695	\$16,170	\$28,683	\$91,118	\$112,430	\$203,548
Sub-Total	\$87,845	\$104,571	\$90,849	\$131,703	\$88,173	\$106,389	\$84,348	\$97,661	\$73,260	\$100,461	\$424,475	\$504,785	\$965,260
Totals	\$192,416		\$222,552		\$194,562		\$182,009		\$173,721		\$965,260		

Feedlot¹ – Refers to the County's Feedlot Program

SSTS² – Refers to the County's Subsurface Sewage Treatment Systems Program

LWM³ – Refers to the County's Local Water Management Program

Shoreland⁴ – Refers to the County's Shoreland Program

WCA⁵ – Refers to the County's Wetland Conservation Act Program

Chapter Two: Assessment of Priority Concerns

This Chapter provides an assessment of the priority concerns identified throughout the Water Plan's priority concerns scoping process. These concerns were identified by a variety of stakeholders and were selected by the McLeod County Water Plan Task Force. Please refer to Chapter One of this Water Plan for more information.

The priority concerns scoping process identified numerous priority issues that can be categorized into four larger topic areas; Surface Water Quality; Surface Water Quantity; Groundwater Quality & Quantity; and Plan Administration. The Task Force acknowledges the priority issues could've been organized differently and they also realize that some priority issues pertain to more than one of the larger topic areas. This Chapter provides assessments for the first three categories. The fourth category, Plan Administration, is profiled in Chapter Four. As a result, this Chapter contains assessments on the following water resource topics:

- Surface Water Quality ~ Reducing Priority Pollutants
- Surface Water Quantity ~ Management
- Groundwater Quality & Quantity

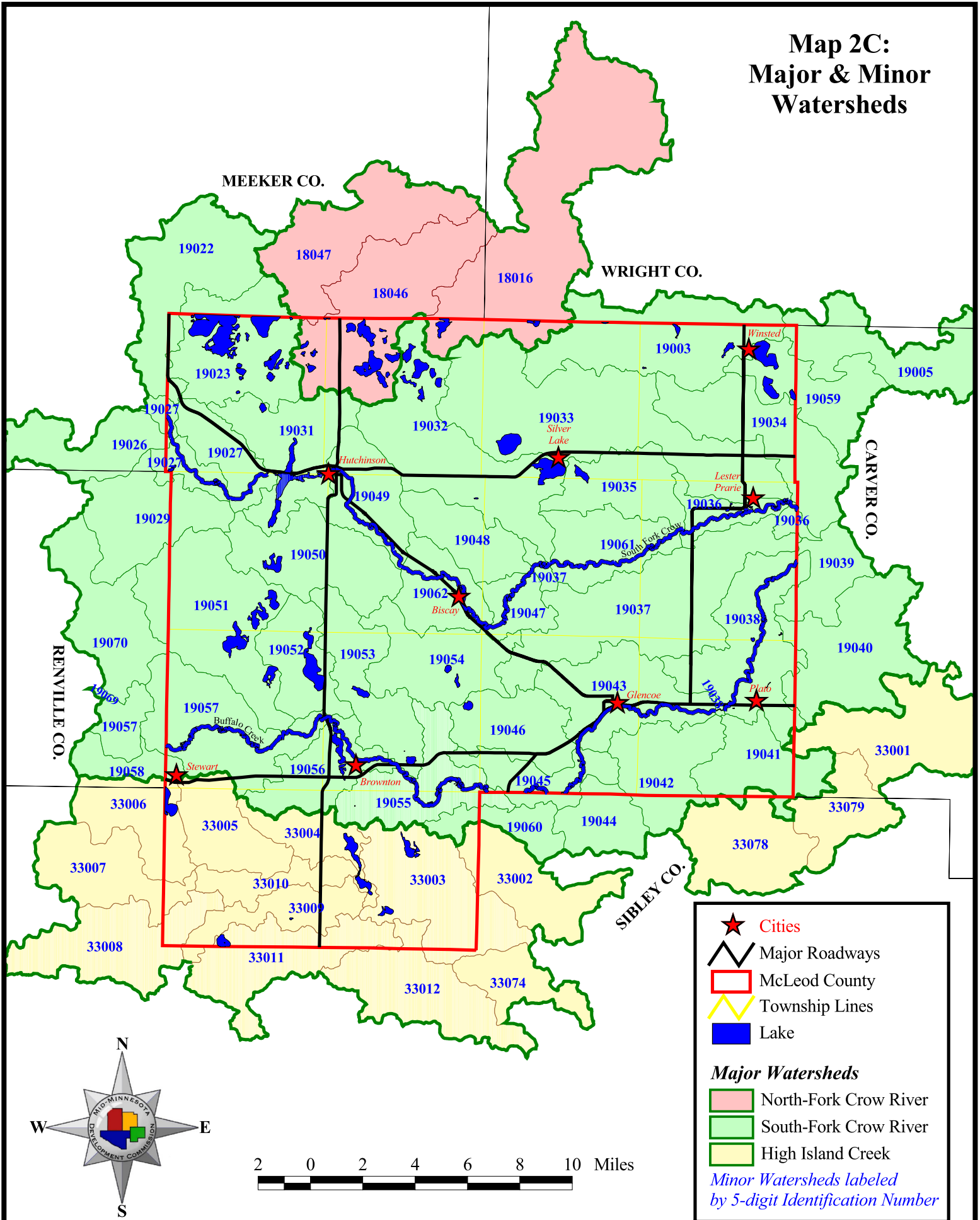
Section One: Surface Water Quality ~ Reducing Priority Pollutants Assessment

This section of the Water Plan provides an assessment of McLeod County's surface water quality. To begin with, a brief profile of McLeod County's surface water resources is provided. Following are subsections on Impaired Waters; Erosion and Sediment Control; Feedlots and Livestock Management; Subsurface Sewage Treatment Systems; and Aquatic Invasive Species.

A. McLeod County's Watersheds

McLeod County is located within three major watersheds. The first two are all part of the Upper Mississippi River Drainage Basin: the North Fork and South Fork Crow River watersheds. The third, the High Island Creek Watershed, is part of the Minnesota River Drainage Basin. Map 2C shows the location of the County's three major watersheds, as well as their corresponding minor watersheds. A brief description of each of McLeod County's major watersheds is provided below, including information on general surface water flow patterns.

Map 2C: Major & Minor Watersheds



The North Fork of the Crow River Watershed covers approximately 16.18 square miles of northern McLeod County. The major water bodies in this watershed are Hook, Todd, Echo and Byron Lakes. This major watershed is divided into 3 minor watersheds, with a general flow direction to the north. Cultivated agricultural land is the predominant land use. There are no cities located within the North Fork of the Crow River Watershed. The watershed is dominated by a rolling moraine topography, with steep slopes in some areas. The morainic system that is found in this portion of McLeod County was formed by the Grantsburg Lobe, during the Wisconsin glacial period, approximately 10,000 years ago.

The South Fork of the Crow River Watershed is the largest watershed in McLeod County, covering approximately 425.77 square miles. Major waterways flowing through the watershed include Buffalo Creek, Crow River (South Fork), Bear Creek, Sucker Creek and Crane Creek. Numerous lakes exist within this watershed, including Winsted, Silver, Belle, Cedar, Marion, Eagle and others. This major watershed is divided into 39 minor watersheds, with a general flow direction to the east. Cultivated agricultural land is the predominant land use. The cities of Biscay, Brownton, Hutchinson, Glencoe, Lester Prairie, Plato, Silver Lake and Winsted are located in the South Fork of the Crow River Watershed. The watershed is characterized by a gently undulating till plain, with scattered moraines. The moraines found in this region of the County are classified as ground moraines, left behind from Grantsburg glacial lobe. Areas near the south Fork of the Crow River are characteristically flood plains, with flat areas and some steep slopes.

The High Island Creek Watershed, which is part of the Lower Minnesota River Watershed, covers approximately 63.27 square miles of southwestern McLeod County. The most notable waterway in the watershed is High Island Creek. Baker's Lake and King's Lake are the watershed's major water bodies. The watershed is divided into 13 minor watersheds, with a general flow direction to the south. Cultivated agricultural land is the predominant land use. A portion of the City of Stewart is located within the High Island Creek Watershed. The Watershed is characterized by a gently twisting till plain formed during the advance of the Des Moines Lobe. The topography of the watershed is generally level, with some areas of gently rolling hills.

Reference: Minnesota Department of Natural Resources, Division of Waters

B. Impaired Waters Assessment

Why are Impaired Waters a Priority Concern? The Federal Clean Water Act requires states to adopt water quality standards to protect the nation's waters. These standards define how much of a pollutant can be in a surface and/or groundwater while still allowing it to meet its designated uses, such as for drinking water, fishing, swimming, irrigation or industrial purposes. When a water body cannot meet its designated uses due to pollution, it is considered an Impaired Water.

The Minnesota Pollution Control Agency (MPCA) produces a list of Minnesota's Impaired Waters every two years, referred to as the 303d List of Impaired Waters. The List identifies impaired water bodies and identifies the types of pollutants that exceed the State's minimum water quality standards, ranging from high Mercury levels, to Turbidity (suspended solids), to Fecal Coliform (bacteria).

What are the Risks? The various pollutants listed on the 303d List of Impaired Waters each pose a unique threat to aquatic life, human life, and/or wildlife. The major risk areas of concern can be summarized into the following categories:

- **Protection of Aquatic Life**
 - Main pollutants include trace metals, un-ionized ammonia, chloride, low dissolved oxygen, pH levels, turbidity, temperature, and various biological indicators.
- **Protection of Aquatic Consumption & Drinking Water**
 - Main pollutants include mercury, polychlorinated biphenyls, dioxins and chlorinated pesticides
- **Wildlife-Based Water Quality**
 - Main pollutants include DDT, Mercury and PCBs (human health standards are more stringent than for wildlife)
- **Protection of Aquatic Recreation**
 - Main pollutants include E. coli bacteria and lake eutrophication

Where are McLeod County's Impaired Waters Located? The MPCA submitted a Priority Concerns Input Form that was profiled in Chapter One. The key component of the Input Form was a listing of the Impaired Waters found in McLeod County. A copy of the correspondence and the list of Impaired Waters can be found in Appendix B. The submitted list identifies three impaired streams (with multiple segments each), six lakes, and one wetland. The MPCA publishes the list on their website (www.pca.mn.us).

Once a water body is identified on the list of Impaired Waters, a TMDL Study is conducted. TMDL stands for Total Maximum Daily Load, which is the maximum amount of any pollutant, contaminant, or impairment that can enter a body of water before the quality of the water is deemed unfit for its designated use. Therefore, a TMDL is a target or threshold which defines the upper limit for each pollutant in each water body. After the study is approved through a public review process, a TMDL Plan is formed to reduce the impairments to acceptable levels. Most of the implementation items identified in a TMDL Plan channel existing plans and programs to focus on the impaired water body. For example, once a stream segment is identified as impaired for Turbidity, a TMDL Plan would encourage stakeholders to target their conservation efforts on implementing projects directly benefiting the impaired water. Additional funding sources are also generated once a water body is listed as impaired.

What actions are needed to properly address Impaired Waters? By definition, being listed as an impaired water for a pollutant means the water body cannot sustain itself naturally. As a result, collaborative measures need to be taken in order to give the water body a chance to become healthy again. The various watershed organizations are the primary stakeholders involved with implementing TMDL activities. As a result, addressing Impaired Waters in County Water Plans is voluntary. Due to Impaired Waters being a priority water planning issue, the McLeod County Task Force created a separate Objective in Chapter Three aimed at assisting with MPCA's TMDL process. The Action Items include cooperating with water quality monitoring, assisting with the TMDL studies, partnering with the MPCA on their Watershed Approach, and assisting with the Environmental Protection Agency's efforts to develop Stressor Ids.

Who are the Key Stakeholders Addressing Impaired Waters? The Minnesota Pollution Control Agency is the key Impaired Waters stakeholder, as they are the agency responsible for generating the 303d List of Impaired Waters and also have oversight on the TMDL process. Locally, the various watershed and lake organizations are the key stakeholders. Due to the varying types of pollutants, however, nearly all of McLeod County's water plan stakeholders play some role in properly addressing Impaired Waters. For more information on McLeod County's Impaired Waters, refer to MPCA's correspondence in Appendix B, or visit MPCA's website at www.pca.state.mn.us.

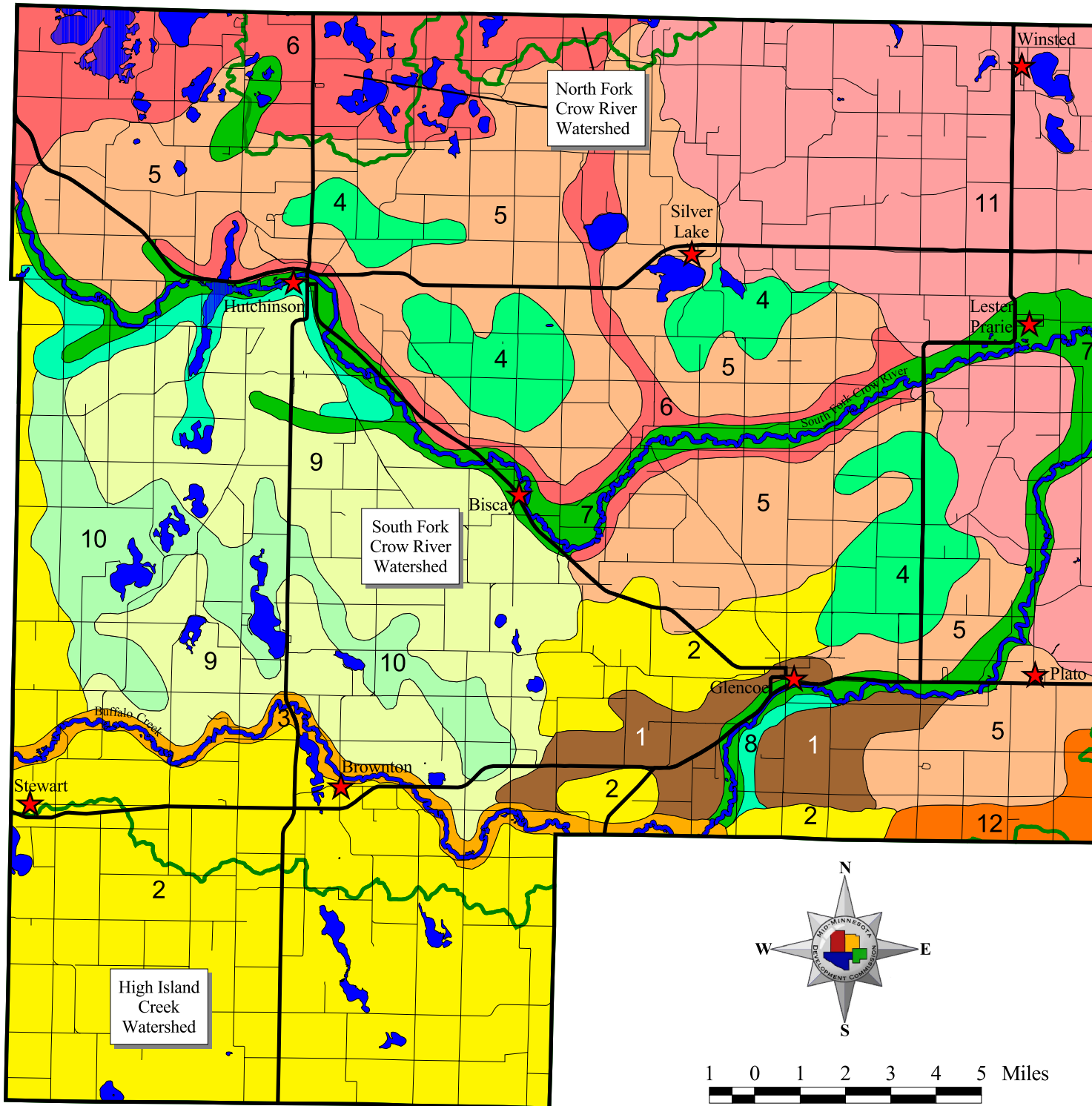
C. Erosion and Sediment Control Assessment

As an agricultural county, soils are one of McLeod County's most valuable resources. Soils develop from the breakdown of rock minerals, intermixed with plant and animal remains. The formation of a soil is an extremely long process, taking place over hundreds to thousands of years. McLeod County's soils were formed from deposits originally left by glaciers more than 10,000 years ago.

McLeod County's 12 major soil associations are displayed in Map 2E. A brief description of each association is provided:

1. **Clarion-Canisteo-Glencoe Association.** Soil textures for the association include loam and clay loam. Infiltration ranges from good to poor. The common landform setting for soils classified in the Clarion-Canisteo-Glencoe Association is moraines. Slopes generally range from 0 to 12 percent. The Clarion-Canisteo-Glencoe Association comprises 5 percent of the area in McLeod County and is primarily found along Buffalo Creek, south of Glencoe.
2. **Canisteo-Nicollet Association.** Soil texture for the association is a clay loam. Infiltration ranges from fair to poor. The common landform setting for soils classified in the Canisteo-Nicollet Association is moraines. Slopes generally range from 0 to 3 percent. The Canisteo-Nicollet Association comprises 19 percent of the area in McLeod County and is primarily found in the southwestern portion of the County.
3. **Coland-Clarion-Hawick Association.** Soil textures for the association include sandy loam, loam and clay loam. Infiltration ranges from good to poor. The common landform setting for soils classified in the Coland-Clarion-Hawick Association is flood plains, moraines and terraces. Slopes generally range from 0 to 18 percent. The Coland-Clarion-Hawick Association comprises 1 percent of the area in McLeod County and is found along Buffalo Creek, in the southern portion of the County.
4. **Canisteo-Glencoe-Cokato Association.** Soil textures for the association include loam and clay loam. Infiltration ranges from good to poor. The common landform setting for soils classified in the Canisteo-Glencoe-Cokato Association is moraines. Slopes generally range from 0 to 6 percent. The Canisteo-Glencoe-Cokato Association comprises 5 percent of the area in McLeod County and is sporadically distributed throughout the northern half of the County.
5. **Cokato-Canisteo-Cordova Association.** Soil textures for the association include loam and clay loam. Infiltration ranges from good to poor. The common landform setting for soils classified in the Cokato-Canisteo-Cordova Association is moraines. Slopes generally range from 0 to 12 percent. The Cokato-Canisteo-Cordova Association comprises 19 percent of the area in McLeod County and is primarily found in the northern part of the County.
6. **Cokato-Storden-Muskego Association.** Soil textures for the association include loam and muck. Infiltration ranges from good to poor. The common landform setting for soils classified in the Cokato-Storden-Muskego Association is moraines. Slopes generally range from 0 to 40 percent. The Cokato-Storden-Muskego Association comprises 8 percent of the area in McLeod County and is primarily found in the northern portion of the County.
7. **Estherville-Coland-Biscay Association.** Soil textures for the association include loam and clay loam. Infiltration ranges from good to poor. The common landform setting for soils classified in the Estherville-Coland-Biscay Association is terraces and flood plains. Slopes generally range from 0 to 6 percent. The Estherville-Coland-Biscay Association comprises 6 percent of the area in McLeod County and is primarily found along the South Fork Crow River and Buffalo Creek.

Map 2E: Soils



8. **Clarion-Canisteo-Storden Association.** Soil textures for the association include sandy loam and muck. Infiltration is generally good to poor. The common landform setting for soils classified in the Clarion-Canisteo-Storden Association is moraines. Slopes generally range from 0 to 18 percent. The Clarion-Canisteo-Storden Association comprises 4 percent of the area in McLeod County and is primarily found along the South Fork Crow River and Buffalo Creek.
9. **Clarion-Harps-Glencoe Association.** Soil textures for the association include loam and clay loam. Infiltration rates range from good to poor. The common landform setting for soils classified in the Clarion-Harps-Glencoe Association is moraines. Slopes generally range from 0 to 12 percent. The Clarion-Harps-Glencoe Association comprises 13 percent of the area in McLeod County and is primarily found in the west-central portion of the County.
10. **Harps-Clarion-Nicollet Association.** Soil textures for the association include loam and clay loam. Infiltration rates range from good to poor. The common landform setting for soils classified in the Harps-Clarion-Nicollet Association is moraines. Slopes generally range from 0 to 6 percent. The Harps-Clarion-Nicollet Association comprises 6 percent of the area in McLeod County and is primarily found in the west-central portion of the County.
11. **Lester-Cordova Association.** Soil textures for the association include loam and clay loam. Infiltration ranges from good to poor. The common landform setting for soils classified in the Lester-Cordova Association is moraines. Slopes generally range from 0 to 12 percent. The Lester-Cordova Association comprises 12 percent of the area in McLeod County and is primarily found in the northeastern portion of the County.
12. **Cokato-Cordova Association.** Soil textures for the association include loam and clay loam. Infiltration rates range from good to poor. The common landform setting for soils classified in the Cokato-Cordova Association is moraines. Slopes generally range from 0 to 12 percent. The Cokato-Cordova Association comprises 1 percent of the area in McLeod County and is found in the extreme southeastern portion of the County.

Reference: USDA, Soil Survey of McLeod County, Minnesota

Why is Soil Erosion and Sediment Control a Priority Concern?

The Priority Concerns Scoping Document (Chapter One) identified that cultivated agricultural land is the single largest land use in the County. The Priority Concerns Input Form submitted by the Minnesota Board of Water and Soil Resources (BWSR) best summarizes the significance of having erosion and sediment control as a priority issue addressed in the McLeod County Water Plan. As Tom Fischer, BWSR Board Conservationist writes (see Appendix B):

“Cultivated land is identified as making up approximately 79% of the land use in McLeod County. The rivers, lakes and streams of McLeod County depend on best management practices to be implemented on these lands so water quality degradation from sediment of eroding lands does not occur. To provide for the long-term productive capacity of the County’s soil resource base, these agricultural soils need to be protected ” (Submitted BWSR Priority Concerns Input Form, found in Appendix A).

Where are McLeod County’s Erosion Prone Soils Located and What Risks do they Pose?

The beginning of this section provided a generalized description of the 12 soil associations found in McLeod County. The following section analyzes the erosion potential of those soil associations. McLeod County is adversely affected by both wind and water erosion.

Water Erosion - Water erosion results from soil being moved from its original location by the force of water to the convex lower slopes and flats. Average tolerable soil loss for the County is three to five tons per acre per year. Erosion types are classified as sheet, rill, ephemeral and gully. Soil erosion affects cropland, urban areas, roadsides, lakeshores, streambanks and drainage systems. Water erosion impacts the water quality of the County’s water bodies, as well as develops detrimental conditions in the uplands and steeper slopes of the soil associations with erosion-prone characteristics. Water erosion in McLeod County generally occurs most often between the months of April and June, when fields have been tilled and planted, but a crop canopy has not developed to protect the soil surface.

The USDA developed the Universal Soil Loss Equation (USLE) to effectively predict the average rate of soil loss by sheet and rill erosion in tons per acre per year. One of the six factors used in the equation, erosion factor K, indicates the susceptibility of a soil to sheet and rill erosion. Values of K range from 0.02 to 0.69. The higher the value, the more susceptible the soil is to sheet and rill erosion. Map 2F identifies the water erosion prone soil associations in McLeod County that have K factors equal to or greater than 0.28. Table 2A details the McLeod County soil associations that are classified as erosion-prone. Notice that water erosion prone soils cover 80 percent of McLeod County.

**Table 2A:
Water Erosion Prone Soil Associations**

Soil Association	Percent of County	Soil Association	Percent of County
01 - Clarion-Canisteo-Glencoe	5	08 - Clarion-Canisteo-Storden	4
03 - Coland-Clarion-Hawick	1	09 - Clarion-Harps-Glencoe	13
04 - Canisteo-Glencoe-Cokato	5	10 - Harps-Clarion-Nicollet	6
05 - Cokato-Canisteo-Cordova	19	11 - Lester-Cordova	12
06 - Cokato-Storden-Muskego	8	12 - Cokato-Cordova	1
07 - Estherville-Coland-Biscay	6	Total	80

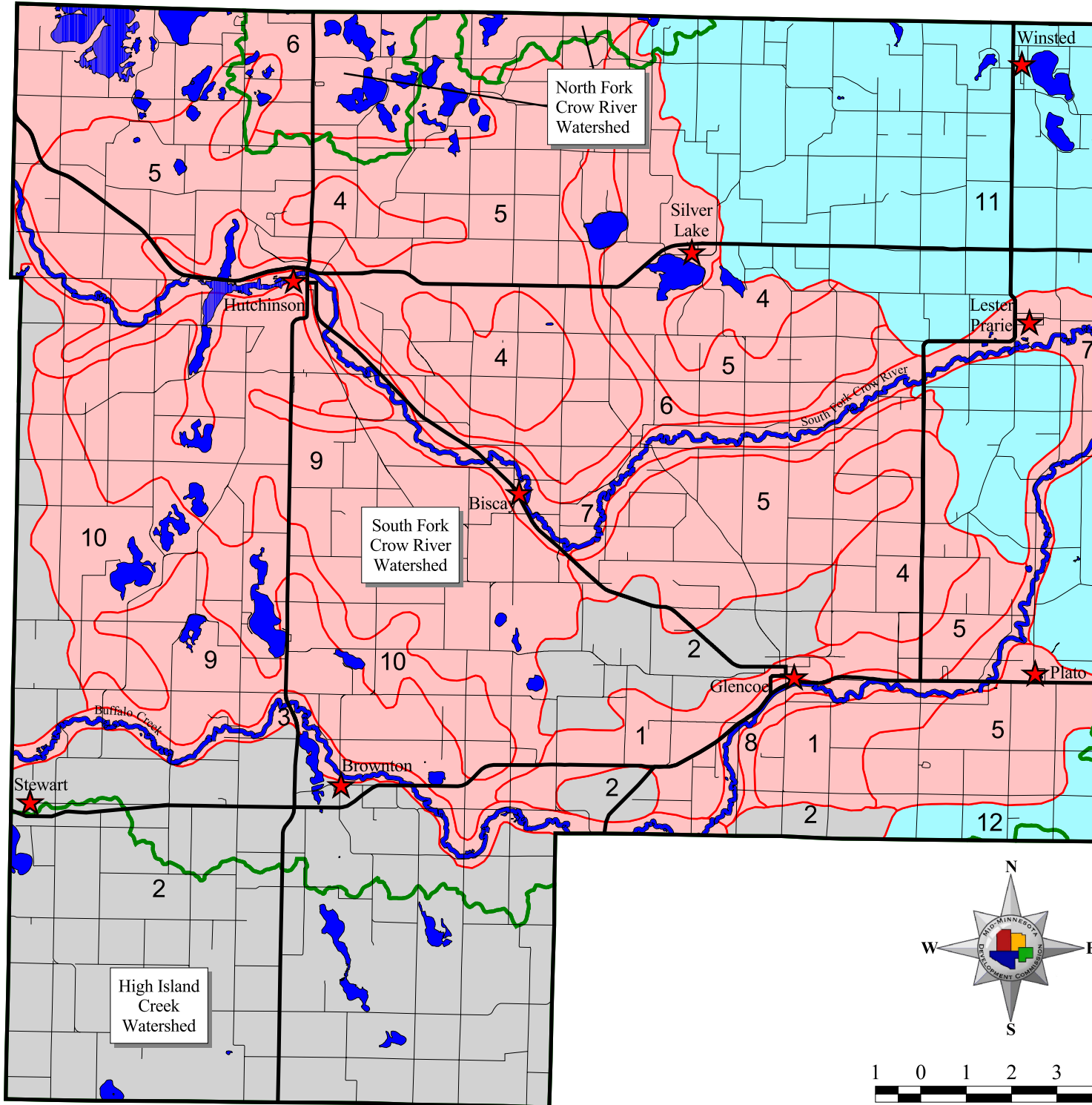
Wind Erosion - The potential for wind erosion occurs when wind velocities increase above 12 miles per hour. Wind speeds above this mark overcome the force of gravity and dislodge soil particles. Soil is most vulnerable when unprotected by vegetative cover. Soils with granulated structure are most susceptible to erosion, including sandy loam, loamy sand and sand. November through June, when field surfaces may be dry and strong northwest winds are prevalent, is the worst time period for wind erosion.

The USDA has classified soils into Wind Erodibility Groups, according to their susceptibility to wind erosion in cultivated areas. Wind Erodibility Groups range from 1-8. The lower the group number, the higher the vulnerability to wind erosion. Groups 4L or less are classified as highly susceptible to wind erosion. Map 2F displays the McLeod County soil associations that are classified as wind erosion-prone. Table 2B indicates that 86 percent of McLeod County has wind erosion prone soils.

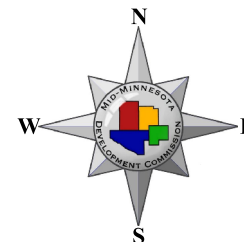
**Table 2B:
Wind Erosion Prone Soil Associations**

Soil Association	Percent of County	Soil Association	Percent of County
01 - Clarion-Canisteo-Glencoe	5	06 - Cokato-Storden-Muskego	8
02 - Canisteo-Nicollet	19	07 - Estherville-Coland-Biscay	6
03 - Coland-Clarion-Hawick	1	08 - Clarion-Canisteo-Storden	4
04 - Canisteo-Glencoe-Cokato	5	09 - Clarion-Harps-Glencoe	13
05 - Cokato-Canisteo-Cordova	19	10 - Harps-Clarion-Nicollet	6
Total			86

Map 2F: Erosion Prone Soils



- ★ Cities
 - Major Roadways
 - Minor Roadways
 - Lakes
 - Rivers
 - Watershed Boundaries
- Erosion Prone Soils**
- Wind Prone
 - Water Prone
 - Wind & Water Prone



1 0 1 2 3 4 5 Miles

What Actions are Needed to Properly Address Soil and Sediment Control problems and Who are the Key Stakeholders?

The loss of prime farmland through soil erosion impacts the farming community’s ability to produce the high quality crops over the long-term. In addition, soil erosion and sedimentation in water (referred to as turbidity) is one of the main pollutants identified in McLeod County’s List of Impaired Waters.

The McLeod County Soil and Water Conservation District (SWCD) is the primary water plan stakeholder dealing with preventing soil loss in McLeod County. As a result, the SWCD was included in a number of Action Steps found in Chapter Three, including targeting highly erodible land for conservation easements and providing technical and financial assistance for the implementation of water quality-related Best Management Practices (BMPs). The Natural Resource Conservation Service (NRCS), the Minnesota Department of Agriculture (MDA), and the various watershed management like organizations (i.e., Watershed Districts, Lake Associations, etc.) are also key stakeholders in properly addressing this priority issue.

D. Feedlots and Livestock Management Assessment

Why are Feedlots and Livestock Management a Priority Concern? The Minnesota Pollution Control Agency (MPCA) regulates and controls pollution created by animal feedlots. The MPCA’s feedlot rules were first adopted in 1971 and were amended in 1974, 1978 and again in 2000. The trend in agriculture has been toward fewer but larger livestock and poultry facilities. There has also been a trend of increasing awareness about the potential environmental effects of feedlots. In accordance with MPCA feedlot regulations, the owner(s) of an animal feedlot or manure storage area with 50 or more animal units, or 10 or more animal units if in shoreland (less than 300 feet from a stream or river, less than 1,000 feet from a lake) needed to register with the MPCA.

Definition of an Animal Unit

A standardized measure to compare differences in the production of animal manure for an animal feedlot or manure storage area. A mature cow of about 1000 pounds (455 kg.) is the standard unit.

What Risks do Feedlots and Livestock Management Issues Pose? Feedlot and livestock environmental issues are mostly concerned with manure management. Specifically, phosphorus and nitrogen runoff from manure can lead to water quality problems if not handled properly. In addition, livestock grazing can substantially increase erosion and sedimentation rates when best management practices are not followed.

Where are McLeod County's Feedlots Located? McLeod County is currently delegated to administer the MPCA feedlot program. The County has completed a Level One and Level Two Feedlot Inventory. The Level One Inventory was done to identify the location of existing feedlots. The Level Two Feedlot Inventory, contains specific information, such as size and type of manure storage, on each feedlot within the County. The location of McLeod County's feedlots (spread throughout the County) can be viewed by accessing McLeod County's GIS website at:

http://mcleod.houstoneng.com/all_layers/

What actions are needed to address Feedlots and Livestock Management issues and Who are the Key Stakeholders?

In addition to the MPCA, the Minnesota Department of Agriculture (MDA) is also a key stakeholder in feedlot/livestock management issues. Rob Sip from the MDA submitted a Priority Concerns Input Form during the Water Plan's scoping process (contained in Appendix B). The main comments concerning feedlots and livestock issues are as follows:

“Livestock manure used as fertilizer has benefited farmers for decades and if applied properly can meet crop nutrient requirements, build up soil organic material and decrease dependence on commercial fertilizers, increase soil fertility, and in some cases, reduce soil erosion. Manure as fertilizer is a constant reminder that we can reuse and recycle a product that was once thought of as a waste product with insignificant value. However, if manure is not properly applied it can lead to negative environmental impacts.

Manure, feed/silage leachate and milkhouse waste can be high in nutrient values, specifically pertaining to nitrogen and phosphorous. If improperly applied, manure does have the potential to contribute to nutrient loading and bacteria/viral levels of water sources. It is important for counties in the state to encourage the development of manure/nutrient management plans for the livestock producers within their borders. These plans address agronomic application rates for crops planted, buffered or protection areas around sensitive features, and reduce the potential of impacting surface or ground water.

Pasturing livestock is a common practice among livestock producers. Several studies and research through the University of Minnesota show that livestock grazing, if done properly, can enhance the quality of grazing lands. As your county is aware, pasture areas are often those areas that are not conducive to farming and generally contain sensitive landscape and surface water features. Nutrients left by livestock serve as a fertilizer source to pasture plant species, which then utilize and filter the nutrients rather than the nutrients being in excess and exiting the area in the form of runoff.

Types of vegetation, length of time in a pasture, stocking density and water availability are all issues livestock producers must be continued to be educated, in order to produce and utilize a productive, environmentally sound pasture or grazing system. Pastures or grazing systems not managed properly can restrict or eliminate vegetative growth and cover, which in turn can result in potentially negative water quality issues” (March 23, 2012).

The Water Plan Task Force, through the Action Steps identified in Chapter Three, reinforced McLeod County’s commitment to working with feedlot operators by developing a number of producer-friendly initiatives. To begin with, the first Action Step simply communicates the desire for McLeod County to continue locally administering MPCA Feedlot Program by being a delegated County. In addition, the County is committed to providing educational, technical, and financial assistance, as available, to assist with upgrading noncompliant feedlots. The SWCD is also committed to being fully engaged on assisting with feedlots. Finally, the County is committed to sponsoring manure and nutrient management meetings.

E. Subsurface Sewage Treatment Systems Assessment

Why are Subsurface Sewage Treatment Systems a Priority Concern? Subsurface Sewage Treatment Systems (SSTS), commonly known as septic systems, pose a threat to public health and the environment if not properly installed and maintained. They are regulated by Minnesota Statutes 115.55 and 115.56. These regulations detail:

1. Minimum technical standards for individual and mid-size SSTS (Chapter 7080 and 7081);
2. A framework for local administration of SSTS programs (Chapter 7082) and;
3. Statewide licensing and certification of SSTS professionals, SSTS product review and registration, and establishment of the SSTS Advisory Committee (Chapter 7083).

What Risks do SSTS’s Pose? According to the MPCA, “Expose to sewage through ingestion or bodily contact can result in disease, severe illness, and in some instances death from bacteria, viruses and parasites contained in waste. Therefore, it is important for sewage to be properly treated” (***Facts About Subsurface Sewage Treatment Systems, MPCA-June 2008***). In addition, high phosphorus levels normally found in sewage can also lead to excessive aquatic plant growth, causing a number of corresponding water quality problems.

Where are McLeod County's SSTS Located?

Although SSTS's are sometimes located within incorporated areas, SSTS's are commonly located throughout the rural areas of the County. They are the primary means of treating sewage on farmsteads, rural homesteads, and for lakeshore properties.

What would happen if Feedlots and Livestock Management issues are not addressed?

SSTS concerns need to be properly addressed in the Water Plan to minimize the potential for them to have negative effects on public health and/or the environment. In addition, proper SSTS management will also help to protect overall water quality and will help address some of the problems listed in the County's impaired waters.

McLeod County enforces MN Rule Chapter 7080-7083 through the McLeod County SSTS Ordinance. Two of the major components of the ordinance require a septic system disclosure form and a transfer agreement form upon property being transferred between the seller and buyer of property. In addition, McLeod County has offered SSTS financial assistance to low income homeowners, offering partial funding (60% up to \$6,000) to households with imminent health threat septic systems.

Who are the SSTS Key Stakeholders?

With McLeod County requiring SSTS compliance during the property transfer process, the McLeod County Environmental Services Department is the major stakeholder involved in dealing with SSTS issues locally. Some of the other key stakeholders are the Watershed Management-Like Organizations, such as lake associations, CROW, and BCWD. CROW, which stands for Crow River Organization of Waters, offers low interest loans (3%) for upgrades of non compliant septic systems in McLeod County. Likewise, BCWD, which stands for the Buffalo Creek Watershed District, offers a \$500 incentive to replace failing septic systems located within the District and that certain BWCD criteria.

For more information on SSTS issues, please visit the following websites:

- University of Minnesota Extension: [Onsite Sewage Treatment Program](#)
- Minnesota Pollution Control Agency (MPCA): [SSTS Program](#)
- Minnesota Onsite Wastewater Association: [MOWA](#)

F. Aquatic Invasive Species Assessment

Why are Aquatic Invasive Species a Priority Concern? Aquatic Invasive Species (AIS) are species that are not native to Minnesota and cause economic or environmental harm or harm to human health. It is illegal to transport any aquatic plants, such as zebra mussels, New Zealand mud-snails, or other prohibited invasive species, or to launch a boat or trailer with these species attached.

What Risks do AIS Pose? According to the Minnesota Department of Natural Resources, AIS can cause the following problems:

“A number of invasive plants and animal species have been severe world-wide agents of habitat alteration and degradation, and competition for native species. They are the major cause of biological diversity loss throughout the world, and are considered "biological pollutants." Their populations can often rapidly increase allowing them to disrupt native plant communities and crowd out native species. By changing habitat, they can also affect species beyond those they may directly displace. They can cause problems for those who use natural resources, whether for recreational use of land or waters or industrial use of public waters. Once established, invasive species rarely can be eliminated” (MN DNR Website: <http://www.dnr.state.mn.us/invasives/faq.html>).

Where are AIS Located in McLeod County? The Minnesota Department of Natural Resources (MnDNR) maintains a list of where each type of AIS is known to be found throughout the State. ***As of July 30, 2012, there were no known AIS locations in McLeod County.***

What actions are needed to properly address AIS issues and Who are the Key Stakeholders? McLeod County fully recognizes the significance of what AIS can do to the local economy, even though none are currently listed in McLeod County. To do their part in keeping it this way, the Water Plan Task Force created an Action Step to conduct and/or provide technical and financial assistance, as available, to lake associations and similar groups for the implementation of AIS prevention and/or control efforts.

MnDNR is the primary stakeholder responsible for providing educational efforts, establishing local grant programs, and for initiating Statewide legislation on AIS. They maintain a website that profiles each of the AIS. For more information on AIS, visit the following MnDNR website:

http://www.dnr.state.mn.us/invasives/index_aquatic.html

Section Two:

Surface Water Quantity ~ Management Assessment

This section of the Water Plan provides an assessment of McLeod County's surface water quantity and/or surface water management issues. Following are subsections on Agricultural Drainage, Stormwater Management, and Wetlands/Water Retention. It is important to remember, however, that all three of these subsections are interrelated. Consequentially, many points made as part of one resource assessment also pertains to the resource assessments for the other two categories.

G. Agricultural Drainage Assessment

Why is Agricultural Drainage a Priority Concern?

McLeod County has over 320 miles of public drainage ditch, mostly located in the South Fork of the Crow River and High Island Creek watersheds. These ditches were installed to provide drainage for agricultural lands, at a time when Federal and State policies were to increase agricultural production. Having adequate drainage for agricultural production is an essential component of our economy, however, most of the drainage systems installed in the past were designed primarily to remove water as rapidly as possible, without regard to effects on surface water quality and quantity.

Best management practices (BMPs), such as filter strips and alternative drainage methods, need to be targeted on drainage systems to prevent exacerbating current water quality and quantity problems. Implementation of such practices would not only improve the quality of the County's surface water, but it would also reduce the need for expensive ditch cleanout and repair.

The Minnesota Department of Natural Resources (DNR) has observed more "flashy" stream flows throughout the State, meaning that both high and low flows are exaggerated. Because many drainage ditch systems were designed to remove large quantities of water in a short duration, flooding problems are occurring more frequently, especially following major storm events and during the spring snowmelt. To minimize flooding impacts, upland storage needs to be increased to reduce the overall volume of water transported by the drainage system.

Due to recent high crop prices, an increasing amount of farmland is being tiled. This presents itself the opportunity to install new conservation drainage systems and to make improvements to the existing system. The newer systems can be designed to reduce nutrient losses and also positively affect the timing of flows into surface waters.

What are the Risks Associated with Agricultural Drainage? Although proper agricultural drainage is a necessary component in a healthy farming community, some negative environmental risks do exist if best management practices are not implemented properly. These sometimes include the following water-related problems:

- Loss of wetlands and water storage
- Increased flooding (due to loss of wetlands and water storage)
- Increased loss of nitrates through tile drains; increased phosphorus levels
- Increased soil erosion and turbidity
- Increased pesticides and farm chemicals in public waters

What actions are needed to properly address Agricultural Drainage issues and who are the Key Stakeholders in McLeod County?

In recent years the amount of pattern tiling has dramatically increased within the County. While pattern tiling has definite water quality and quantity benefits over conventional open tile intakes, the increasing installation has raised numerous questions on what overall impacts it will have on the environment. It is clear that more information is needed on the subject. As a result, the Water Plan Task Force created an Action Step to better understand the effects of pattern tiling on surface water management.

A number of drainage authorities in Minnesota have undertaken a systematic redetermination of benefits and damages for all of the Chapter 103E drainage systems under their jurisdiction, including surface ditches and subsurface tile systems. These drainage authorities include: Freeborn, Martin, Steele, Sibley, Kandiyohi and Faribault Counties. According to a BWSR (www.bwsr.state.mn.us/drainage), in a publication titled “Redetermination of Benefits and Damages for Drainage Systems:”

- Benefited lands and benefits of many public drainage systems have not been updated for decades, some for over a century.
- Drainage system benefits are determined at one point in time, with no provision in Chapter 103E to index for inflation over time. The cost of a repair cannot exceed the total value of benefits of the drainage system on record.
- The drainage system repair fund limit is 20% of the total assessed benefits of the system, or \$100,000, whichever is greater.
- Chapter 103E projects that require right-of-way (establishment, improvement, or repair by resloping of ditch side slopes) must have viewers appointed to determine associated benefits and damages. Partial system projects can create benefit inequities.

- As new private drainage is outlet into a public drainage system, the total benefits of the system and the relative benefits to land parcels and other infrastructure change. These benefits and associated assessments for repairs can only be updated via a redetermination of benefits and damages.

Due to the recent success of the Redetermination of Benefits in the various counties mentioned, the McLeod County Water Plan Task Force established an Action Step to support the process locally when requested by the landowners. Another key drainage Action Step identified was pursuing the development of a Countywide Drainage Management Plan. The purpose of this type of plan would be to identify problems and potential solutions to the existing drainage system. The main emphasis would be to ensure sufficient drainage for crop production, while maintaining and improving the County's water quality and quantity. Potential funding sources can be pursued from the Clean Water Fund and the Legislative Citizen Commission of Mn Resources (LCCMR).

H. Stormwater Management Assessment [partially recreated from www.pca.state.mn.us]

Why is Stormwater Management a Priority Concern and What are the Risks?

According the Minnesota Pollution Control Agency, the surest way to improve water quality in Minnesota is to better manage stormwater. Unmanaged stormwater can have devastating consequences on the quality of lakes, streams and rivers we enjoy. Stormwater often contains oil, chemicals, excess phosphorous, toxic metals, litter, and disease-causing organisms. In addition, stormwater frequently overwhelms streams and rivers, scours streambanks and river bottoms and hurts or eliminates fish and other aquatic organisms.

To better manage stormwater across the state, the MPCA administers the requirements of the federal Clean Water Act in addition to its own State Disposal System requirements. At the MPCA, the Stormwater Program includes three general stormwater permits: the Municipal Separate Storm Sewer Permit, the Construction Stormwater Permit and the Industrial Stormwater Permit. Each program administers a general permit (and in some cases, individual permits) that incorporates federal and state requirements for Minnesota stormwater management.

Stormwater management has evolved substantially over the past 20 years. Historically, the goal was to move water off the landscape quickly and reduce flooding concerns. Now we are focusing on keeping the raindrop where it falls and mimicking natural hydrology in order to minimize the amount of pollution reaching our lakes, rivers and streams, and to recharge our ground waters. In order to successfully do so, standards are needed to create consistency in design and performance. In response to this need, and advanced by a diverse group of partners, the Minnesota Legislature allocated funds to “develop performance standards, design standards or other tools to enable and

promote the implementation of low impact development and other stormwater management techniques.” (Minnesota Statutes 2009, section 115.03, subdivision 5c).

Minimal Impact Design Standards (MIDS) represents the next generation of stormwater management and contains three main elements that address current challenges:

- A higher clean water performance goal for new development and redevelopment that will provide enhanced protection for Minnesota’s water resources.
- New modeling methods and credit calculations that will standardize the use of a range of “innovative” structural and nonstructural stormwater techniques.
- A credits system and ordinance package that will allow for increased flexibility and a streamlined approach to regulatory programs for developers and communities.

The development of Minimal Impact Design Standards is based on low impact development (LID) — an approach to storm water management that mimics a site’s natural hydrology as the landscape is developed. Using the low impact development approach, storm water is managed on site and the rate and volume of predevelopment storm water reaching receiving waters is unchanged. The calculation of predevelopment hydrology is based on native soil and vegetation (Minnesota Statutes 2009, section 115.03, subdivision 5c).

Where are Stormwater Management concerns in McLeod County?

Stormwater management concerns are primarily concentrated in the developed areas of McLeod County, including in cities, roadways, parking lots, and around the County’s lakeshore communities. Most of McLeod County is experiencing population growth, especially to the east closest to the Minneapolis-St. Paul Metropolitan Area. In addition, the Cities of Hutchinson, Glencoe, Winsted, and Lester Prairie are experiencing above average growth rates.

What actions are needed to properly address Stormwater Management issues in McLeod County?

The MPCA has put together a number of Best Management Practices (BMPs) guidelines for everyone from homeowners to industrial operations. Promoting them becomes an essential component of what McLeod County can do to assist with minimizing stormwater pollution. The most effective solution to stormwater pollution is encouraging people to change the way they see and treat stormwater. To accomplish this, the McLeod County Water Plan Task Force identified a number of stormwater related Action Steps, including assisting with the development of Stormwater

Management Plans and working with municipalities to establish stormwater storage basins, which provide a place for pollutants to settle rather than entering public waters.

In rapidly developing areas of the County, particularly surrounding the cities and lakeshore areas, the increasing amount of impervious surface has resulted in a need for greater stormwater management. The County should work with landowners in these areas to install BMPs to reduce runoff rates. The County should also consider developing a stormwater management ordinance, to set standards for the quality and quantity of runoff. Through land use controls, stormwater management plans should become increasingly important as a method to assist with minimizing pollution and managing temporary surface water.

Who are the Key Stakeholders in Properly Addressing Stormwater Concerns?

Since the major stormwater management concerns are in the developed areas of the County, the various municipalities are the major stakeholders involved with properly addressing stormwater concerns. The McLeod County Planning and Zoning Department and its corresponding Environmental Services Department also play a large role in reviewing stormwater management plans for all types of rural development.

Watershed management like organizations also play a large role in promoting stormwater BMPs. The Buffalo Creek Watershed District is currently working with the City of Glencoe and McLeod County on establishing a large stormwater management project, referred to as the Marsh Water Project. In addition, the McLeod County SWCD has included in Action Step to provide technical assistance to citizens on stormwater BMPs and to assist with proper implementation.

At the State level, the Minnesota Pollution Control Agency is the largest stakeholder dealing with stormwater issues, largely due to its oversight responsibility with the Clean Water Act. For more information on MPCA's stormwater rules, initiatives, and programs, please visit the following website:

www.pca.state.mn.us

McLeod County Geographic Information Systems

McLeod County Geographic Information Systems (GIS), a division of the Highway Department, is well equipped to assist with providing a variety of maps and geographic data. *For more information, visit the McLeod County GIS Website at:*

www.co.mcleod.mn.us/gis

I. Wetlands/Water Retention Assessment

Why are Wetlands and Water Retention a Priority Concern?

Wetlands in McLeod County serve many important functions, including: flood attenuation, wildlife habitat, improved water quality, recreational opportunities and aesthetics. Although many of the County's Type 3 or larger wetlands remain, most of the County's Type 1 and 2 wetlands have been drained for agricultural production. Much of the wetland draining in the County occurred in the 1960s and early 1970s, when the Federal government's farm policies compensated agricultural producers up to 90 cents on the dollar to install artificial drainage systems. As result of these Federal government payments and policies, an extensive artificial drainage system was installed in McLeod County.

Wetlands Conservation Act

In 1991, the Minnesota Legislature passed Chapter 354, the Wetlands Conservation Act (WCA), which created a statewide "no-net loss" policy for wetlands. The law requires anyone proposing to drain or fill a wetland to first try to avoid disturbing the wetland; second, try to minimize any impact on the wetland; and, finally, replace any lost wetland acres, functions and values. Certain wetland activities are exempt from the Act, allowing projects with minimal impact or projects located on land where certain pre-established land uses are present to proceed without regulation. The WCA recognizes a number of wetland benefits deemed important, including:

- Water quality, including filtering pollutants out of surface water and groundwater, using nutrients that would otherwise pollute public waters, trapping sediments, protecting shoreline, and recharging groundwater supplies;
- Floodwater and stormwater retention, including reducing the potential for flooding in the watershed;
- Public recreation and education, including hunting and fishing areas, wildlife viewing areas, and nature areas;
- Commercial benefits, including wild rice and cranberry growing areas and aquaculture areas;
- Fish and wildlife benefits; and
- Low-flow augmentation during times of drought.

What are the Risks Involved with Wetlands/Water Retention? There are numerous water quality and quantity concerns directly related to wetlands and/or water retention issues. Their main water quantity value stems from the increasingly important water management philosophy of allowing water to be absorbed into the ground where it falls. Not only does this avoid overloading ditch systems and streams, thereby reducing erosion and flooding issues, they also provide an extremely value source of groundwater recharge. From a water quality perspective, wetlands provide a natural basin for stormwater management, acting as high effective filters. The vegetation found in wetlands help to remove phosphorous. This helps to minimize the unwanted growth of aquatic weeds and algae, which end up using the oxygen that plants and animals need to survive.

Where are Wetland/Water Retention concerns in McLeod County? Today, due in part to regulations such as the WCA, very few if any wetlands are being lost. The State's Protected Waters Inventory, the Federal Swampbuster Act, and Section 404 of the Clean Water Act also largely contribute to protecting wetland resources. In addition, conservation programs, such as the Wetland Reserve Program and Reinvest in Minnesota Program, actually provide landowners an opportunity to restore previously drained wetlands along with preserving existing wetlands. These programs and others like them should continue to be promoted to landowners within McLeod County.

What actions are needed to properly address Wetlands/Water Retention issues in McLeod County and who are the Key Stakeholders? The McLeod County Environmental Services Office implements WCA locally. The Minnesota Board of Water and Soil Resources (BWSR) administers WCA statewide. To further wetland preservation efforts, the McLeod County Water Plan Task Force identified a number of Action Steps that will assist with both wetland protection and water retention. This includes working with the various Water Plan Stakeholders to explore options to restore wetlands with voluntary landowners. The County is also committed to providing education and technical assistance on the importance to protecting wetlands, and assisting with finding which conservation programs may best fit each opportunity. The County's Soil and Water Conservation District is also committed to working with landowners on wetland provisions and Best Management Practices. The County will also continue to designate wetlands in shoreland and floodplain areas as high priority areas for preservation and administration of WCA.

Rob Sip from the Minnesota Department of Agriculture summarizes the issues best (Appendix B):

“Properly locating wetlands and water storage or retention projects can be a strategic component of overall efforts to manage nutrients, sediments, and water quantity issues”
(March 23, 2012).

Wetland restorations should also be targeted in conjunction with drainage ditch system improvements to assist with flood mitigation, water retention, and stormwater management benefits.

Section Three: Groundwater Quality & Quantity Assessment

Why is Groundwater a Priority Concern?

The obvious answer to why groundwater is a priority concern in McLeod County's Water Plan is because it provides the source for our drinking water. Consequentially, groundwater quality issues are at the forefront of our environmental protection efforts. The numerous multiple uses of groundwater, however, also contributes to groundwater quantity becoming an increasingly important resource concern. For example, the farming community is dependent upon having adequate access to groundwater in order to produce high yield crops. Numerous business and industries are also dependent upon groundwater supplies.

Where are Groundwater concerns in McLeod County, What are the Risks, and Who are the Key Stakeholders?

There is a vast amount of information available on both groundwater quality and quantity for McLeod County. There are numerous stakeholders who are involved with groundwater issues, including the Minnesota Department of Natural Resources, the Minnesota Pollution Control Agency, the Minnesota Department of Health, and the Minnesota Department of Agriculture. Their major roles regarding groundwater are briefly summarized.

The Minnesota Department of Natural Resources (DNR)

The Minnesota Department of Natural Resources (DNR) monitors the use of the State's water and allocates resources to assure there is sufficient quality and quantity to supply the needs for future generations. Under the observation well network program, groundwater levels are routinely measured in 1,500 wells statewide. The primary objectives of the observation well network are to:

- Place wells in areas of future or present high groundwater use while considering variations in geologic and other environmental conditions;
- Identify long-term trends in groundwater levels;
- Detect significant changes in groundwater levels;
- Provide data for evaluation of local groundwater complaints;
- Provide data to resolve allocation problems; and
- Identify target areas that need further hydrogeologic investigation, water conservation measures, or remedial action.

To access the DNR's groundwater data, visit the following website:

http://www.dnr.state.mn.us/waters/groundwater_section/obwell/waterleveldata.html

The DNR also issues groundwater appropriation permits and investigates any well interference problems, which are rare and are usually rather easy to solve.

Minnesota Department of Health

The Minnesota Department of Health maintains the County Well Index database which has water-level data, such as location, depth, and static water level, from more than 300,000 wells statewide. The data is made available online and can search by aquifer type. To access this data online, visit the following website:

<http://www.health.state.mn.us/divs/eh/cwi/>

Minnesota Department of Health also maintains water-quality information for approximately 16,000 public water supply wells. They also take the lead on assisting communities with preparing Wellhead Protection Plans, which are designed to protect public drinking water supplies. This information can be accessed at the following website:

<http://www.health.state.mn.us/divs/eh/water/swp/index.htm>

Minnesota Pollution Control Agency

In 1989, the Minnesota Pollution Control Agency (MPCA) received a grant from the Legislative Commission on Minnesota Resources (LCMR) to redesign Minnesota's ambient groundwater monitoring program. The resulting program was called the Groundwater Monitoring and Assessment Program (GWMAP). GWMAP's primary objective was to meet statewide and local groundwater quality information needs. For over a decade the program endeavored to answer five basic questions about Minnesota groundwater quality:

1. What are background concentrations of chemicals in Minnesota's groundwater?
2. Where is the groundwater impacted by human activities?
3. What is the nature and severity of the impact?
4. Why is the groundwater impacted?
5. What can be done to minimize groundwater impacts?

Three components were created to facilitate answering these questions. The first component was a statewide baseline assessment of water quality in Minnesota's principal aquifers, conducted from 1990-1996. The second component involved conducting groundwater trend studies. The staff of GWMAP conducted a series of discussions and determined that changes in land use could be linked to trends in water quality. Consequently, GWMAP designed and conducted a variety of land use studies between 1996 and 2001. Groundwater studies were conducted throughout the State to evaluate impacts from different land use management strategies. The third and final component of GWMAP was the development of regional cooperatives. Between 1992 and 2001, GWMAP staff provided groundwater data and information to a variety of people and groups, as well as technical support to local groups conducting groundwater monitoring. The GWMAP program was discontinued in the summer of 2001, however the results are still available by visiting the following website:

<http://www.pca.state.mn.us/index.php/water/water-types-and-programs/groundwater/groundwater-monitoring-and-assessment/index.html>

Minnesota Department of Agriculture

The Minnesota Department of Agriculture (MDA) monitors groundwater for the presence of agricultural chemicals. In addition, the MDA provides technical information and financial assistance to implement specific water-quality Best Management Practices (BMPs).

MDA Nitrate Water Testing Program - In 1993, the Minnesota Department of Agriculture developed a “walk-in” style of water testing clinic with the goal of increasing public awareness of nitrates in rural drinking and livestock water supplies. Results from the testing not only educate the participants but may also provide some broad information on the occurrence of nitrate ‘hotspots’ across the State; this could eventually aid in justifying nitrate monitoring networks/programs. The clinic concept revolves around a number of simple principles: local participation is critical; testing is free to the public with immediate results; the overall program needs to be inexpensive; a non-regulatory atmosphere is important and well owners may remain anonymous; and the staff’s most important goal is to provide the required technical assistance across a diverse audience of well owners.

Since the beginning of the program, the Nitrate Water Testing Program has provided testing services and educational outreach to over 50,000 well owners. The concept has proven adaptable for county fairs, field day events, public school programs and ‘stand-alone’ events. Past sponsors have been the Soil and Water Conservation Districts, U of M Extension Service, county health or environmental health services, county planning and zoning, public schools, lake associations and farm organizations.

The MDA also submitted a Priority Concerns Input Form (found in Appendix B), that provided a number of key implementation suggestions for the County's Water Plan. Of special significance, the MDA submitted a map showing McLeod County's Water Table Sensitivity. This map, shown on the next page, classifies the County into three aquifer sensitivity ratings: low, medium, and high. These reflect the likelihood that infiltration precipitation or surface water would reach the water table, potentially polluting the groundwater with surface contaminants.

What actions are needed to properly address Groundwater issues in McLeod County?

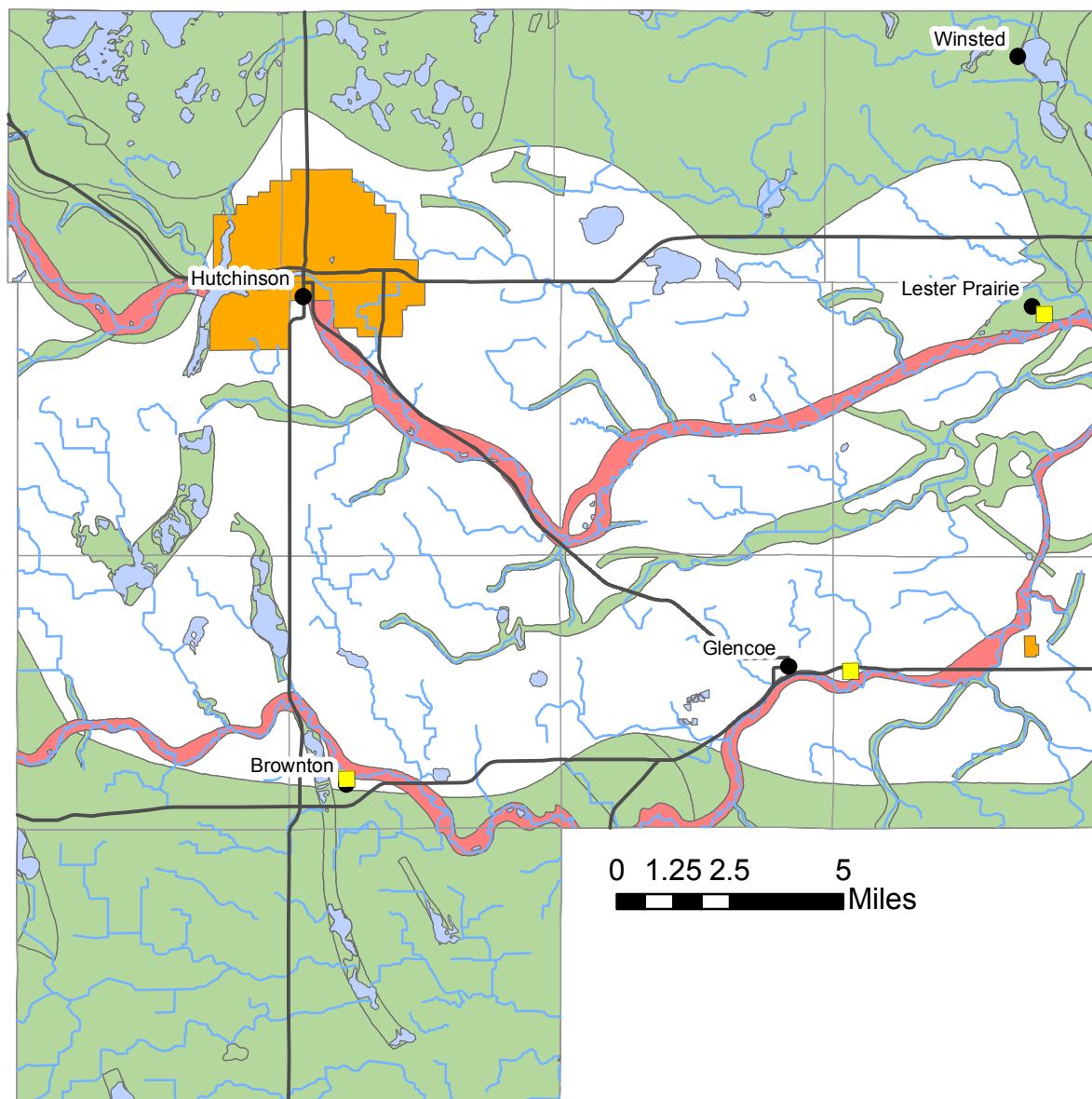
Current groundwater quality monitoring efforts by the Minnesota Department of Agriculture (MDA), Minnesota Department of Health (MDH) and the Minnesota Pollution Control Agency (MPCA) and other stakeholders should be continued and expanded within the County. More importantly, any important conclusion on the results of these monitoring efforts should be shared with the County's Water Plan Task Force so that timely decisions can be made accordingly.

Chapter Three identifies a number of key Action Steps aimed on managing the County's groundwater supplies, separated into groundwater quality and groundwater quantity initiatives. One of the new Action Steps prescribes creating a Water Conservation Program, with low-flow conservation kits and a County Drought Contingency Plan. In addition, the County is committing to providing educational, technical and financial assistance, as available, to landowners for the implementation of groundwater protection BMPs, including the proper decommissioning of wells and storage tanks and the correct application of pesticides and other chemicals.

The County will also participate in the preparation and implementation of wellhead protection plans for public water suppliers, and continue an empty pesticide container collection day, contingent upon the availability of funding. Action Steps also address sealing abandoned wells, burning and burying of solid waste, and learning how to best use hydrogeologic information for the County to evaluate the impact of land use activities on ground water supplies.

MCLEOD COUNTY WATER TABLE SENSITIVITY

Reclassification of Geomorphology of Minnesota- Sediment Association Layer (DNR, MGS, UMD, 1997)



LEGEND

Public Water Supply Wells

Nitrate-N mg/L

3- 2.9

> 10

DWSMA (MDH)

Aquifer Sensitivity

Rating

Low

Medium

High

Landscape Features

Roads

Rivers and Streams (DNR)

Water Features (DNR)

Townships



Chapter Three:

McLeod County Water Plan

Goals, Objectives & Action Steps (2013-2018)

This Chapter establishes the McLeod County's Water Plan Goals, Objectives, and Action Steps. Although the Water Plan will cover a span of 10 years (2013-2023), this Chapter of the Plan will guide the County in water resource management efforts over the first five years (2013-2018). Each Action Step has been assigned specific implementation information, including the priority watershed (if one was identified), stakeholders involved, and an estimated cost to implement the activity. Collectively the Action Steps provide the foundation for achieving success with the Plan's Goals and Objectives, and therefore the County's corresponding priority water plan issues.

A. Definition of Goals, Objectives, and Action Steps

The Goals, Objectives, and Action Steps that are identified in this Chapter were developed with input from the public, various State and local governmental units/agencies, and the McLeod County Water Plan Taskforce. The following provides a definition of these terms:

Goal: A goal is an idealistic statement intended to be attained at some undetermined future date. Goals are purposely general in nature.

Objective: An objective is an action-oriented statement that supports the completion of a goal. There may be more than one objective per goal.

Action Step: An Action Step is a specific activity that will be taken in order to achieve a goal and objective.

B. Action Step Information

Each Action Step identified in this Chapter has been assigned specific information on priority watershed(s), stakeholders involved, and the activity's estimated cost. In addition, if a specific time-frame was identified (i.e., when the Action Step should be completed by), this was communicated by placing a year in parenthesis in the Action Item. For example, if (2015) appears in the Action Step, this means the activity ideally would need to be completed by the end of 2015. Otherwise, each Action Step is intended to be implemented on either an ongoing or annual basis. A more detailed description of these categories is provided as follows:

The action steps are estimates of potential implementation activities that can change due to work loads, available project funding, or a re-determination of priorities in the water plan. Furthermore, many of the action steps represent commitments on behalf of the various water plan stakeholders and can only be accomplished if funding is available.

Priority Watershed(s): Details the areas within the County where the implementation of the initiative is most critical.

Stakeholder (s): This entails who potentially will be involved in the implementation of the identified initiative. An *Asterisk and Underline indicates lead responsibility. A listing of the most common coordinating agencies and their respective acronyms is provided below (note: some are explained in the various Action Steps):

Cities (Cities)

County (County)

County Board (CB)

Environmental Services (ES) – *Local Water Management Coordinator*

Geographic Information Systems (GIS)

Highway (Highway)

Planning and Zoning (PZ)

Public Health (PH)

Soil and Water Conservation District (SWCD)

Solid Waste (SW)

Minnesota Board of Water and Soil Resources (BWSR)

Minnesota Department of Agriculture (MDA)

Minnesota Department of Employment and Economic Development (DEED)

Minnesota Department of Health (MDH)

Minnesota Department of Natural Resources (DNR or MnDNR)

Minnesota Geological Survey (MGS)

Minnesota Pollution Control Agency (MPCA)

Minnesota Public Facilities Authority (PFA)

Natural Resources Conservation Service (NRCS)

University of Minnesota Extension (UME)

United States Army Corps of Engineers (USACE)

United States Department of Agriculture (USDA)

United States Environmental Protection Agency (EPA)

United States Fish and Wildlife Service (USFWS)

United States Geological Survey (USGS)

Watershed Management-Like Organizations (WMLLO)

Buffalo Creek Watershed District (BCWD)

Crow River Organization of Water (CROW)

High Island Creek Joint Powers Board (HICJPB)

High Island Creek Watershed District (HICWD)

Lake Associations (LA)

Watershed Districts (WD)

Estimated Cost: This category divides the estimated costs of completing the Action Step into two columns: Overall and County. The Overall column provides an **estimate** of the total cost among all stakeholders (i.e., grants, cost-share, County match, etc.) to implement the Action Step. The County column represents the **estimated** cost incurred either directly or indirectly by McLeod County to implement the Action Step, including by the McLeod County SWCD. The Action Steps the County were unable to assign an estimated cost to are listed as To Be Determined (TBD). Most costs are estimated yearly (yr.) as ongoing costs.

C. Goals, Objectives & Action Steps (2013-2018)

GOAL 1: PROTECT AND IMPROVE SURFACE WATER QUALITY				
Action Step	Priority Watershed	Stakeholders * <u>Indicates lead</u>	Estimated Cost	
			Overall	County
Objective A: Implement BMPs to Reduce erosion and sediment loading of surface water resources.				
1. <i>Erodible Land.</i> Annually target 500 acres of highly erodible land for enrollment in conservation easement programs, such as CRP and RIM.	All	* <u>SWCD</u> , * <u>WMLO</u> , NRCS	\$50,000/yr.	\$20,000/yr.
2. <i>BMP Program.</i> Provide educational, technical, and financial assistance, as available, to landowners for the implementation of water quality-related BMPs. Implement a minimum of five projects annually.	All	* <u>SWCD</u> , WMLOs, All	\$250,000/yr.	\$75,000/yr.
3. <i>Cost-Share.</i> Seek financial aid in the form of State cost-share, Federal EQIP, and Clean Water Funds for the installation of BMPs. Establish a minimum of \$100,000 in cost-share funds annually.	All	* <u>SWCD</u> , WMLOs, All	\$100,000/yr.	\$25,000/yr.
4. <i>Site Inspections.</i> Conduct site inspections and provide technical assistance to interested landowners. Target 25 inspections annually.	All	* <u>SWCD</u> , WMLOs, All	\$25,000/yr.	\$25,000/yr.
5. <i>SWCD Wind Erosion.</i> Establish 1 mile of field windbreaks and five acres of shelterbelts annually.	All	* <u>SWCD</u> , NRCS	\$25,000/yr.	\$5,000/yr.
6. <i>SWCD Water Erosion.</i> Reduce sediment loading and erosion into surface waters by installing BMPs. Implement five projects annually.	All	* <u>SWCD</u> , NRCS	\$50,000/yr.	\$10,000/yr.

GOAL 1: PROTECT AND IMPROVE SURFACE WATER QUALITY

Action Step	Priority Watershed	Stakeholders <i>*Indicates lead</i>	Estimated Cost	
			Overall	County
Objective B: Proactively work to delist all of McLeod County’s water bodies off the MPCA’s 303d List of Impaired Waters (TMDLs).				
7. <i>Water Quality Monitoring.</i> Cooperatively work with partners to continue water quality monitoring efforts. Annually review the data and adjust BMP programs accordingly. Continue to weekly monitor the Crow River and High Island Creek for water clarity using a turbidity tube (except when frozen).	All	<i>*WMLO, *ES,</i> MDA, MDH, MPCA, PH, DNR	\$35,000/yr.	\$1,500/yr.
8. <i>TMDL Studies.</i> Cooperatively work with partners to coordinate the preparation and implementation of TMDL studies and plans for Impaired Waters. Biannually review and target the impaired waters for BMP implementation (2014 & 2016).	All	<i>*MPCA,</i> <i>*WMLO,</i> SWCD, ES	\$100,000/yr.	\$10,000/yr.
9. <i>Watershed Approach.</i> Partner in MPCA’s watershed approach to identifying and addressing water quality problems. Annually review and target key subwatersheds for BMP implementation and Civic Engagement Activities with stakeholders.	All	<i>*MPCA,</i> <i>*CROW,</i> WMLOs, All	\$25,000/yr.	\$5,000/yr.
10. <i>Stressor IDs.</i> Assist with the U.S. Environmental Protection Agency’s (EPA) efforts in the development of stressor identification in aquatic ecosystems. Once the stressors are identified, target BMPs accordingly.	All	<i>*MPCA,</i> WMLOs, DNR	\$10,000/yr.	\$500/yr.

GOAL 1: PROTECT AND IMPROVE SURFACE WATER QUALITY

Action Step	Priority Watershed	Stakeholders * <u>Indicates lead</u>	Estimated Cost	
			Overall	County
Objective C: Reduce or minimize the negative impacts of animal manure and lawn fertilizers.				
11. Feedlot Program. Continue to locally administer the County Feedlot Program to assist feedlot operators in obtaining and maintaining compliance with State regulations. Annually inspect 10% of the feedlots in the County.	All	* <u>ES</u> , MPCA, SWCD	\$75,000/yr.	\$50,000/yr.
12. Noncompliant Feedlots. Provide educational, technical, and financial assistance, as available, to landowners/producers to upgrade noncompliant feedlots. Implement one feedlot upgrade annually.	All	* <u>ES</u> , * <u>SWCD</u> , MDA, MPCA, NRCS, WMLOs	\$50,000/yr.	\$15,000/yr.
13. SWCD Feedlot Assistance. Assist the County with Feedlot site evaluations, planning, design, and overall general technical assistance. Complete MINNFARM evaluations for potential pollution problems and assist with fixing problems, when necessary. Target impaired waters and implement 5 projects annually.	All	* <u>SWCD</u> , NRCS	\$100,000/yr.	\$60,000/yr.
14. Nutrient Management Meeting. Sponsor an annual meeting to provide information on proper nutrient management.	All	* <u>ES</u> , MPCA, UME, WMLOs	\$2,500/yr.	\$2,000/yr.
15. Manure and Nutrient Management. Provide educational and technical assistance, as available, to landowners/producers on proper manure and nutrient management. Target impaired waters.	All	* <u>ES</u> , <u>SWCD</u> , NRCS, MPCA, WMLOs, UME	\$60,000/yr.	\$10,000/yr.

Objective C continued...

Objective C continued...

Action Step	Priority Watershed	Stakeholders <i>*Indicates lead</i>	Estimated Cost	
			Overall	County
16. <i>High Island Creek Watershed Initiative.</i> Work with High Island Watershed to reduce Fecal coliform and E. coli levels through the implementation of manure management and feedlot BMPS. ✓ <i>Host two manure management workshops (2013 & 2014)</i> ✓ <i>Host one manure management field day (2013)</i> ✓ <i>Mail out quarterly newsletters</i>	High Island Creek Watershed	<i>*<u>HICJPB</u>, <u>MPCA</u></i>	\$5,000/yr.	\$500/yr.

GOAL 1: PROTECT AND IMPROVE SURFACE WATER QUALITY				
Action Step	Priority Watershed	Stakeholders * <u>Indicates lead</u>	Estimated Cost	
			Overall	County
Objective D: Work with landowners on properly implementing the County’s Subsurface Sewage Treatment System Ordinance and other wastewater initiatives.				
17. SSTS Program. Continue to provide compliance and inspection services as part of the County’s SSTS Program. Permit and inspect 100 new septic systems annually.	All	* <u>ES</u> , MPCA	\$30,000/yr.	\$30,000/yr.
18. Noncompliant SSTs. Provide educational and financial assistance, as available, to homeowners to upgrade noncompliant SSTs. Target impaired waters and upgrade 10 systems annually.	All	* <u>ES</u> , * <u>CROW</u> , MDA, MPCA, UME, WMLO	\$100,000/yr.	\$10,000/yr.
19. Improper SSTS Discharge. Investigate and initiate corrective measures for SSTs improperly discharging into drainage ditches, lakes, and rivers when reported.	All	* <u>ES</u> , DNR, MPCA	\$10,000/yr.	\$5,000/yr.
20. Industrial Development. Encourage industrial development to be located where appropriate public services are located, such as municipal sewer service. Biannually review development ordinances to ensure proper language (2013, 2015, 2017).	All	* <u>PZ</u>	\$1,000/yr.	\$500/yr.

Objective D continued...

Objective D continued...

Action Step	Priority Watershed	Stakeholders <i>*Indicates lead</i>	Estimated Cost	
			Overall	County
21. <i>Shoreland Development.</i> Provide technical and financial assistance, when available, to assist lake associations and shoreland residents with the installation of cluster sewer systems.	All	<i>*<u>ES</u></i>	\$5,000/yr.	\$5,000/yr.
22. <i>BCWD SSTS Incentive.</i> Provide \$500 incentive to replace 5 failing septic systems, according to BCWD criteria.	Buffalo Creek	<i>*<u>BCWD</u></i>	\$15,000/yr.	\$500/yr.
23. <i>HICWD SSTS Incentive.</i> Provide \$500 incentive to replace 5 failing septic systems, according to HICWD criteria.	HICW	<i>*<u>HICWD</u></i>	\$15,000/yr.	\$500/yr.
24. <i>Wastewater Treatment.</i> Cooperatively work with partners to address wastewater treatment issues. Assist with securing funds with one project annually or as needed.	All	<i>*<u>MPCA</u>, *<u>Cities</u>, DEED, ES USDA</i>	\$50,000/yr.	\$15,000/yr.
25. <i>City of Biscay.</i> Complete work on Biscay in upgrading their septic system with the construction of the cluster system in 2013 and finish construction of sewer lines and tank installation in 2014.	South Fork Crow River	<i>*<u>ES, MPCA</u>, <u>BWSR, PFA</u></i>	\$1,200,000	\$5,000

GOAL 1: PROTECT AND IMPROVE SURFACE WATER QUALITY

GOAL 1: PROTECT AND IMPROVE SURFACE WATER QUALITY				
Action Step	Priority Watershed	Stakeholders *Indicates lead	Estimated Cost	
			Overall	County
Objective E: Enhance shoreland and lake management efforts.				
26. <i>Lake Management.</i> Conduct and/or provide technical and financial assistance, as available, to partners for the implementation of lake management efforts, when appropriate. Target impaired waters and implement two projects annually.	All	* <u>WMLOs</u> , * <u>DNR</u> , ES	\$10,000/yr	\$5,000/yr
27. <i>Aquatic Invasive Species Management.</i> Conduct and/or provide technical and financial assistance, as available, to lake associations and other groups/organizations for the implementation of invasive aquatic species prevention and/or control efforts. Host one meeting annually.	All	* <u>DNR</u> , ES, WMLOs	\$20,000/yr	\$5,000/yr
28. <i>Lake Level Conflicts.</i> Work with the DNR and other stakeholders to resolve lake level conflicts.	All	* <u>ES</u> , DNR, WMLO	\$2,500/yr.	\$500/yr.
29. <i>Watercourse Management.</i> Proactively cleanout debris from water resources. Implement one project annually.	All	* <u>WMLO</u> , <u>DNR</u>	\$25,000/yr.	\$5,000/yr.
30. <i>Shoreland Ordinance.</i> Continue to implement the County’s Shoreland zoning standards. Biannually review (2014, 2016).	All	* <u>PZ</u> , ES	\$7,500/yr.	\$4,000/yr.
31. <i>City of Lester Prairie.</i> Support the City of Lester Prairie’s efforts to obtain Clean Water Funding for shoreland restorations along the Crow River.	South Fork Crow River	* <u>City of Lester Prairie</u> , <u>ES</u> , <u>SWCD</u> , <u>DNR</u>	\$50,000/yr.	\$500/yr.

GOAL 1: PROTECT AND IMPROVE SURFACE WATER QUALITY

Action Step	Priority Watershed	Stakeholders <i>*Indicates lead</i>	Estimated Cost	
			Overall	County
Objective F: Administer initiatives that will enhance sustainable land management activities.				
32. <i>Hazardous Waste Program.</i> Continue the County’s Hazardous Waste Program. Biannually review the program.	All	<i>*SW, ES, MPCA</i>	\$150,000/yr.	\$100,000/yr.
33. <i>Habitat Corridors.</i> Support efforts to conserve, enhance and restore fish and wildlife habitat, when feasible. Implement one or more projects annually.	All	<i>*DNR, All</i>	\$100,000/yr.	\$10,000/yr.
34. <i>GIS Datasets.</i> Annually invest in the acquisition, development, and maintenance of GIS datasets, including the digital soil survey and parcel map. Utilize these datasets to make informed decisions regarding land use planning and water resource management.	All	<i>*GIS</i>	\$50,000/yr.	\$50,000/yr.
35. <i>Land Use Management.</i> Continue to implement the County’s adopted land use controls, including the Comprehensive Plan, floodplain, SSTS, shoreland, and solid waste ordinances. Biannually review language.	All	<i>*PZ, *ES, *SW, DNR, MPCA</i>	\$750,000/yr.	\$500,000/yr.
36. <i>Land Use Decisions and Ordinance Amendments.</i> Work with the Planning Commission and Board of Commissioners to ensure that land use decisions and ordinances are consistent with the Water Plan. Identify inconsistencies and update documents accordingly.	All	<i>*ES, *PZ</i>	\$10,000/yr.	\$10,000/yr.

GOAL 2: ENHANCE SURFACE WATER MANAGEMENT				
Action Step	Priority Watershed	Stakeholders *Indicates lead	Estimated Cost	
			Overall	County
Objective G: Ensure long-term agricultural production by maintaining and improving the public drainage system.				
37. <i>Public Drainage Systems.</i> Ensure that public drainage systems are operated and maintained in accordance with the State Drainage Law (M.S. Chapter 103E) and other applicable regulations, such as WCA. Continue to inspect and perform brush control on ditches once every three years.	All	*CB, *WD, ES	\$100,000/yr.	\$25,000/yr.
38. <i>Comprehensive Drainage Management Plan.</i> Pursue the development of a comprehensive drainage management plan for public drainage systems.	All	*CB, *WD	\$75,000/yr.	\$25,000/yr.
39. <i>Redetermination of Benefits.</i> Redetermine the benefits on drainage systems as requested.	All	*CB, *WD	T.B.D.	\$0/yr.
40. <i>Agricultural Studies.</i> Support studies related to agricultural impacts on water quantity and quality. Establish two local test sites.	All	*UME, *MDA, All	\$15,000/yr.	\$500/yr.
41. <i>Drainage Systems.</i> Work with the County Drainage Authority on abandoning or relocating public drainage systems in conjunction with wetland restorations. Target impaired waters.	All	*ES, *CB, *WD, SWCD, USFWS	\$50,000/yr.	\$50,000/yr.

Objective G Continued...

Objective G Continued...

Action Step	Priority Watershed	Stakeholders <i>*Indicates lead</i>	Estimated Cost	
			Overall	County
42. Drainage BMPs. Cooperatively work with the Drainage Authority to incorporate water quantity/quality-related BMPs into the operation of public drainage systems. For example, work to establish/enhance five side inlets annually.	All	<i>*CB, *ES, *SWCD, *WMLO</i>	\$250,000/yr.	\$10,000/yr.
43. Alternative Drainage Practices. Provide educational, technical, and financial assistance, as available, to landowners for the demonstration of alternative drainage practices, such as blind intakes, that replace conventional open tile intakes. Establish two demonstration sites.	All	<i>*SWCD, *WMLO, ES, UME, MDA</i>	\$25,000/yr.	\$5,000/yr.
44. Pattern Tiling. Better understand the effects of pattern tiling on surface water management. Work to establish a research/demonstration site.	All	<i>*UME, All</i>	\$5,000/yr.	\$2,500/yr.
45. BCWD Filtering Inlet Incentive. Provide financial assistance, as available, for establishing filtering inlets. Implement five sites.	Buffalo Creek	<i>*BCWD, ES, SWCD</i>	\$15,000	\$2,500

GOAL 2: ENHANCE SURFACE WATER MANAGEMENT

Action Step	Priority Watershed	Stakeholders <i>*Indicates lead</i>	Estimated Cost	
			Overall	County
Objective H: Manage surface waters to minimize Stormwater pollution and runoff.				
46. <i>Stormwater Management Plans.</i> Participate in the development and implementation of Comprehensive Stormwater Management Plans, identifying BMPs, potential retrofit opportunities, providing recommendations for coordination among LGUs, and identifying potential funding options.	All	*Cities, MPCA, ES, WMLO	\$25,000/yr.	\$5,000/yr.
47. <i>NPDES Stormwater Permit Requirements.</i> Provide educational assistance to landowners and contractors on NPDES stormwater permit requirements for construction activity. Update educational materials as they become available.	All	*MPCA, PZ, WMLO	\$5,000/yr.	\$500/yr.
48. <i>SWCD Stormwater Initiatives.</i> Provide technical and financial assistance to citizens on stormwater BMPs (i.e., rain gardens, bio-retention, etc.), and assist with proper implementation. Implement five projects annually.	All	*SWCD, WMLO	\$100,000/yr.	\$25,000/yr.
49. <i>Stormwater Storage.</i> Work with municipalities to utilize storage basins and holding ponds for runoff retention and water quality treatment.	All	*MPCA, ES, SWCD, Cities, WMLO	\$75,000/yr.	\$10,000/yr.
50. <i>Marsh Water Project.</i> Work with the City of Glencoe and the Buffalo Creek Watershed District to implement the Marsh Water Project to mitigate stormwater flooding.	Buffalo Creek	*BCWD, CB, ES, City of Glencoe, DNR	\$225,000/yr.	\$2,500/yr.
51. <i>City of Lester Prairie.</i> Support the City of Lester Prairie’s efforts to obtain Clean Water Funding for stormwater treatment and/or surface water management projects.	South Fork Crow River	*City of Lester Prairie, ES, WMLOs, SWCD	\$50,000/yr.	\$500/yr.

GOAL 2: ENHANCE SURFACE WATER MANAGEMENT

Action Step	Priority Watershed	Stakeholders <i>*Indicates lead</i>	Estimated Cost	
			Overall	County
Objective I: Preserve and Restore Wetlands and other Water Retention Opportunities.				
52. <i>WCA Administration.</i> Continue to locally administer the Minnesota Wetland Conservation Act. The entire County shall be identified as a high priority area for wetland restorations.	All	<i>*ES</i> , SWCD, BWSR, DNR, USACE	\$50,000/yr.	\$25,000/yr.
53. <i>Wetland Restorations.</i> Assess the potential for wetland restoration. Pursue installation with voluntary landowners, target impaired waters, and implement one project annually.	All	<i>*SWCD</i> , USFWS, DNR WMLO, NRCS	\$75,000/yr.	\$5,000/yr.
54. <i>Preservation and Restoration Programs.</i> Provide educational and technical assistance to landowners regarding State and Federal programs to preserve and restore wetlands, including drained lakebeds. Target landowners near impaired waters.	All	<i>*SWCD</i> , <i>*USFWS</i> , WMLOs, BWSR, DNR,	\$30,000/yr.	\$15,000/yr.
55. <i>Wetland Banking.</i> Provide information to landowners who inquire about the State wetland-banking program. Annually review the State’s requirements.	All	<i>*ES</i> , BWSR, SWCD	\$2,000/yr.	\$1,000/yr.
56. <i>SWCD Wetland Initiative.</i> Assist the USDA with the wetland provisions within the Farm Bill, including Swampbuster and 1026 drainage requests.	All	<i>*SWCD</i>	\$20,000/yr.	\$5,000/yr.

GOAL 3: PROTECT GROUNDWATER SUPPLIES

GOAL 3: PROTECT GROUNDWATER SUPPLIES				
Action Step	Priority Watershed	Stakeholders * <u>Indicates lead</u>	Estimated Cost	
			Overall	County
Objective J: Protect Groundwater from Contamination by implementing Best Management Practices.				
57. BMP Program. Provide educational, technical and financial assistance, as available, to landowners for the implementation of groundwater protection BMPs, including the proper decommissioning of wells and storage tanks and correct application of pesticides and other chemicals. Implement two projects annually.	All	* <u>MDH</u> , DNR, MPCA, WMLOs All	\$50,000/yr.	\$10,000/yr.
58. Wellhead Protection. Participate in the preparation and implementation of wellhead protection plans for public water suppliers.	All	* <u>Cities</u> , * <u>MDH</u> , ES, SWCD, WMLOs	\$75,000/yr.	\$1,500/yr.
59. Pesticide Container Collection. Continue an empty pesticide container collection day, contingent upon the availability of funding.	All	* <u>SW</u> , ES, MDA, UME	\$5,000/yr.	\$5,000/yr.
60. Solid Waste Management. Provide educational assistance to landowners to discourage the burning and burying of solid waste. Review educational materials annually and target 5,000 households.	All	* <u>SW</u> , ES, PZ, MPCA, DNR	\$15,000/yr.	\$1,500/yr.
61. Abandoned Wells. Continue to provide information to the public on how to identify, locate and seal abandoned wells. Provide financial assistance and create an abandoned well inventory, as funds are available. Target sealing five abandoned wells annually.	All	* <u>SWCD</u> , <u>ES</u> , <u>MDH</u>	\$15,000/yr.	\$5,000/yr.

GOAL 3: PROTECT GROUNDWATER SUPPLIES

Action Step	Priority Watershed	Stakeholders <u>*Indicates lead</u>	Estimated Cost	
			Overall	County
Objective K: Ensure Adequate Groundwater Supplies for Multiple Uses.				
62. <i>Precipitation Monitoring.</i> Continue monitoring and increase the number of volunteer rain gauge readers that report to the State Climatology Office to one per township.	All	* <u>SWCD</u> , ES, WMLO, DNR	\$1,000/yr.	\$250/yr.
63. <i>Ground Water Level Monitoring.</i> Cooperatively work with partners on groundwater permitting and monitoring efforts. Annually review data and adjust BMP programs accordingly.	All	* <u>DNR</u> , WMLOs	\$5,000/yr.	\$750/yr.
64. <i>Hydrogeologic Atlas.</i> Learn how to best use hydrogeologic information for the County to evaluate the impact of land use activities on ground water supplies. Biannually host a workshop (2014, 2016).	All	* <u>County</u> , * <u>MGS</u> , DNR WMLOs	\$7,500/yr.	\$2,500/yr.
65. <i>Water Conservation Program.</i> Apply for funds to assist with creating a Water Conservation Program, with low-flow conservation kits and establishing a county-wide Drought Contingency Plan (by 2015).	All	* <u>ES</u> , SWCD, MDH, Cities, DNR	\$5,000/yr.	\$2,500/yr.

GOAL 4: EFFECTIVE PLAN ADMINISTRATION & COORDINATION

Action Step	Priority Watershed	Stakeholders <i>*Indicates lead</i>	Estimated Cost	
			Overall	County
Objective L: Expand our knowledge and partnerships on identifying and addressing key water planning issues.				
66. <i>Water Quality Monitoring/Studies.</i> Cooperatively work with partners to continue and expand surface and ground water quality monitoring and studies. Annually review the data and adjust BMP programs accordingly.	All	<i>*MPCA,</i> <i>*WMLO,</i> All	\$100,000/yr.	\$5,000/yr.
67. <i>Surface Water Flow Monitoring.</i> Cooperatively work with partners to continue and expand surface water flow monitoring efforts. Annually review the data and adjust BMP programs accordingly.	All	<i>*DNR,</i> <i>*USGS,</i> <i>*WMLOs,</i> ES	\$5,000/yr.	\$1,000/yr.
68. <i>CROW BMP Implementation and Education Initiatives.</i> Cooperatively work with the Crow River Organization of Waters (CROW) to implement BMP implementation and education initiatives to reduce Fecal coliform, E.coli, turbidity, dissolved oxygen and chloride in North and South Fork Crow River Watersheds. Projects include: Lakeshore/Streambank Stabilization, Wetland Restorations, Rain Gardens, Lakeshore Naturalizations, Filterstrip/Grass/Riparian Buffers, Windbreaks, Sediment Basins, Grass Waterways, CRP/RIM Incentive Payments, Social Media, Newsletters and workshops – Implement six projects annually, create quarterly electronic newsletters, update website/facebook page weekly and provide annual workshop.	South Fork Crow River Watershed	<i>*CROW,</i> ES WMLOs	\$120,000/yr.	\$1,000/yr.

GOAL 4: EFFECTIVE PLAN ADMINISTRATION & COORDINATION

Action Step	Priority Watershed	Stakeholders <i>*Indicates lead</i>	Estimated Cost	
			Overall	County
Objective M: Provide and participate in Outreach and Educational efforts on key water planning issues.				
69. <i>Partner Meetings.</i> Hold and/or attend meetings with partners to discuss water resource management issues and potential partnership opportunities. Annually invite key stakeholders to a water plan meeting.	All	* <u>ES</u>	\$2,000/yr.	\$2,000/yr.
70. <i>Joint Powers Board Membership.</i> Continue membership in water plan stakeholder’s Joint Powers Boards.	All	* <u>CB</u> , ES, CROW, HICJPB	\$6,000/yr.	\$6,000/yr.
71. <i>Runoff Education.</i> Implement educational efforts to control or reduce the effects of accelerated runoff from urban, industrial and agricultural areas. Include in newsletters twice a year.	All	* <u>SWCD</u> , ES, MPCA, NRCS, Cities, WMLOs	\$50,000/yr.	\$30,000/yr.
72. <i>SSTS Education.</i> Provide information to the public on proper SSTS design, installation, operation, and maintenance. Include information in annual workshops, news articles, and stakeholder mailings.	All	* <u>ES</u> , UME, MPCA, WMLO	\$25,000/yr.	\$10,000/yr.
73. <i>SWCD Outreach Initiatives.</i> Assist the County with providing the educational components of the Water Plan by providing one-on-one education, developing E-newsletters, and coordinating the 4 th Grade Nature Field Day event.	All	* <u>SWCD</u> , WMLOs	\$25,000/yr.	\$25,000/yr.
74. <i>Water Conservation.</i> Locate and provide water conservation-related educational materials to industry, homeowners and schools. Target one topic and media source annually.	All	* <u>ES</u> , UME	\$15,000/yr.	\$5,000/yr.
75. <i>High Island Creek Watershed Education.</i> Create quarterly newsletters, assist with manure management workshops and host manure management field days.	High Island Creek Watershed	* <u>High Island Creek Joint Powers Board</u>	\$1,000/yr.	\$250/yr.

GOAL 4: EFFECTIVE PLAN ADMINISTRATION & COORDINATION

Action Step	Priority Watershed	Stakeholders * <u>Indicates lead</u>	Estimated Cost	
			Overall	County
Objective N: Properly Administer the Water Plan to help ensure it achieves success.				
76. <i>Local Water Management Coordinator.</i> Maintain the County Local Water Management Coordinator position.	All	*CB, * <u>ES</u>	\$5,000/yr.	\$5,000/yr.
77. <i>Additional Funding Sources.</i> Pursue additional funding sources, such as grants, in order to fund the implementation of initiatives. Seek partnerships and cooperative agreements to finance initiatives, when appropriate. Annually review projects and funding needs.	All	* <u>ES</u> , * <u>SWCD</u> , * <u>WMLO</u> , <u>DNR</u> , <u>BWSR</u>	\$10,000/yr.	\$2,500/yr.
78. <i>Funding Opportunities.</i> Provide information to landowners on available funding sources for water resource management activities and projects. Include on website, news articles, and newsletters.	All	* <u>ES</u> , * <u>SWCD</u> , * <u>WMLOs</u> , <u>DNR</u> , <u>MPCA</u>	\$2,000/yr.	\$1,000/yr.
79. <i>Water Planning Taskforce Meetings.</i> Hold semi-annual Water Planning Taskforce meetings to discuss issues, review funding requests, and implement the Water Plan.	All	* <u>ES</u>	\$1,000/yr.	\$1,000/yr.
80. <i>SWCD Administration.</i> Continue to be fiscally responsible while providing quality service to McLeod County’s citizens; work with the County to ensure the County’s General Levy adequately supports conservation needs; seek grants, partnerships, and provide adequate staffing. Quarterly review efforts and make adjustments accordingly.	All	* <u>SWCD</u>	\$50,000/yr.	\$50,000/yr.
81. <i>Water Plan Update.</i> Update the County’s water plan action steps prior to the County’s water plan expiring in 2018.	All	*ES, WPTF, CB	\$2,500	\$2,500

Chapter Four: Water Plan Administration

Chapter Four contains information on administering the Water Plan, including plan coordination, implementation, schedule, role of the County in implementation, role of other agencies in implementation, recommended changes to State programs, intergovernmental conflicts/resolution process, major plan amendment procedure, minor plan amendment procedure and general information.

A. Plan Coordination

Managing McLeod County's water resources involves cooperation with many local, State and Federal agencies, as well as private citizens and special interest groups. For any water planning activity to be successful, a well-coordinated effort is needed. McLeod County is committed to working with each of these entities to ensure proper management of its water resources.

Throughout the Water Plan, County departments, local government units, special interest groups, and State and Federal agencies are listed pertaining to specific water planning topics. In addition, each Action Step found in Chapter Three under the County's Water Plan Goals and Objectives, identifies the potential stakeholders involved with implementing each Action Step listed. It is hoped that the valuable cooperation that has been established in the past years will continue and be enhanced through properly implementing this Water Plan.

B. Implementation Program

McLeod County will ensure coordination and implementation of its Comprehensive Local Water Plan through its established Water Plan Task Force. The Task Force will meet regularly to review progress, identify emerging problems, discuss opportunities, and to continue to direct the overall implementation of the Water Plan. The Task Force will be supported by the County Board appointed Water Plan Coordinator. The Coordinator will administer the implementation portion of the Plan, coordinate the Task Force activities, write grant proposals, prepare annual work plans and reports, and other activities as needed.

C. Implementation Schedule

Coordination of Water Plan activities will commence with the County Board adoption of the Plan. These activities will be conducted throughout the planning period identified as 2013 – 2023. Chapter Three of the Water Plan shall serve as the County's Water Plan Implementation Schedule, and shall cover the first five years of the Plan (2013-2018). By the end of 2018, Chapter Three will need to be updated to cover the years 2018-2022.

D. Types and Sources of Water Plan Funds

The County recognizes the importance of comprehensive local water planning and the key role the County, township and city government must play in water planning decisions that impact water resources. The Water Plan's Goals, Objectives and Action Steps are a reflection of the water resource concerns in the County. Implementation will be based on current needs, funding and availability of staff. Consideration will be given to changes in State initiatives and regulations.

The annual work plan provides basic information on the actions intended to be implemented. The County realizes that completion of all Goals and Objectives requires staff and funds beyond the County's budget. It is also understood that State funding cannot provide the funding for all Goals and Objectives, therefore total stakeholder cooperation will be required. The County, through various sources, will pursue outside funding opportunities as they become available.

To properly fund the implementation of the Water Plan and related activities, McLeod County will rely on a combination of the following types and sources of funding:

- **Natural Resource Block Grant Funds**, including but not limited to:
 - ❖ ***MPCA Feedlot Permit Program*** - This program was created to protect water quality by improving animal waste treatment systems on feedlots. A county feedlot program is established by transferring of regulatory authority from the Minnesota Pollution Control Agency to the county. This transfer of authority is granted by statute and it allows the Minnesota Pollution Control Agency to "delegate" administration of certain parts of the feedlot program to counties. County feedlot programs have the responsibility for implementing state feedlot regulations including: registration; permitting; inspection; education and assistance; and compliance follow-up.
 - ❖ ***Local Water Management Program*** - The Comprehensive Local Water Management Program is a voluntary program that requires counties to use local task forces to develop and implement water plans based on their priorities.
 - ❖ ***DNR Shoreland Management Program*** - the State Shoreland Management Program was established to promote the wise development of shorelands in order to preserve and enhance the quality of surface waters, preserve the economic values of shorelands, and ensure the wise use of water and related resources.

- ❖ **MPCA Subsurface Sewage Treatment Systems (SSTS)** - Based on 1997 changes to Minnesota Statutes, all counties are required to pass ordinances regulating Individual Sewage Treatment Systems countywide. In return, McLeod County receives money annually to implement the SSTS Program.
- ❖ **Wetland Conservation Act (WCA) Implementation** - The purpose of the Wetland Conservation Act (WCA) is to maintain and protect Minnesota's wetlands and the benefits they provide. The Board of Water and Soil Resources requires that under this grant program, “a county must agree to transfer a minimum of \$5,000 to the Soil and Water Conservation District for the implementation of Wetland Conservation Act activities or a greater amount as agreed upon by the County and the SWCD.”
- **State, Local, and Federal Grants** – numerous grant funds and programs are made available to implement local water plan or related initiatives, including but not limited to Minnesota’s Clean Water Fund.
- **Local Governmental Unit (LGU) Funds/In-Kind** – Some water planning initiatives will require funds spent by the various LGUs involved. This will include cities, townships, and watershed districts, along with McLeod County. Numerous grant programs count the time spent by LGU representatives as an In-Kind expense.
- **McLeod County Staff** – McLeod County will continue to maintain a trained staff to properly implement the various Water Plan initiatives. This expense is normally considered as a cash contribution towards implementing various State and Federal Grant Programs.
- **Landowner Expenses** – Although many Water Plan Action Steps can be completed at no cost to landowners, some projects may require landowners to contribute a portion of the overall costs.
- **Stakeholder Participation** – The various stakeholders involved with implementing the Water Plan will also contribute funds and staffing, as available.

E. Recommended State Cooperation

In order to implement the goals and objectives set forth in the McLeod County Water Plan, continued cooperation between the County and various State agencies is necessary. In an effort to increase coordination in this effort, the County makes the following recommendations:

1. Counties should continue to be notified of State agency program changes and the availability of funding; and
2. Data collected by State agencies should be readily shared with the County and other water plan stakeholders to avoid duplicative efforts; and
3. State agencies should continue to provide local and/or regional staff to assist local officials with agency programs; and
4. Fees collected at the County level should be allowed to remain within the County to administer and implement water-related programs; and
5. An annual listing of State agency staff that are assigned to water management planning should be created to facilitate increased coordination between local officials and agency staff; and
6. State agencies should provide greater flexibility to counties in setting annual work plan priorities. Priorities should be based upon current needs, funding, availability of staff and changes in State initiatives and regulations.

F. Intergovernmental Conflicts/Resolution Process

In the development of this Plan, there were no intergovernmental conflicts that arose. In the event of an intergovernmental conflict, the McLeod County Board of Commissioners shall request the McLeod County Water Plan Task Force to intervene and informally negotiate resolution of the conflict. If the Task Force does not resolve the conflict, the County shall petition the Board of Water and Soil Resources (BWSR) for a contested case hearing.

G. Water Plan Amendment Procedure

The McLeod County Comprehensive Local Water Plan is intended to extend through the year 2023. If the County need to revise the Plan for any reason prior to a new Plan being developed, the County will need to follow Minnesota Statute 103B.314, Subdivision 6. In summary, copies of the proposed amendments (along with the date of the public hearing) need to be sent to BWSR, and local governmental units, and the State agencies for review. After the public hearing, BWSR must approve the amendments and copies shall be sent to the various stakeholders identified by State Statute.

H. Water Plan Key Stakeholders

The success of the County's Water Plan depends upon the collaborative efforts of multiple water plan stakeholders. To highlight the significance of this, the McLeod County Water Plan Task Force created a separate goal areas in Chapter Three to have “***Effective Plan Administration and Coordination.***” This section briefly outlines some of McLeod County's key Water Plan Stakeholders, including a link to the stakeholder's current website.

McLeod County Environmental Services Department (ES)

The Environmental Services Department is responsible for the administration and education of environmental programs within McLeod County. Program responsibility includes but is not limited to such things as the County Comprehensive Water Plan, County Feedlot Program, County Septic System Program, and the Minnesota Wetland Conservation Act. The Environmental Services Director is also the County Ditch Inspector for Districts 2, 3, 4, and 5. For more information, visit the County's website:

www.co.mcleod.mn.us

McLeod County Soil & Water Conservation District (SWCD)

McLeod SWCD is a local unit of government established under state law to carry out conservation programs at the local level. The SWCD works with McLeod County landowners to help them manage and protect land and water resources on all private land and also assist with a variety of natural resource concerns. The McLeod SWCD is co-located with the ***USDA Natural Resource Conservation Service (NRCS)***. Both the SWCD staff and NRCS staff work cooperatively on Federal Farm Bill Programs.

<http://www.mcleodswcd.org/>

Natural Resource Conservation Service (NRCS)

The Natural Resources Conservation Service (NRCS) draws on a long history of helping people help the land. For more than 75 years, NRCS and its predecessor agencies have worked in close partnerships with farmers and ranchers, local and state governments, and other federal agencies to maintain healthy and productive working landscapes. The main connection to the Water Plan is the NRCS administers many of the Farm Bill's conservation initiatives. The McLeod County NRCS is co-located with the McLeod County SWCD. For more information, visit the following website:

<http://www.mn.nrcs.usda.gov/>

McLeod County Lake Associations

A lake association is an organized group of people who have come together because of their common interest in a specific lake. Lake associations serve as an organized voice of their members to township and county government and are often a watchdog for enforcement of local ordinances. Associations may also monitor the condition of a lake, develop lake management plans, educate shoreland property owners about individual and collective actions to protect a lake and provide volunteers to assist in lake and watershed projects. They may also work with the Department of Natural Resources (DNR) to improve fish habitat or fish stocking, get permits for aquatic plant removal, maintain lake accesses or implement lakeshore stabilization projects. Listed below are the three lake associations that have been formed in McLeod County.

- *Belle Lake Association*
- *Winsted Lake Association*
- *Lake Marion Association*
- *Hardy Lake Association*
- *High Island Lake Association*

Watershed Organizations

The Map following the Table of Contents shows there are three major watersheds in McLeod County: North Fork Crow River, South Fork Crow River, and the High Island Creek Watersheds. There are two Watershed Districts which cover portions of these areas.

Buffalo Creek Watershed District (BCWD) - The Buffalo Creek Watershed District is located in south-central Minnesota, approximately 30 miles west of the Minneapolis-St. Paul Metropolitan Area. The Buffalo Creek Watershed is the southern most subwatershed of the larger South Fork of the Crow River Watershed, which eventually outlets to the Mississippi River near Dayton, Minnesota. There are five counties, six cities and twenty-eight townships that are wholly or partially encompassed within the District. The overwhelming majority of the District's land is located within McLeod and Renville Counties (93%). For more information on BCWD, please visit their website:

<http://www.bcwatershed.org/>

High Island Creek Watershed Project – The High Island Creek Watershed is located in south central Minnesota and is a part of the Lower Minnesota Watershed, a major sub-basin of the Minnesota River Basin. High Island Creek Watershed spreads out across 153,222 acres in three counties: Sibley (66% area), McLeod (23%), and Renville (11%). Its topography is flat to gently rolling in the western two-thirds of the watershed and steeply sloped in the eastern one-third. High Island Creek Watershed is considered by many as one of the most polluted watersheds in the Minnesota River Basin, suffering from high levels of fecal coliform bacteria, total phosphorus, nitrate-nitrite nitrogen, and total suspended solids. The High Island Creek Watershed Project is currently working towards reducing levels of bacteria within the watershed by offering a diverse selection of cost share incentives along with a number of workshops/field days. Current practices available include open intake alternatives, manure application calibrations, structural practices that reduce feedlot and runoff, vegetative practices and septic system upgrades.

High Island Creek Watershed District (HICWD) – The High Island Creek Watershed District was established in 1957, covering 245 square miles of Sibley, McLeod, and Renville Counties. Nearly two full townships within the District are located within McLeod County (Round Grove and Penn Townships). The District helps support the Watershed Project.

Crow River Organization of Waters (CROW) – The CROW was formed in 1999 as a result of heightened interest in the Crow River. Portions of ten counties in Central Minnesota make up the Crow River Watershed, which is one of the major tributaries of the Mississippi River Basin. The effects of rapid urban growth, new and expanding wastewater facilities and erosion from agricultural lands have been common concerns of many citizens, local, state and regional governments in Central Minnesota. As a result, many groups began meeting in 1998 to discuss management of the Crow River basin consisting of the North Fork and South Fork. A Joint Powers Agreement has been signed between all ten of the Counties with land in the Crow River Watershed. The CROW Joint Powers Board has one representative from each of the County Boards who signed the agreement, which includes Carver, Hennepin, Kandiyohi, McLeod, McLeod, Pope, Renville, Sibley, Stearns and Wright Counties. The CROW is currently offering financial assistance to residents and landowners of the Crow River Watershed for the installation of variety practices aimed at improving water quality in the Crow River. The CROW can offer up to 75% cost share on BMP practices. The 25% left can come from examples such as lake associations, land owner, city, and in-kind (labor and equipment). There are also low interest loans (3%) for upgrades of non compliant septic systems are available in portions of Sibley, McLeod, McLeod, Renville, Wright, and Kandiyohi Counties. For more information, visit CROW's website:

<http://www.crowriver.org/>

State Agencies

Many of Minnesota's State Agencies are involved with some form of environmental protection efforts, especially when it pertains to protecting Minnesota's water resources. A brief synopsis of their major water planning efforts are summarized below.

Board on Water and Soil Resources (BWSR) - In 2012, the Minnesota Board of Water and Soil Resources is celebrating its 25th anniversary. BWSR was created in 1987, when the Legislature combined the Soil and Water Conservation Board with two other organizations with local government and natural resource ties: the Water Resources Board and the Southern Minnesota Rivers Basin Council. Upon inception, its membership included 17 members: representing soil and water conservation districts; watershed management organizations, counties, citizen members, agency members (University of Minnesota Extension Service, the Minnesota Department of Natural Resources, the Minnesota Department of Agriculture, the Minnesota Department of Health, and the Minnesota Pollution Control Agency). BWSR provides oversight on Water Plans. For more information, visit BWSR's website:

<http://www.bwsr.state.mn.us>

Minnesota Department of Natural Resources (DNR) – The DNR is a key water plan stakeholder in many ways. They assist with monitoring ground and surface water quantity, they are the permitting agency for water appropriations, and they are the main agency working with preventing the spread of Aquatic Invasive Species. In addition, they work with a variety of stakeholders, including the general public, on providing a vast amount of water resource education. For more information, visit the DNR website:

<http://www.dnr.state.mn.us/water/index.html>

Minnesota Pollution Control Agency (MPCA) - The Minnesota Pollution Control Agency helps protect our water by monitoring its quality, setting standards and controlling what may go into it. They assist with water surface and groundwater quality monitoring, stormwater management, municipal wastewater permitting, identifying Impaired Waters, and animal feedlot registration and enforcement. They also provide a vast amount of technical and educational assistance on Best Management Practices (BMPs) related to water quality protection and land use practices. For more information, visit MPCA's website:

<http://www.pca.state.mn.us/index.php/water/index.html>

Minnesota Department of Health (MDH) – The Minnesota Department of Health is the primary State agency involved with monitoring and protecting ground and drinking water supplies. They have a vast amount of ground water quality data, and take the lead in developing Wellhead Protection Plans for public water suppliers. They also provide a lot of information on the importance of sealing abandoned wells and testing household wells for a variety of contaminants. For more information on MDH’s activities, visit MDH’s website:

<http://www.health.state.mn.us/macros/topics/environment.html>

Minnesota Department of Agriculture (MDA) – As a leading agricultural state with more surface waters than any other of the 48 contiguous states, and an abundance of clean drinking water, Minnesota is committed to helping farmers, homeowners, and industry protect these water resources. The MDA is responsible for or involved in many water quality programs and initiatives. These include but are not limited to the following:

- Agricultural Best Management Practices Loan Program. A low interest loan program run by the MDA that helps finance water quality practices.
- Minnesota Clean Water Legacy Act. The MDA currently oversees several research and other projects aimed at making cleanup efforts more effective.
- Comprehensive Groundwater Protection Act of 1989. The MDA regulates most matters relating to pesticides and fertilizers.

The MDA has also developed the following website to assist with County Water Plans:

<http://www.mda.state.mn.us/en/protecting/waterprotection/waterplanning.aspx>

NOTE: *There are numerous other Water Plan Stakeholders who are important to McLeod County. This Section of the Water Plan was included to highlight some of the major ones listed in the Action Steps found in Chapter Three.*