

Mower County
Local Water Management Plan
2006 – 2015

Implementation Plan Updated In 2010

Acronyms and Abbreviations

BMP-	Best Management Practice
BWSR-	Minnesota Board of Soil & Water Resources
CREP-	Conservation Reserve Enhancement Program
CRP-	Conservation Reserve Program
CRWD-	Cedar River Watershed District
CWI-	County Well Index
DNR-	Minnesota Department of Natural Resources
EQIP-	Environmental Quality Incentive Program
ITPHS-	Imminent Threat to Public Health & Safety
LWM-	Local Water Management
MCEH-	Mower County Environmental Services
MDH-	Minnesota Department of Health
MPCA-	Minnesota Pollution Control Agency
NOAA-	National Oceanic and Atmospheric Administration
NRBG-	Natural Resources Block Grant
NRCS-	Natural Resource Conservation Service
Reach-	Extends from one significant tributary to another and is typically less than 20 miles in length
SEWWI-	Southeastern Minnesota Wastewater Initiative
SWCD-	Mower County Soil & Water Conservation District
TCWD-	Turtle Creek Watershed District
TMDL-	Total Maximum Daily Load
WCA-	Wetland Conservation Act Administration
WREP-	Wetland Reserve Enhancement Program
WRP-	Wetland Reserve Program

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1.0 Executive Summary

1.1 Location and History

Mower County is situated in southeastern Minnesota approximately 100 miles south of Minneapolis, 362 miles northwest of Chicago, 381 miles northeast of Kansas City and 197 miles east of Sioux Falls, South Dakota. It is bordered on the north by Dodge and Olmsted Counties, Minnesota; on the east by Fillmore County, Minnesota; on the west by Freeborn County, Minnesota; and the northern border of Iowa on the south. It contains 449,920 acres or 703 square miles of rich, productive agricultural land. Austin, a city of approximately 23,900 people located in the west central section of the county, is the county seat. Thirteen smaller cities serve as trade centers for the rural population.

Historically, two major factors are responsible for the growth of the Mower County economy. The first is the rich agricultural land and good agricultural climate, which is conducive to the growing of wheat and later corn, soybeans and other crops. More recently the highly productive soil made it easy to grow livestock feeding crops which in turn fostered the growth of livestock raised in the area. The other factor which fostered the early growth of the Mower County community was the coming of the railroads in the late 1800's. The railroads enabled the farmers to market their products to other than local markets. High agricultural productivity of the area and the ability to market these crops via the good railroad system fostered the growth of the second largest industry in the county – the meat packing industry.

Although a few additional industries have developed in the county, there have not been many and as a result the Mower County economy has been dominated by agriculture and meat packing since its early development. Mower County took its first step in water planning on November 23, 1987, when the County Board established by resolution the Mower County Water Policies Resource Policy Committee. The Committee included representatives of the City of Austin, Mower County Board of Commissioners, Austin Utilities, Township Association, County Planning Commission, City Planning Commission and citizens. The committee met many times during this period as it developed its Comprehensive Water Plan and Action Implementation Plan. The County held their public information meeting on March 15, 1988. Citizen comments and concerns were also requested.

1.2 Purpose of the Local Water Management Plan

The purpose of this updated Local Water Management (LWM) Plan for Mower County is:

- To focus efforts on identified existing and potential priority concerns and/or opportunities for protection, management, and development of water resources and related land resources in the county.
- To continue to develop, update, and implement a plan of action to promote sound management of water and related land resources in the county through the use of Best Management Practices.
- To intensify work aimed at effective environmental protection and management in the county by addressing existing and potential priority concerns on a watershed basis.

1.3 Description of Priority Concerns

Through the Water Plan update process, 5 priority concerns were identified to focus water management efforts in 2006 through December 31, 2015; Soil Erosion, Flooding, TMDL, Pollution Management and Groundwater. The process through which these priority concerns were identified is further detailed in the Priority Concerns Scoping Document contained in Appendix A.

1.4 Summary of Goals and Actions

The implementation portion of the plan was updated in 2010. Additions were made to the action items to document the actions that were accomplished from 2006-2010. Specific action items were added to outline goals for the next five years. The following is a summary of goals and actions to be taken for the five identified priority concerns:

- Soil Erosion – Protect our surface water and farm land from excessive soil erosion.
- Flooding – Identify all potential properties that might be at risk for flooding.
- TMDL – To work towards bringing Mower County rivers, streams and lakes into compliance with TMDL requirements.
- Pollution Management – To protect surface and ground water resources from pollution sources.
- Groundwater – To protect ground water resources by determining which hydrologic units are determined to be vulnerable due to geography or geology and implement protection strategies.

In the process of the LWM plan update, Mower County examined the Turtle Creek Watershed, Cedar River Watershed District, other counties, and State Agencies to ensure consistency with other water resource management efforts.

1.5 Consistency of the Plan with Other Pertinent Local, State & Regional Plans

The Mower County LWM plan fits well as a customized application of the Pollution Control Agency's (PCA) recently completed Lower Mississippi River Basin Water Quality Plan.

The Turtle Creek Watershed District revised their overall plan in 2004. Major needs or issues of concern from the plan focus on: 1) Permit Requirement; 2) Criteria for Reviewing Permit Applications; and 3) Enforcement Powers of Managers. Additional cooperation between the County and Turtle Creek Watershed is expected due to the proposed BWSR grant to study flooding, etc. in Mower County, Freeborn County and Steele County.

The Cedar River Watershed District was established in 2007. The CRWD is charged with reducing flood damage and addressing water quality concerns. The District has set a goal of reducing flows through the City of Austin by 20%. The District is also addressing area needs of Erosion and sediment control, Wetlands, Natural Resources, Recreation, Habitat, Shoreland Management, Groundwater, Education and Public Involvement.

1.6 Recommended Amendments to Other Plans

Mower County does not see the need for any amendment to other plans and official controls.

2.0 Soil Erosion

Ninety percent of the land in Mower County is used for agriculture. The County ranks 10th and 13th in the State for corn and bean production, making much of the land vulnerable to erosion due to the planting of row crop. As a result, our streams and ditches see high sediment loads.

Mower County has 947.5 miles of streams. Land cover within 100 feet of those streams is 60% row crop, 32% vegetated and 8% other, according to DNR satellite imagery.

Unless conservation practices that include erosion control and buffers along our surface waters are implemented, it is likely that soil loss through water erosion will increase. Eighty thousand acres in the county have the potential of eroding greater than the tolerable level. There are also areas that have existing practices that are in need of repair or a complete overhaul.

The Cedar River Study conducted by the County in 2000-2001 showed total suspended solids (TSS) levels were in excess of state and federal water quality standards. Monitoring of the Root and Upper Iowa Rivers has also found TSS results in excess of standards.

Goal: Protect our surface water and farm land from excessive soil erosion.

2.1 Objective

Educate the public about soil erosion and enforce the Mower County Soil Erosion Ordinance.

2.1.1 Action/Implementation

Develop an educational strategy for informing landowners/operators of the soil loss ordinance.

Results: The soil erosion ordinance was approved in 1992. The ordinance has been in place and has proved to be very successful. The program is regulatory. However, it serves more as an educational tool for encouraging prudent land use activities. Through one on one contact with the producers and newsletter articles, the ordinance has served as a well supported initiative and educational tool for keeping soil on the land.

2.1.2 Action/Implementation

Continue to work with farmers with implementing and enforcing the soil erosion ordinance program to achieve acceptable soil loss goals.

Partners: SWCD, Environmental Services, NRCS, BWSR, Landowners

Timeline: 2010-2015 **Cost:** \$7,500/year

2.2 Objective

Educate the public of best management practices in controlling soil erosion.

2.2.1 Action/Implementation

Implement a marketing/education initiative to inform landowners of best management practices for controlling erosion.

Results: Our marketing program has centered on the relationship we have producers. 1,119 contacts have been made to educate producers on best management practices on their farm. Working with the producers on a project has led to many other opportunities for them. The SWCD, County and Watershed Districts web site, newsletters, educational workshops for livestock producers and farm bureau, participating in “Breakfast on the Farm” with Farm Bureau members every year and fair booth yearly has provided information on BMPs.

Partners: SWCD, Environmental Services, NRCS, BWSR, CRWD, TCWD, Landowners

Timeline: 2010-2015 **Cost:** \$5,000/year

2.2.2 Action/Implementation

Inform landowners of best management practices for controlling erosion, utilizing the MDA’s Conservation Funding Guide. This is a “one stop” resource for information regarding agricultural and natural resource conservation practices and payments. Promotion of Conservation Funding Guide will be accomplished through website, educational booth and landowner discussions.

Partners: MDA, SWCD, NRCS, Landowners

Timeline: 2010-2015 **Cost:** \$500/year

2.2.3 Action/Implementation

Promote and track the MPCA Citizen Stream Monitoring Program. Provide education and oversight locally for participants.

Partners: CRWD, SWCD, MPCA, Public Participants

Timeline: 2010- 2015 **Cost:** \$3,000/year

2.2.4 Action/Implementation

Collaborate with Cedar River Watershed District and Turtle Creek Watershed District on outreach and implementation initiatives to reduce soil erosion.

Partners: SWCD, CRWD, TCWD, BWSR

Timeline: 2010-2015 **Cost:**\$10,000/year

2.3 Objective

Recognize that water quality issues related to soil erosion come from watershed run-off. A “BMP Treatment Train” approach should be implemented on a watershed basis to reduce sedimentation to the County’s water bodies due to soil erosion. Numerous practices will be needed to achieve water quality goals.

2.3.1 Action/Implementation

Achieve a reduction in soil erosion in agricultural areas through different tillage methods. Encourage conservation tillage through Conservation Planning. Fact sheets on CRP contracts and one on one with landowners in discussing needed earthmoving erosion control practices.

Results: A transect survey is completed on a yearly basis as a part of the Cedar River TMDL for turbidity and the Root River Small Watershed program. The survey has been done for the last two years and will continue as a part of the monitoring for both watersheds.

*37 Contracts to implement Conservation Tillage on crop rotations
6,0060 Acres of cover crop were protected after early harvest for canning crops*

Partners: NRCS, SWCD, CRWD, TCWD, BWSR

Timeline: 2010-2015 **Cost:** \$5,000/year

2.3.2 Action/Implementation

Implement conservation practices that will reduce erosion and sediment loading to the streams and ditches.

Results: The Farm Assist program has been instrumental in local success with CRP, CREP, WRP/RIM. Restoring wetlands, buffering streams and ditches have been a priority. The marketing has been through our media, newsletters, but best of all is the sitting across the kitchen table and talking about opportunities for their land.

*630 acres of new CRP grassland cover through the "Back 40" habitat practice
147 Acres of wetland restoration and upland buffer through CRP wetland practices*

Partners: SWCD, NRCS, CRWD, BWSR

Timeline: 2010-2015 **Cost:** \$35,000 Farm Bill

2.3.3 Action/Implementation

Develop and implement a 5 year action plan for increasing riparian buffer and filter strip enrollment through Continuous CRP.

Results: 603 Acres of CRP Filter Strips were enrolled. 22 Acres of Riparian buffer enrolled

Partners: SWCD, NRCS, BWSR

Timeline: 2010-2015 **Cost:** \$4,000

2.3.4 Action/Implementation

Identify best management practices for treating soil erosion on agricultural land.

Results: Over the last 5 years erosion control practices that have been built includes the following.

154 waterways, 25 sediment basins, 17 windbreaks, 4 structures

Partners: SWCD, NRCS, BWSR

Timeline: 2010-2015 **Cost:** \$7,500/year

2.3.5 Action/Implementation

Promote State compliance on the agricultural shoreland buffers through education on the importance of buffers and promotion of programs to off-set crop loss income.

Partners: MCES, SWCD, CRWD

Timeline: 2010-2015 **Cost:** \$2,500/year

2.3.6 Action/Implementation

Determine all non-compliant landowners, using the GIS tool developed by Cannon River Watershed Partnership. Identify each individual that is out of compliance by 20' or more and target those individuals to work towards options that would bring them into compliance.

Partners: MCES, SWCD, CRWD

Timeline: 2010-2015 **Cost:** \$20,000/year

2.3.7 Action/Implementation

Continue to educate and implement the MPCA Stormwater program to reduce erosion on construction sites in municipalities and rural areas.

Results: In the last 5 years Mower County has introduced a caveat to their CUP process that requires a soil erosion control plan for new construction.

Partners: Environmental Services, SWCD

Timeline: 2010-2015 **Cost:** \$2,000/year

2.3.8 Action/Implementation

Create and enhance landscape with native vegetation plantings for soil stabilization and stormwater treatment. Local Ecotype plants will be used to the greatest extent possible.

Results: Native Buffer Planting

7 acre Cedar River Flood Plain Native grass planting

7 acre Todd Park Native grass planting

1 acre Native grass planting and 4,000 plant native flower establishment along Hormel Foods Parkway

1 acre native flower wetland enhancement project for Meadows community

Partners: SWCD, BWSR City of Austin, Izzak Walton League, Austin ACES, Austin High School, Public Partners

Timeline: 2010-2011 **Cost:** \$20,000

2.3.9 Action/Implementation

Administer the local Ag BMP loan program to provide producers with a means of obtaining equipment to apply conservation tillage practices.

Results: The Ag BMP Loan Program has allotted funds to acquire 39 pieces of conservation tillage equipment, valued at \$862,455.00. 14,711 acres of no till and conservation tillage have been enrolled in EQIP since 2006.

Partners: SWCD

Timeline: 2010-2015

Cost: \$150,000/year

3.0 Flooding

Mower County has approximately 950 miles of streams in the County. These streams range from small creeks draining a few acres, to rivers with large watersheds, including the Cedar, Upper Iowa, Little Cedar Rivers and Turtle Creek. Over the past fifty years Mower County has experienced numerous floods resulting in millions of dollars of property damage and even loss of life.

Flooding is a concern that the Mower County Water Planning Committee feels must be addressed. The following flood events have occurred in Mower County over the past 60 years:

Date	Crest Height
1945 (March)	16.70'
1950 (March 26)	17.80'
1961 (March)	17.10'
1962 (March)	17.20'
1965 (March)	18.87'
1978 (June 17)	19.10'
1978 (July 17)	21.90'
1983 (July 2)	18.20'
1988 (Oct.)	18.10'
1993 (April)	17.90'
1993 (August 15)	21.25'
1998 (July 6 & 7)	19.50'
2000 (May 18)	17.40'
2000 (June 1)	17.50'
2000 (July 10)	23.40'
2004 (Sept. 14 & 15)	24.80'

(This list is a compilation of data from the NOAA Website and the City of Austin and may not be all inclusive)

Mower County will continue to experience flooding. However, flood prevention and remediation measures can help to lessen the amount of property damage and the likelihood of loss of life. All residents of Mower County are impacted by floods due to the demand on emergency services and interruption of essential services. Therefore, the issues involving flooding need to be addressed in all of the county watersheds.

Goal: Protect life and property from future flooding.

In 2010, the American Rivers Organization listed the Cedar River as one of the Nation’s Most Endangered Rivers. This listing was in response to poor watershed planning and outdated flood management. The Cedar River and associated uplands start in Dodge County and flow southeast through Iowa before joining the Mississippi River. The listing has served as a “Rock Bottom” point for the basin but has provided water management planners an opportunity to make measureable strides towards improvement.

3.1 Objective

Provide education, collaboration and leadership on flood damage reduction initiatives

3.1.1 Action/Implementation

Develop and promote a watershed based approach to flood control planning and Implementation projects. Each tributary has different characteristics and various approaches needed to address high flows and flood damage. Incorporate planning, prioritization and implementation for specific sub watershed needs.

Partners: CRWD, SWCD,TCWD

Timeline: 2010-2015 **Cost:** \$100,000

3.1.2 Action/Implementation

Work with local elected officials to communicate the flood reduction needs for the County and provide input into legislation that will result in flood damage reduction.

Partners: SWCD, CRWD, TCWD,BWSR

Timeline: 2010-2015 **Cost:** \$1,000/Year

3.1.3 Action/Implementation

Coordinate with Cedar River Watershed, Turtle Creek Watershed and County officials to promote upland watershed management through best management practices.

Partners: SWCD, CRWD, TCWD,BWSR, Mower County

Timeline: 2010-2015 **Cost:** \$10,000

3.2 Objective

Identify all potential properties that might be at risk for flooding.

3.2.1 Action/Implementation

Map all properties that have flooding risks and develop a warning system that will provide property owners awareness of risks.

Partners: CRWD, TCWD, SWCD, City of Austin

Timeline: 2010-2015 **Cost:** \$150,000

3.2.2 Action/Implementation

Develop and implement comprehensive stream gauging throughout the County.

Results: CRWD has developed a comprehensive monitoring program over the last couple of years. We are currently gathering baseline information and then reevaluating what we need. 10 Sites

Partners: CRWD, TCWD, SWCD, Municipalities

Timeline: 2010-2015 **Cost:** \$20,000/Year

3.2.3 Action/Implementation

Complete a Hydraulic and Hydrology model that will provide an effective, efficient and essential tool for understanding flows in the Cedar River Watershed District.

Partners: CRWD, TCWD, SWCD, MPCA, Hormel Corp

Timeline: 2010-2012 **Cost:** \$100,000

3.2.4 Action/Implementation

Develop aerial photography inventory of flooding events in the Cedar River, Turtle Creek, Root River, and Upper Iowa Watersheds

Results: Cedar River Inventory was taken for 2010 flood event north of Austin. Photographs have been archived and for future analysis and modeling efforts.

Partners: SWCD, CRWD, TCWD, Mower County, DNR

Timeline: Flood Events **Cost:** \$1,000/Event

3.3 Objective

Develop a Comprehensive Surface Water Management Plan for the Upper Cedar River

Formalize an administrative process to manage surface water and gather and categorize surface water data in Upper Cedar River

3.3.1 Action/Implementation

Watershed Coordinator

Results: The Cedar River Watershed District was established in 2007 with administrative and technical services coming from the Mower SWCD. A watershed plan has been approved that incorporates a surface water management plan and flow rates goals in the Upper Cedar.

In 2005 the Mower SWCD received a challenge grant to develop a surface water management plan for the Upper Cedar above Austin. Barr Engineering was hired to model the area and determine what it would take to decrease the flow coming into Austin by 20%. It showed us priority areas and plans to look at the current infrastructure (roads and culverts) to control the flow. That plan has been put into action on the Hydrology and Hydraulic model development, Dobbins Creek Ag Watershed Project, grant applications and Red Rock Township road projects.

Partners: CRWD

Timeline: 2007 **Cost:** \$60,000

3.4 Objective

Develop and Implement a Best Use Land Policy for Mower County that would promote the establishment of wetlands and buffer strips that would reduce flooding and improve water quality throughout Mower County

3.4.1 Action/Implementation

Map all potential wetland projects Type 3-6 in watersheds that have flood characteristics and provide for preservation of existing wetlands.

Partners: CRWD, SWCD

Timeline: 2010-2015 **Cost:** \$10,000

3.4.2 Action/Implementation

Pursue state and federal funding in the enactment of CCRP, WREP, RIM and WRP

Results: Over the last 5 years, 771.70 acres of wetlands and have been restored, with the cooperation of 22 landowners participating through the CREP and WRP/RIM program.

Partners: SWCD, NRCS, CRWD ,BWSR

Timeline: 2006 **Cost:** \$60,000

3.4.3 Action/Implementation

Continue to pursue state funding for wetland restorations that will provide flood damage reduction benefits.

Partners: SWCD, CRWD, TCWD,BWSR

Timeline: 2010-2015 **Cost:** \$15,000/year

3.4.4 Action/Implementation

Seek out and develop a Flood Plain reconnection pilot project for restoring and utilizing flood plain functions and values.

Partners: CRWD, NRCS, SWCD

Timeline: 2011 **Cost:** \$20,000

3.5 Objective

Develop Mower County wide standards for storm water runoff management

3.5.1 Action/Implementation

Develop best management practices and permit standards for City of Austin to comply with MPCA permit requirements.

Results: Constructed 4 rain gardens as demonstration and promotion of urban stormwater treatment.

Partners: SWCD, CRWD, Mower County, MPCA

Timeline: 2010 **Cost:** \$15,000/year

3.5.2 Action/Implementation

Support Rain Garden cost-share programs to establish 5 new rain gardens annually.

Partners: SWCD, CRWD

Timeline: 2010-2015 **Cost:** \$5,000/year

3.6 Objective

Develop a Strategic Plan and Team to pursue funding options for flood mitigation projects. These funding options would include federal and state grants. Projects would include planning grants, acquisition programs and structural mitigation efforts

3.6.1 Action/Implementation

Partner with Cedar River and Turtle Creek Watershed District's on education and implementation initiatives to reduce flood damage within the respective watersheds.

Results: Presently the Mower SWCD staff has applied through different sources that include Clean Water Legacy, Mississippi River Basin Initiative and Watershed Restoration program for Dobbins Creek Watershed.

Partners: SWCD, CRWD, TCWD

Timeline: 2010-2015 **Cost:** \$15,000/year

4.0 TMDL

Minnesota's rivers, streams and lakes are a valuable resource for the state. Not only do they provide great natural beauty, they supply the water necessary for recreation, industry, agriculture and aquatic life.

A new approach to help solve the old problem of water pollution is the development of Total Maximum Daily Loads (TMDLs). 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 ground water while still allowing it to meet its designated use, such as for drinking water, fishing, swimming, irrigation or industrial purposes. Many of Minnesota's water resources cannot currently meet their designated uses because of pollution problems from a combination of point and nonpoint sources. According to the MPCA 2002 TMDL report, in the Cedar River Basin there were two streams impaired for one or more of the following pollutants: fecal coliform bacteria, mercury, turbidity, PCB's and excess ammonia. The Cedar River has nine reaches listed

for impairment, the most in the Basin. One lake in the basin has impairment for excess mercury in fish tissue. Altogether, there are 20 river reaches and lakes listed as impaired in this Basin. There have been no new stream reaches and no new lakes added since the 2002 list.

Goal: To work towards bringing Mower County rivers, streams and lakes into compliance with TMDL requirements.

4.1 Objective

Educate the public and elected officials about the concerns and importance of TMDL requirements. Carry out the objectives and Action Implementations of the Soil Erosion, Flooding, Pollution Management and Groundwater sections of the Local Water Management Plan.

Results: In 2008 the TMDL process was started to study Turbidity in the Cedar and Root Rivers. The Mower SWCD is coordinating the effort for the Cedar basin and we are a partner in the Root River watershed. Monitoring was completed in 2010 and gathering information will continue as well as inventory bmps in the watersheds will begin early in 2011. Mower County is also part of the Fecal Impairment for the Lower Mississippi River Basin.

4.1.1 Action/Implementation

Include a map of impaired waters within the County (see MPCA website).

Partners: MCES, SWCD, MPCA, MN DNR

Timeline: 2010-2015 **Cost:** \$200

4.1.2 Action/Implementation

Reduce fecal impairments by addressing unsewered communities in the county and requiring proper wastewater treatment. County staff will work with staff of the SE Minnesota Wastewater Initiative to educate the public on problems associated with inadequate wastewater treatment and to design and facilitate a wastewater treatment project for each of these communities.

Results: Taopi, Nicolville, Lyle and 120 homes and 60 lots north of Austin have all been incorporated into 4 different community sewer system over the last 5 years. The SE Wastewater Initiative was instrumental in the success of these projects. Andyville is currently being worked on. Approximately \$1 Million have been invested into small community septic updates.

Open lot agreement and small feedlots needs have been addressed over the last 5 years. 5 feedlots have received funding through state cost share or EQIP totaling \$470,000.00 and 49 feedlot producers have received \$838,550.00 for manure storage and manure handling.

Partners: Taopi, Nicolville, Red Rock Township, SE Wastewater Initiative, City of Austin, Andyville, CRWD **Timeline:** 2006-2015 **Cost:** \$2.5 Million

4.1.3 Action/Implementation

Continue to address unsewered communities in the county and requiring proper wastewater treatment. Unsewered community on the MPCA list include: Andyville. County staff will work

with staff of the SE Minnesota Wastewater Initiative to educate the public on problems associated with inadequate wastewater treatment and to design and facilitate a wastewater treatment project for each of the remaining communities.

Partners: Andyville Community, City of Lyle, MCES, SE MN Wastewater Initiative, SWCD, CRWD

Timeline: 2010-2011 **Cost:** \$300,000

4.2 Objective

Establish baseline water monitoring data for the TMDL areas

4.2.1 Action/Implementation

Complete the water sample gathering from MPCA designated sites for water quality analysis. Record and track the sampling data. Share sampling data taken from outside the designated MPCA sampling area with state agencies who may wish to use that data as part of a comprehensive monitoring effort.

Partners: CRWD, SWCD, MPCA

Timeline: 2010-2011 **Cost:** \$25,000

4.3 Objective

Develop a Hydrology and Hydraulic model in the Cedar River Basin to have a comprehensive and updated water flow data set.

4.3.1 Action/Implementation

Work with MPCA and Cedar River Watershed District to bring all available data into a water quality model development and begin to build a model that will provide guidance for developing and implementing projects in the Cedar River Basin.

Partners: CRWD, TCWD, SWCD, NRCS, MPCA

Timeline: 2010-2015 **Cost:** \$180,000

4.4 Objective

Implement the Dobbins Creek Agricultural Watershed Restoration plan of targeting Dobbins Creek Watershed and restoring State water quality standards for turbidity in Dobbins Creek

4.4.1 Action/Implementation

Implement the Dobbins Creek Watershed Restoration plan. Create temporary water storage areas, incorporate practices which will hold provide vegetated cover to cropland and develop stream bank stabilization projects. The North Branch watershed has been identified as the most feasible stretch to reach measured goals. Practices and marketing will focus on that stretch for implementation.

Partners: CRWD, SWCD, NRCS, MPCA, BWSR

Timeline: 2010-2015 **Cost:** \$2.2 Million

4.4.2 Action/Implementation

Collaborate with Cedar River Watershed District and Red Rock Township to identify priority projects which may provide multiple benefits

Partners: Red Rock Township, CRWD, SWCD, NRCS

Timeline: 2010-2015 **Cost:** \$15,000/year

4.5 Objective

Concentrate efforts to avoid, trap and control runoff in the Mississippi River Basin Initiative (MRBI) area.

4.5.1 Action/Implementation

Identify areas with flood plain protection, wetland restoration and associated buffer for WREP enrollment in the MRBI focus Area.

Partners: CRWD, SWCD, NRCS, BWSR

Timeline: 2010-2015 **Cost:** \$1.04 Million

4.5.2 Action/Implementation

Market, Educate and enroll priority BMP's identified in the MRBI focus area.

Partners: CRWD, SWCD, NRCS

Timeline: 2010-2015 **Cost:** \$1.12 Million

4.6 Objective

Develop Innovative ways of reducing and measuring nitrate levels in our agricultural landscape. Mower County is intensely farmed with corn and soy bean rotations. Landowners and partners also have a strong tradition of looking at non conventional practices to address water quality concerns. This has been an effective formula for engaging in pilot projects to plan, construct and measure innovative conservation practices. Projects will serve as a demonstration for partners and stakeholders.

4.6.1 Action/Implementation

Collect and tabulate data to provide baseline information for pilot controlled drainage site located in Root River watershed.

Partners: SWCD, MDA, Nature Conservancy, U of M

Timeline: 2010-2013 **Cost:** \$ 27,000

4.6.2 Action/Implementation

Surge Pond Nitrogen Reduction: Collect and tabulate data for baseline tracking of 2 Surge Pond projects located in the Root River watershed. Provide oversight and collect water samples to build baseline data. Collect 30 samples in 2011.

Results: 28 Samples were taken on two sites between 2009 and 2010.

Partners: SWCD, MDA, Nature Conservancy, U of M

Timeline: 2009-2011 **Cost:** \$19,000

4.6.3 Action/Implementation

Provide oversight and analysis on the Two Stage Ditch project located in Adams Township. Monitor the site and collect water samples 20 times a year, for 3 years.

Results: Provided oversight on construction of the ditch and established first year of water sampling by collecting 20 samples.

Partners: SWCD, MDA, Nature Conservancy, U of M

Timeline: 2010-2015 **Cost:** \$10,300

4.6.4 Action/Implementation

Seek funding and support innovative Conservation Practices and Federal Cooperative Conservation Partnership Initiatives.

Results: Applied and received a MRBI grant for \$1.7 million for CCPI practices over the next 5 years in the MRBI area. Practices include wetland restorations, basal stalk nitrate testing, bioreactors, no-till, cover crops, waterways and structures. The first sign-up resulted in \$421,000.00 for practices that will be constructed in 2011.

Partners: SWCD, MDA, Nature Conservancy, U of M, BWSR

Timeline: 2010-2015 **Cost:** \$5,000/Year

4.6.5 Action/Implementation

Initiate Edge of Field Monitoring techniques to measure nitrate levels on corn stalks on agricultural land

Results: 15 Producers have agreed to participate in an initial edge of field, basal nitrate monitoring program

Partners: SWCD, CRWD, NRCS

Timeline: 2010-2015 **Cost:** \$11,000

4.6.6 Action/Implementation

Partner with 25 producers to expand edge of field, Basal Nitrate Monitoring. Develop baseline data through 5 years of monitoring analysis

Partners: SWCD, CRWD, NRCS

Timeline: 2010-2015 **Cost:** \$43,000

5.0 Pollution Management

Pollution sources left unmanaged will impact the quality of the county's water resources. The county's intent is to eliminate or manage the various pollution sources so that the threat they pose to water resources is greatly reduced. These sources include industrial and household chemicals, human and solid wastes, and animal and agricultural wastes. The improper use and disposal of various chemicals and hazardous wastes and the improper use of wastewater treatment systems for their disposal; the handling of animal wastes in a careless manner; and the improper disposal of untreated human wastes cause contaminants to reach the ground and surface waters. Pesticides, nutrients, fecal coliform bacteria, pharmaceuticals and household as well as industrial chemicals currently impact ground and surface waters.

The contamination of our surface and ground waters affects all county residents. Polluted surface waters affect aesthetics, recreation and even the raising of agricultural animals. If not addressed, these pollution sources will contribute additional contaminants to our water resources, resulting in more algae blooms and increased cases of sick animals and even humans.

Goal: To protect surface and ground water resources from pollution sources

Results: Practices completed since 2007:

<i>Conservation Plans written</i>	<i>34,058 acres</i>
<i>Land with practices for Water Quality</i>	<i>8710 acres</i>
<i>Land for wildlife habitat</i>	<i>9,283 acres</i>

5.1 Objective

To educate the public on the proper use and maintenance of individual sewage treatment systems.

5.1.1 Action/Implementation

Conduct annual or semiannual homeowner sewage treatment workshops, targeting new owners resulting from new construction, property transfers and other interested septic system owners each year.

Results: A sewage workshop is held annually, with 30 attendees.

Partners: MCES, U of M, MPCA

Timeline: 2010-2015 **Cost:** \$2,000/year

5.2 Objective

To eliminate direct discharges of sewage to surface or ground water by identifying and repairing or replacing violating sewage treatment/disposal systems.

5.2.1 Action/Implementation

Potential failing and Imminent Threat to Public Health and Safety (ITPHS) systems can be identified by comparing a list of all developed properties with the existing list of sewage treatment systems installed in Mower County. If a name or property is not in the "data base" the system is likely to be an ITPHS. If the system was installed prior to 1996 it is likely to be failing and a possible ITPHS. Arrangements will then be made to inspect the properties for discharges to

the ground surface or surface waters. When discharges are found property owners will be notified and corrective actions ordered as per county ordinance and state rule and statute.

Partners: MCES, CRWD, MPCA

Timeline: 2010-2015 **Cost:** \$15,000/year

5.2.2 Action/Implementation

A priority will be placed on identifying direct discharges to surface waters. These will be identified by inspecting properties in the shore land areas of the county and testing tile outlets draining to waterways. After ownership is determined property owners will be notified and corrective actions ordered as per county ordinance and state rule and statute.

Results: An inventory of ITPHS was complete on the Cedar River Corridor. 20 ITPHS were identified. Notice was given and homeowners were given ten months to meet compliance with a new system.

Partners: MCES, CRWD

Timeline: 2010-2015 **Cost:** \$10,000

5.2.3 Action/Implementation

Inventory every home in Udolpho, Lansing, Austin and Lyle Townships for ITPHS. Inventory will utilize existing database of septic systems through the County. Inventory will also involve landowner interviews and on site investigation.

Partners: MCES, SWCD, BWSR

Timeline: 2010-2012 **Cost:** \$70,125

5.2.4 Action/Implementation

Seek funding to complete the Imminent Public Health Threat Inventory for the remaining townships of the County.

Partners: MCES, SWCD, BWSR

Timeline: 2012-2015 **Cost:** \$100,000

5.2.5 Action/Implementation

Continue to support County policy of requiring point of sale compliant septic systems. Enforce state rules and county ordinance through response to public complaint of ITPHS.

Results: 300 SSTS systems have been replaced over the last 5 years. The County Board put in place that SSTS systems have to be replaced at the point of sale if the systems are not compliant. That doubled the systems being replaced.

Partners: MCES

Timeline: 2010-2015 **Cost:** \$5,000/year

5.3 Objective

Continue to promote used oil recycling with a goal to recycle all used oil in Mower County.

5.3.1 Action/Implementation

Continue to educate the public on reasons to recycle used oil and the locations where used oil can be brought for recycling.

Partners: MCES

Timeline: 2010-2015 **Cost:** \$2,000/year

5.4 Objective

Remove household hazardous waste from the waste stream.

5.4.1 Action/Implementation

Provide a public education program to promote the reuse and proper disposal of household hazardous products and to change consumer habits to purchase less hazardous products and to provide a facility to accept these waste products from residents.

Partners: MCES, MPCA

Timeline: 2010-2015 **Cost:** \$35,000/year

5.5 Objective

Provide financial assistance to homeowners wishing to upgrade their individual septic systems.

5.5.1 Action/Implementation

Provide low-interest loan for homeowners to annually upgrade 25 individual sewage disposal systems across the County.

Results: On an annual basis, Mower County receives funds to provide low interest loans to upgrade non-compliant systems. Funding is received through Ag BMP loan program and a revolving fund from the County.

Partners: MCES, SWCD

Timeline: 2010-2015 **Cost:** 100,000 Revolving Fund

5.6 Objective

Prioritize an initiative to upgrade and identify and upgrade septic systems in the Suburban Estates development in Dobbins Creek Watershed.

5.6.1 Action/Implementation

Identify systems which are not meeting compliance and creating potential public health threat.

Partners: MCES

Timeline: 2010-2010 **Cost:** \$15,000

5.6.2 Action/Implementation

Provide leadership and assistance with potential upgrades to Suburban Estate septic system

Partners: MCES

Timeline: 2010-2010 **Cost:** \$100,000

5.7 Objective

Educate landowners on the importance of a nutrient management plan and provide them with appropriate tools to create a manure management plan

5.7.1 Action/Implementation

Annually assist 30 landowners with nutrient management plans when applying for permits and upon request.

Results: Educated 150 producers at 5 annual workshops on the importance of nutrient management plans

Partners: MCES, SWCD, NRCS, MPCA

Timeline: 2010-2015 **Cost:** \$10,000/year

5.8 Objective

Develop an inventory system for vacant feedlots.

5.8.1 Action/Implementation

Work with producers to properly abandon manure storage facilities.

Partners: MCES, MPCA

Timeline: 2010-2015 **Cost:** \$2,500/year

5.9 Objective

Support the County Sheriffs program to collect and safely dispose of pharmaceuticals

5.9.1 Action/Implementation

Promote the County Sheriffs program to the community and make public aware that those opportunities are available

6.0 Ground Water

Ground water is the sole source of drinking water in Mower County and is used for domestic, industrial and agricultural purposes. Our aquifers are susceptible to contamination from polluted surface waters and by direct contamination from pollution sources. Therefore, protection of vulnerable aquifers is important. Ground water

quality is threatened by activities occurring on the land as well as below the land surface. The application of fertilizers and chemicals to crops and lawns, the disposal of waste in the soil and construction below the surface in the form of wells, sewers and pits and quarries all can impact the quality of water below the ground surface. Not to address this would risk the quality of our ground water. It is likely that there would continue to be a gradual deterioration of ground water quality as more contaminants find their way into the soil, rock and water below the ground surface. The sand plain area of the northwest part of the county and the shallow limestone aquifers of southwestern, southeastern, east central and northeastern Mower County would be areas or groundwater units of greatest concern. However, groundwater throughout the county is susceptible to contamination from improper application of farm and lawn chemicals and fertilizers, feedlot and urban storm water run-off and improper disposal of wastewater from rural sewage treatment systems and municipal treatment plants.

Goal: To protect ground water resources by determining which hydrologic units are determined to be vulnerable due to geography or geology and implement protection strategies.

6.1 Objective

Identify sensitive ground water areas in Mower County.

6.1.1 Action/Implementation

Utilize the Mower County Geologic Atlas to identify geologic units and their location in the county that are susceptible to ground water contamination from surface or subsurface sources.

Partners: MCES, SWCD, MDH

Timeline: 2010-2015 **Cost:** \$5,000/year

6.1.2 Action/Implementation

Identify first limestone aquifers and regions of shallow drift that contain nitrates near or in excess of the MDH drinking water standard. This would be done by accessing state and county water test records and collecting water samples for testing for nitrate where necessary. MDH well records, the CWI and county water test results would be used.

Results: Volunteer Nitrate monitoring was conducted on 64 locations, sampling twice a year.

Partners: MCES, SEWRB, MDH

Timeline: 2007-2010 **Cost:** \$8,000

6.1.3 Action/Implementation

Promote and provide public education on lawn and agricultural fertilizer and chemical use, proper waste water treatment and solid waste disposal in order to reduce chemical and nutrient infiltration into the ground water. This can be provided through SWCD and Extension newsletters, newspaper articles and general press releases.

Partners: MCES, SWCD, U of M Extension

Timeline: 2010-2015 **Cost:** \$1,000/year

6.1.4 Action/Implementation

Explore funding opportunities to begin a marketing initiative to seal unused/unsealed wells

Partners: MDA, SWCD, MCES, MDH, CRWD, Municipalities

Timeline: 2010-2015 **Cost:** \$20,000

6.1.5 Action/Implementation

Institute the Department of Agriculture's Well Replacement Program in the existing Ag BMP loan program. Replace one well system annually.

Partners: SWCD, MCES, MDA

Timeline: 2010-2015 **Cost:** \$3,000/year

6.1.6 Action/Implementation

Participate in volunteer nitrate monitoring network and coordinate efforts with Southeast Water Resources Board, MN Department of Health, MN Department of Agriculture and MN Pollution Control Agency. Conduct one sample a year from volunteer to maintain baseline data.

Partners: MCES, SEWRB

Timeline: 2010-2012 **Cost:** \$1,000/year

6.1.7 Action/Implementation

Compile all private well locations and previous nitrate monitoring throughout the County. Coordinate effort with outside agencies to develop best possible data.

Partners: MCES, SWCD, MDH

Timeline: 2010-2015 **Cost:** \$20,000

6.2 Objective

Develop, recognize and support needs of public water suppliers in their wellhead protection plan programs - effective Wellhead Protection Program for all public wells in Mower County.

Results: The Community of LeRoy has been very active in implementing their recently completed Wellhead Protection Plan. They have taken aggressive marketing approach to educate the citizens of LeRoy about the dangers of unsealed wells. The City first set out and identified over 50 unsealed/unused wells that could be sealed. They have also developed private well sealing program for residents of LeRoy who have un-capped and unused wells.

6.2.1 Action/Implementation

Educate the general public on the importance of wellhead protection.

Results: The city of LeRoy hosted an event to demonstrate well sealing and educate participants on the importance of wellhead protection. This resulted in 20 sign-ups for the Cities newly developed well sealing cost-share program. LeRoy has utilized City, County, State and Federal funding to promote and implement the sealing of wells to protect their resource.

Partners: SWCD, MCES, MDH, Municipalities

Timeline: 2010-2015 **Cost:** \$2,000/year

6.2.2 Action/Implementation

Provide input, public education and outreach for Brownsdale, Dexter and Wellhead Protection plan development.

Partners: MCES, SWCD, MDH

Timeline: 2010-2015 **Cost:** \$4,000/year

6.3 Objective

Evaluate need for protecting water supply against malice or terroristic threats

6.3.1 Action/Implementation

Initiate planning efforts to bring water suppliers, managers and public users to and develop a comprehensive plan to protect and react to future water contamination threats

Partners: Mower County, SWCD, MDH, Municipalities

Timeline: 2010-2015 **Cost:** \$5,000