

Mower County

Local Water Management Plan 2006 - 2015

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Frequently Used Acronyms and Abbreviations

BMP	Best Management Practice
BWSR	Minnesota Board of Soil & Water Resources
CREP	Conservation Reserve Enhancement Program
CRP	Conservation Reserve Program
CWI	County Well Index
DNR	Minnesota Department of Natural Resources
EQUPI	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
NOAA	National Oceanic and Atmospheric Administration
NRBG	Natural Resources Block Grant
NRCS	Natural Resource Conservation Service
MPCA	Minnesota Pollution Control Agency
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
TMDL	Total Maximum Daily Load
WCA	Wetland Conservation Act Administration
WRP	Wetland Reserve Program
WREP	Wetland Reserve Enhancement Program

Executive Summary

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.

Purpose of the Local Water Management Plan

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

1. 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.
2. 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.
3. To intensify work aimed at effective environmental protection and management in the county by addressing existing and potential priority concerns on a watershed basis.

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.

Summary of Goals and Actions

The following is a summary of goals and actions to be taken for the five identified priority concerns:

- 1) Soil Erosion – Protect our surface water and farm land from excessive soil erosion.
- 2) Flooding – Identify all potential properties that might be at risk for flooding.
- 3) TMDL – To work towards bringing Mower County rivers, streams and lakes into compliance with TMDL requirements.
- 4) Pollution Management – To protect surface and ground water resources from pollution sources.
- 5) 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, other counties, and State Agencies to ensure consistency with other water resource management efforts.

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.

Recommended Amendments to Other Plans

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

MOWER COUNTY PRIORITY CONCERNS

1. 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.

Objective 1 Educate the public about soil erosion and enforce the Mower County Soil Erosion Ordinance.

Action/Implementation

- A. Develop an educational strategy for informing landowners/operators of the soil loss ordinance.
- B. Continue to work with farmers in implementing and enforcing the soil erosion ordinance program to achieve acceptable soil loss.

Timeline: Ongoing

Agency (Who): SWCD & Environmental Services

Cost: \$7500.00 a year - NRGB Grant

Benefiting
Watershed or

Groundwater Unit: All watersheds, but priority given to watersheds that are on the TMDL list.

Objective 2 Educate the public of best management practices in controlling soil erosion.

Action/Implementation

Develop and implement a 5 year marketing/education plan to inform landowners of best management practices for controlling erosion.

Timeline: 2006

Agency (Who): SWCD & NRCS

Cost: 5000.00 - SWCD funding

Benefiting
Watershed or

Groundwater Unit: All watersheds, but priority given to watersheds that are on the impaired waters list.

Objective 3 Reduce sedimentation to the County's water bodies due to soil erosion.

Action/Implementation

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

Timeline: Ongoing

Agency: SWCD&NRCS

Cost: \$3000.00 – SWCD funding

Benefiting

Watershed or
Groundwater Unit: All watersheds, but priority given to watersheds that are on the impaired waters list.

Action/Implementation

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

Timeline: 2005 – 2006 and on

Agency: SWCD & NRCS

Cost: 35,000.00 per year SWCD/BWSR funding

Benefiting
Watershed or
Groundwater Unit: All watersheds, but priority given to watersheds that are on the TMDL list.

Action/Implementation

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

Timeline: Ongoing

Agency: SWCD & NRCS

Cost: 25,000.00 per year SWCD funding
10,000.00 per year NRGB funding

Benefiting
Watershed or
Groundwater Unit: All watersheds, but priority given to watersheds that are on the TMDL list.

Action/Implementation

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

Timeline: Ongoing

Agency: SWCD, Environmental Services & Municipalities

Cost: 2000.00 SWCD funding

Benefiting
Watershed or

Groundwater Unit: All watersheds, but priority given to watersheds that are on the TMDL list.

Action/Implementation

Identify measurable actions for selected best management erosion control practices on a yearly basis. Example: # of waterways, terraces, and other practices to be constructed in priority areas.

Timeline: 2007

Agency: SWCD & NRCS

Cost: \$500.00 - SWCD funding

Benefiting
Watershed or

Groundwater Unit: All watersheds, but priority given to watersheds that are on the impaired waters list.

2. 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:

<u>Date</u>	<u>Crest Height</u>
1945 (March)	16.70'
1950 (March 26)	17.80'
1961 (March)	17.10'
1962 (March)	17.20'
1965 (March)	18.87'
1976 (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 NOA 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.

Objective 1 Identify all potential properties that might be at risk for flooding.

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

Timeline: 2005 – 2008

Agency: Mower County Planning & Zoning, rural incorporated cities, urban

Cost: \$25,000

Benefiting Watershed: All

Action/Implementation: Develop and implement comprehensive gauging throughout the County.

Timeline: 2005 – 2006

Agency: Mower County Highway Department and City of Austin Engineering Department

Cost: \$2,500

Benefiting Watershed: Entire County

Action/Implementation: Develop and implement a warning system for property owners impacted by flood events

Timeline: 2005 – 2008

Agency: Mower County Law Enforcement and Engineering Departments

Cost: \$10,000
Benefiting Watershed: All

Objective 2 – 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

Timeline: 2005 – 2007

Agency: Mower County, Freeborn County, Turtle Creek Watershed, Soil and Water Conservation Districts of Mower and Freeborn Counties

Cost:	Board of Water Challenge Grant	\$75,000
	In-kind Match	\$75,000

Benefiting Watershed: All

Action/Implementation: Watershed Coordinator

Timeline: 2007

Agency: Mower County

Cost: \$60,000/yr.

Benefiting Watershed: All

Objective 3 – 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

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

Timeline: 2005
Agency: Soil and Water Conservation District
Cost: \$25,000
Benefiting Watershed: All

Action/Implementation: Pursue state and federal funding in the enactment of CREP, CCRP, WREP, and WRP

Timeline: 2005
Agency: Soil and Water Conservation District
Cost: \$60,000/year
Benefiting Watershed: All

Objective 4: Develop Mower County wide standards for storm water runoff management and quality

Action/Implementation: Develop best management practices and permit requirements for City of Austin to comply with MPCA permit requirements

Timeline: 2005 – 2006
Agency: City of Austin
Cost: \$25,000
Benefiting Watershed: All

Action/Implementation: Develop storm water standards for development projects in Mower County. These standards would limit post development runoff to that of predevelopment

Timeline: 2005 – 2008
Agency: Mower County Planning, Soil and Water Conservation District, and Mower County Engineer
Cost: \$5,000

Benefiting Watershed: All

Action/Implementation: Adopt a development procedure for Mower County ditches to ensure that existing capacity is not exceeded

Timeline: 2005 – 2008

Agency: Soil and Water Conservation District

Cost: \$10,000

Benefiting Watershed: All

Objective 5 – 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

Timeline: 2005 – 2006

Agency: Mower County, City of Austin, Soil and Water Conservation District, and Emergency Management Coordinator

Cost: \$5,000/year

Benefiting Watershed: All

3. 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.

Objective 1 To 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.

Action/Implementation

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

Timeline:

On-going

Agency: Mower County Environmental Services, SWCD, MPCA & MN DNR

Cost: \$2,000

Benefiting Watershed: All

Action/Implementation:

Reduce fecal impairments by addressing unsewered communities in the county and requiring proper wastewater treatment. Unsewered communities on the MPCA list include: Taopi, Nicolville, Andyville, and Lyle. 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.

Timeline: 2006 - 2015

Agency: MCES, SEMWWI

Cost: Unknown

Benefiting Waters: Cedar River, Upper Iowa Watersheds

4. 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

Objective 1 To educate the public on the proper use and maintenance of individual sewage treatment systems.

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 of ISTS's each year.

Timeline: Jan. 2006 - Dec. 2015

Agency: MCES, Extension

Cost: Approx. 16 hours of staff time per year (\$2,000 ??)

Benefiting Watershed: All county residents

Objective 2 To eliminate direct discharges of sewage to surface or ground water by identifying and repairing or replacing violating sewage treatment/disposal systems.

Action/Implementation

Potential failing and imminent public health threat (ITPHS) systems can possibly 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.

Timeline: Jan. 2006 – Dec. 2015

Agency: MCES

Cost: \$15,000

Benefiting Watershed: All

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.

Timeline: July 2006 – Dec. 2015

Agency: MCES

Cost: \$10,000

Action/Implementation

Sewage discharges (ITPHS's) to state, township and county road rights-of-ways can be seen while driving on these roads. There are still many sewers discharging to road ditches in Mower County and many of these could be eliminated by sending notification to the property owner and enforcing state rule and statute and county ordinance. Notifications can be sent by systematically selecting roadways to be surveyed, or randomly as discharging systems are noticed by county staff or turned in by the public.

Timeline: Jan. 2006 – Dec. 2015

Agency: MCES

Cost: \$20,000

Objective 3 Continue to promote used oil recycling with a goal to recycle all used oil in Mower County.

Action/Implementation

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

Timeline: On-going

Agency (Who): MCES

Cost: \$2,000

Benefiting
Watershed or
Groundwater Unit: All

Objective 4 Remove household hazardous waste from the waste stream.

Action/Implementation

Provide a public education program to promote 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.

Timeline: On-going

Agency (Who): MCES

Cost: \$35,000

Benefiting
Watershed or
Groundwater Unit: All

Objective 5 Provide financial assistance to homeowners wishing to upgrade their individual septic systems.

Action/Implementation

Provide low-interest loan to homeowners to upgrade their individual sewage disposal systems.

Timeline: On-going

Agency (Who): MCES

Cost: \$100,000

Benefiting
Watershed or
Groundwater Unit: All County Residents

Objective 6 Develop an agricultural nutrient management program to include assisting landowners in writing nutrient management plans.

Action/Implementation

Assist land owners with nutrient management plans when applying for permits and upon request.

Timeline: On-going

Agency (Who): MCES

Cost: \$10,000

Benefiting
Watershed or
Groundwater Unit: All

Objective 7 Develop an inventory system for vacant feedlots.

Action/Implementation

Work with producers to do proper abandonment of manure storage facilities.

Timeline: On-going

Agency (Who): Existing Staff

Cost: \$2,500

Benefiting
Watershed or
Groundwater Unit: All

5. 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.

Objective 1 To identify sensitive ground water areas in Mower County.

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.

Timeline: Jan. 2006 – June 2006

Agency: Mower County Environmental Services
Mower County Soil and Water Conservation District
Minnesota Dept. of Natural Resources

Cost: County and Agency staff time – approximately 100 hours

Benefiting Watershed: (\$5,000)
Mower County

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.

Timeline: July 2006 – June 2007

Agency: MCES, MnDNR, MDH

Cost: Approx. 200 hours of staff time
Approx. 50 nitrate tests at \$20 per tests = \$1000
(\$12,000)

Benefiting Watershed: County Residents residing where first rock or drift aquifers can be used

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.

Timeline: Jan. 2006 – Dec. 2015

Agency: SWCD, Extension, MCES

Cost: Existing publications and staff time

Benefiting: All county residents

Action/Implementation

Continue a cost-share program for the sealing of unused and unsealed wells in Mower County.

Timeline: 2006 – 2015
Agency: MCES
Cost: \$7,000.00
Benefiting: All county residents

Objective 3. 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.

Action/Implementation

Educate the general public on the importance of wellhead protection.

Timeline: 2006 - 2015
Agency: MN Dept. of Health, Cities & MCES
Cost: Existing Staff
Benefiting Watershed: All