Cedar River Watershed: Water Plans

The Cedar River Watershed encompasses Dodge, Freeborn, Mower, and Steele Counties. Each county has developed a 10-year rotating comprehensive local water management plan (LWMP) in order to improve water quality within Minnesota. The water plans are comprised of a set of concerns the counties have described as a priority, along with how they intend to effectively manage them.

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

Water Plans:
Dodge County LWMP 2006-2015 amended 2011
Freeborn County LWMP 2006-2015 amended 2011
Mower County LWMP 2006-2015 amended 2010
Steele County LWMP 2007-2016

Water Plan Evaluation

Concern	Dodge	Freeborn	Mower	Steele
Conservation BMPs				
Education				
Feedlot Compliance				
Groundwater				
Monitoring				
Seek Funding				
SSTS/ISTS				
Stormwater Management				
Surface Water				
Technical/Financial Assistance				
Watershed-based Approach				
Wetlands				
Coordination/Partnership				
Erosion Control				
Municipal Wastewater				
Priority Pollutants				
Sediment				
Shoreland Management				
TMDL - Impaired Water				
Wellhead Protection				
Abandoned Wells				
Development Concerns				
Manure Management Plan				
Nutrient Management				
Demonstrations				
Drainage Management				
Lake Management Plan				
Water Retention				

Concerns addressed in County Water Plan associated with nutrient issues

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

Dodge County LWMP 2006-2015 amended 2011

Priority Concern: Fertilizers and herbicides from agricultural fields seeping into drinking water

Priority Concern: Nutrients and chemicals from animal feedlots flowing into rivers and streams

Priority Concern: Nutrients and chemicals animal feedlots seeping into drinking water

Priority Concern: Soil, fertilizers and herbicides from agricultural fields flowing into rivers and streams

Priority Concern: Loss of natural vegetation an habitat due to urban and rural development

Priority Concern: Flash flooding or the quick rise and fall of water and stormwater management

Priority Concern: Inadequate individual septic systems, municipal sewers, and community systems that drain to field tile, wetlands, and streams or rivers

Goal: Safe drinking water in all aquifers and pollutants loads in protected waters below state and federal standards including TMDLs

Objective: Inventory mapping

Actions:

- Annually update data and maps in County's Environmental Atlas. Distribute atlas to elected officials, policy makers, and staff. Within 5 years make atlas available on the County's Web Page.
- Regularly update County Well Index by field locating newly drilled wells and wells with construction and water quality information.

Objective: Groundwater monitoring

Actions:

- Provide well water testing service to public. Assign lab results to well record in County Well Index.
- Coordinate a network of citizen volunteers to sample their wells over a long period of time to determine trends.

Objective: Surface water monitoring

Actions:

- Maintain network of volunteer stream monitors to collect turbidity tube measurements and macroinvertebrate samples.
- Maintain existing automatic sampling station.
- Seek out and actively participate in Total Maximum Daily Load (TMDL) studies and grant opportunities which seek to clarify information relating to surface water conditions, health risk, and pollutant transport. Pursue partnerships with government agencies and other groups to aid in this effort.

Objective: Education and Technical Assistance

Actions:

- Annually summarize drinking water quality conditions per aquifer and report to local elected officials, state agencies, and public.
- Annually summarize surface water quality conditions per watershed and report to local elected officials, state agencies, and public.
- Distribute at least 6 “news releases” per year to all local newspapers.
- Support SWCD’s long-standing annual “conservation lesson” for middle school students.
- Annually advertise in local newspaper or through direct mailings, a summary of regulations related to water and waste management.
- Annually advertise in local newspaper or through direct mailings, a summary of local services related to water management including technical and financial assistance.
- Provide technical assistance upon request for information related to existing regulation and incentive programs.
- Create, update, and make available to public; brochures and publications related to water management. Seek opportunities that promote citizen engagement among county residents in programs dealing with ground water and surface water protection/restoration.
- Include information on the County’s Web Page.
- Support and encourage enrollment in all land set-aside programs that help implement the objectives of the Water Management Plan including, but not limited to, CRP, CREP, RIM, WRP, CSP, WREP, etc. Focus attention on “Special Project Areas” in the county where greater attention is directed to the protection and restoration of highly-valued resource areas, and the

encouragement of practices that retain water on the land. See Appendix C for the location of special project areas, including sensitive ground water areas, flood-prone regions, and watersheds, such as the Cedar River, Milliken Creek, and the Middle Fork Zumbro River, with specific environmental concerns.

- Inform all landowners and contractors of the important functions of wetlands. Also provide information and technical assistance that helps landowners recognize wetlands, how to protect them and how to restore them.
- Evaluate options to encourage and/or require vegetative buffers along the shoreland of wetlands and streams not identified as public waters.

Objective: Financial Assistance

Actions:

- Provide opportunity for landowners to obtain an AgBMP Loan.
- Provide opportunity for landowners to obtain a grant from the County's Environmental Trust Fund for actions that are consistent with the objectives of the Water Management Plan.
- Provide opportunity for well owners to receive a free water testing kit if the well is shallow (< 60' deep), the resident of the home is expecting a child or has an infant less than 1 year old, or if the well has never before been tested.
- Seek funding through the Citizen and Community Participation Program in order to aid community partners in the implementation of practices designed to reduce stormwater runoff and retain water on the land.

Objective: Regulation, Ordinance, Planning

Actions:

- Implement the County's Water Management Plan, Comprehensive Land Use Plan, and Solid Waste Management Plan and enforce related ordinance. Existing regulations include: individual sewage treatment systems, wetlands, shoreland, floodplains, storm water, waste disposal, recycling, feedlots, contaminated soil, and land use (zoning).
- Regularly update plans and ordinances.
- Propose a county-wide policy that defines the county's position and responsibility for stormwater flow management in the context of an entire watershed. In other words, define what the county's role is in reducing impacts of flash floods and sedimentation affecting downstream neighbors.
- As time allows, assist local governments implement similar regulations.
- Review public drainage regulation and determine how implementation would help meet objectives of the water management plan.
- The County will work with the Cedar River Watershed District (CRWD) in the implementation of their existing rules as they pertain to the Water Plan.

- Develop strategies to protect higher quality ground water and surface water systems and address concerns of lower quality systems. Consider related zoning amendments that conform to the objectives of the water management plan.
- Dodge County plans to close, and place final cover on, its demolition landfill in accordance with Minnesota Pollution Control Agency rule.

Objective: Administration and Coordination

Actions:

- The County will carry-out the Local Water Management Plan including annual activity planning, staffing, contracting, and reporting.
- The County will collaborate with partners to reach shared goals and objectives. Partners include Federal Agencies, State Agencies, Soil and Water Conservation District, Watershed Districts and Partnerships, Local Governments, Joint Powers Boards, not for profit organizations, businesses, and individuals. When possible the County will jointly work on "accessory activities" as outlined below:
    - Inventory and Mapping
        - Obtain annual aerial photographs at a scale that will improve accuracy of inventories and improve ability to educate public, provide technical assistance and enforce regulations.
        - Make Environmental Atlas an interactive product on internet that allows user to overlay multiple themes and analyze data.
        - Seek out and actively participate in research studies which seek to clarify information relating to pollutant transport, ground water sensitivity, surface water conditions and health risk.
        - Map and Inventory condition of existing buffers on Protected Waters.
        - Update Feedlot Inventory.
        - Inventory of unique, rare and endangered natural habitat.
        - Compile flood damage information.
        - Identify primary sources of soil erosion at a sub watershed scale and calculate amount of soil lost to streams.
        - Pursue updated FEMA flood maps.
    - Groundwater Monitoring
        - Regularly obtain (and pay for) groundwater samples from a network of drinking water wells to provide baseline and long-term trends of water quality in primary aquifers.
        - Seek out and actively participate in research studies which seek to clarify information relating to pollutant transport, ground water sensitivity, and health risk.
        - Gain more information about potential risks from manure storage basins; earthen and concrete construction.

        - Study soil sampling protocol to help define opportunities for improving use of soil testing data by landowners.
        - Seek out and actively participate in research studies and grant opportunities which pertain to increasing our knowledge of groundwater trends and protecting sensitive ground water areas of the county, particularly, those areas of northern and eastern Dodge County where the first carbonate aquifer has no shale or clay protection.
    - Surface Water Monitoring
        - Continue to monitor Salem Creek (impaired water) for fecal coliform bacteria and assist landowners in evaluating options to reduce fecal contributions including feedlot runoff, manure land spreading, and septic systems.
        - Expand the number volunteer stream monitors to accurately judge conditions of all sub watersheds.
        - Install and operate continuous flow meters on primary river segments.
        - Expand the sampling program to a point when one or two water quality parameters can be recognized by the general public as indicators of water quality and the conditions that lead to said quality.
        - Seek out and actively participate in research and grant opportunities which seek to clarify information relating to pollutant transport, surface water conditions, and health risk. Direct special attention to low floodland areas of the county and projects which emphasize the county's upland water retention potential from its position at the top of 3 watersheds.
        - Demonstrate soil erosion control features at farm scale.
        - Work with MPCA, and other agencies, to establish and maintain surface water monitoring sites on a small subwatershed, such as Milliken Creek, to record trends in water quality/quantity and track impacts of land management practices.
    - Education and Technical Assistance
        - Support cooperative education efforts, and demonstration projects, to promote Agricultural BMP's including, but not limited to: nutrient management (including reduction in fall application of nitrogen), conservation drainage systems to promote water storage capabilities, buffers for protected waters and sensitive features like sinkholes, soil testing, pesticide application, etc…
        - Inform all citizens of the importance of sealing unused wells.
        - Demonstrate options for treatment of milkhouse waste.
        - Assist municipalities to develop and enforce a Shoreland Overlay Zoning District, Stormwater Management Plans, and Wellhead Protection Plans.
        - Partner with them, and provide technical assistance, on grant opportunities designed to improve surface and ground water in the county. Where appropriate, assist with city storm water projects.
        - Lead the effort to write a plan with goal to repair all failing septic systems. Part of the plan should be education and incentives to encourage homeowners to

voluntarily repair their failing septic systems. Education should include information about the risks of a failing system, how to recognize a failing system, how to repair it, and where to get financial assistance. The education should include a comparison of the "facts vs. myths" regarding mound type individual sewage treatment systems.

- Lead a demonstration of Stormwater Management techniques, conducted on a "farm scale" or construction site, that illustrate methods to retain and treat storm water runoff including wetland restoration.
- Identify additional "special project areas" of the county where conditions merit special attention to ground and surface waters issues due to susceptibility to pollutants, or opportunities for increased utilization. Pursue funding and partnerships, where appropriate, to address these issues.

- Financial Assistance
  - In addition to existing grant and loan programs, seek opportunities for financial assistance for activities such as:
  - Grants to feedlot owners to fix physical conditions that pose a pollution potential.
  - Low interest loans for replacing septic systems. The loan payback system should include an option for a special assessment payable on the property tax statement.
  - Grants to landowners who seek to implement practices designed to retain water on the land, e.g., wetland protection and restoration.
- Regulation, Ordinance, Planning
  - Implement the South Zumbro Watershed Storm Water and Capital Improvement Plan.
  - Adopt a policy and process that supports full enforcement of MN Rule 7020 including: regularly verifying that Manure Management Plans are properly implemented, regularly inspecting feedlots for compliance, and enforcing Open Lot Agreements. Inspections should occur on 20% of the feedlots each year. Enforcement policy should include easily administered penalties for violations.
  - Adopt a policy and process that supports full enforcement of stormwater management and erosion control standards including standards found in the Zoning Ordinance and construction stormwater permits.
  - Encourage growth in or near the cities, utilizing city services. Discourage expansion of the designated Urban Expansion District (2005 Zoning Ordinance) prior to completion or full development within the current boundary.
  - Discourage large-lot rural housing outside the Urban Expansion District. Encourage cluster, low impact development with associated open space where rural subdivisions are allowed.
  - Support efforts to protect unique natural resources and open space.
  - Support efforts to sunset old plats in rural areas that have not been developed (see Goodhue Co. as example).

        - Lead in the implementation of a system that tracks compliance with septic system maintenance standards and regularly notifies the owner when maintenance is due.
        - Evaluate the pros and cons of a “soil loss ordinance”; consider options for implementation in the county.
        - Require landowners to be in compliance with all regulations as a condition of approval of any zoning permit (even regulations unrelated to the permit request; for example….proof of compliance with shoreland buffer standards on all land before a zoning permit for a structure is approved.)
        - Utilize, or encourage utilization of, the state public drainage regulation and code.
    - Administration and Coordination
        - The County will collaborate with partners to reach shared goals and objectives. Partners include Soil and Water Conservation District Federal Agencies, State Agencies, Local Governments, Joint Powers Boards, not for profit organizations, businesses, and individuals.
        - The county, when practical, will develop work plans for completing accessory actions and apply for grants to complete the work plans.

Freeborn County LWMP 2006-2015 amended 2011

Priority Concern: Aquifers

Goal: Protect aquifer from contamination by water wells

Objective: Require proper construction, maintenance, and abandonment of water wells

Action:

- Target the cities of Albert Lea, Alden and Glenville for education of MDH Water Well Construction Standards, well sealing procedures and ground water protection

Actions:

- Target the cities of Albert Lea, Alden and Glenville for inventory and mapping of existing water wells to prioritize abandonment policy
- Assist the cities of Albert Lea, Alden and Glenville in applying for Federal and State Funding to assist landowner sealing water well costs
- Seek local cost-share funding for water well sealing Assist Public Water Suppliers with implementing wellhead protection plans

Goal: Protect ground water from depletion and degradation

Actions:

- Support Minnesota Rules Chapter 4725 “Guide to Water Wells and Borings” is followed during construction, maintenance, and abandonment of water wells
- Increase well head protection efforts in land use policy plans
- Promote wise and efficient use of groundwater resources
- Improve citizens/landowners access to local and regional groundwater data
- Collect water quantity and quality data for management decisions
- Sealing abandoned/unused wells
- Develop a water allocation plan to manage drought conditions/water shortages

Priority Concern: Surface Waters

Goal: Stormwater management

Actions:

- Provide assistance to municipalities for the development of stormwater control and treatment plans

- Participate with communities to develop and implement stormwater policies on flood and pollution mitigation plans
- Offer incentives on rain gardens, rain barrels, stormwater wetlands, and water storage pond construction
- Assist in educational events on urban best management practices to reduce run-off
- Identify areas in drainage systems to establish water retention/water infiltration ponds
- Support the use of drained wetland areas for water storage capacity
- Seek funding for surface water gauging stations
- Seek grant opportunities to fund wetland restoration in priority areas

Goal: Address impaired surface waters

Actions:

- Provide technical assistance with outreach, education and demonstration sites to reduce agricultural chemical and nutrient impacts
- Support Aquatic Invasive Species Prevention Programs
- Assist the MPCA in development of "Total Maximum Daily Load" TMDL by major watershed for priority pollutants (fishes bioassessments, turbidity, ammonia (un-ionized), pH, fecal coliform, nutrient/eutrophication biological indicators)
- Provide technical assistance throughout the TMDL study and implementation study. Freeborn County will share water quality/quantity data collected for use in identifying impaired waters.
- Seek local, state, and federal grant funding to protect surface waters
- Participate in low interest loan, cost share, and incentive programs for "Best Management Practice" implementation
- Develop plans to address subwatershed level impacts to reduce pollutants causing impairments, as part of an approved implementation plan.
- Continue support of citizen stream monitoring, citizen lake monitoring, and citizen precipitation monitoring programs
- Facilitate effective water resource management through education and public outreach (newsletters, articles, radio, county fair booth)
- Participate with MPCA on the Watershed Restoration and Protection (WRAP) Program starting in the following years: Le Sueur River Watershed 2008, Cedar/Shell Rock River Watershed 2009, Cannon River Watershed 2011, Winnebago River Watershed 2013, Blue Earth River Watershed 2017
- Coordinate with the Shell Rock River Watershed and Turtle Creek Watershed Districts efforts on remediating water quality through a comprehensive strategy on watershed management.
- Coordinate Agriculture Water Management Issues and Conservation Drainage Issues
- Designate a Lakes Management Subcommittee to participate with Department of Natural Resources and Ducks Unlimited in the development of management plans on Bear Lake and State Line Lake
- Continue systematic redetermination of benefits for ditch systems

- Implement consistent buffer initiatives according to current drainage law

Goal: Protect surface water and ground water from ISTS

Objective: Follow MPCA approved design, construction and operation of SSTS

Actions:

- Follow MPCA Water Quality Division SSTS, Chapter 7080 thru 7083
- Seek licensing of all SSTS Designers, Installers, Pumpers and Septage Haulers that perform work in county
- Provide education to landowners on properly installed and functioning SSTS
- Apply for state and local cost-share funds for SSTS Installations

Goal: Enhance protection of surface and ground water resources from subsurface sewage system treatment systems

Actions:

- Continue compliance with Minnesota Rules 7080 through 7083
- Provide County level FTE licensed and certified SSTS inspectors
- Develop an individual parcel county-wide compliance inspection program
- Provide continuing education to local SSTS professions and landowners
- Apply for state and local cost share programs to assist municipalities and income eligible landowners with waste water collection and treatment construction costs

Priority Concern: Topsoil

Goal: Protect and preserve topsoil

Actions:

- Educate landowners on soil erosion practices
- Participate in (Ag BMP) MDA Best Management Loan Program
- Implement Minnesota Construction site erosion and sediment control planning
- Support enrollment of highly erodible lands into Federal Conservation Reserve Program (CRP), Reinvest in Minnesota Program (RIM), Environmental Quality Incentives Program (EQIP)

Goal: Control soil erosion

Actions:

- Preserve and protect top soil
- Promote conservation programs that reduce soil erosion
- Pursue grant opportunities for incentive funding of controlled tile drainage systems on ag fields

- Provide public education for the protection of sensitive lands
- Participate in demonstrations of effective conservation tillage methods
- Support wind erosion conservation practices (tree plantings, seeding of erosion area)
- Educate landowners on TMDL permit efforts to reduce sedimentation of creeks, ditches, and lakes.
- Enhance the promotion of buffer strips, filter strips, grassed waterways, and sediment control basins.
- Support the use of "Precision Agricultural Technologies" (PCT) and cover crops where appropriate.
- Engage local partners (NRCS, Conservation Groups, Lake Associations) to foster new relationships on conservation approaches.

Priority Concern: Wetlands

Goal: Preserve existing wetlands

Actions:

- Participate in Wetland Preservation Program (WPA)
- Freeborn County, acting as local governing unit for implementation of the Wetland Conservation Act will continue to follow US Corps of Engineers, DNR, BWSR Wetland Regulations
- Apply for state funding and assistance from MDA and DNR to control invasive species infestations on public and private wetlands Complete wetlands inventory and prioritization for protection planning
- Work to establish Federal, State and Local funding partnerships for wetland restoration land purchase.
- Develop and implement a 5 year wetland preservation education action plan

Priority Concern: Feedlots

Goal: Protect surface water and ground water resources from feedlot/animal waste contamination

Actions:

- Enforce Minnesota Rules Chapter 7020 – MPCA Feedlot Permit Program Standards.
- Continue to provide education to feedlot owners/operators on best management of animal waste.
- Pursue Federal and State Funding to mitigate or eliminate pollution from feedlots and animal manure.

Goal: Management of Animal Manure for land applications

Actions:

- Follow Minnesota Rules 7020 for animal feedlot, manure storage, and land application of liquid and solid waste products.
- Provide manure management workshops
- Require and provide construction inspections of new feedlot facilities
- Provide manure management plan review every four years with all producers
- Provide opportunities and incentives to owner/operators for planning and training of feedlot operations
- Continue to provide MPCA/Freeborn County Feedlot Officers and permitting process
- Utilize GPS for mapping of feedlot sites and identification of environmentally sensitive areas to control manure application
- Require soil sampling of manure application acres for nutrient analysis
- Host/participate in field demonstrations plots, new equipment displays, and calibration of injectors/spreaders
- Assist MPCA, MDA, U of M, and MN Extension Offices on grazing of lands and nutrient management plans
- Utilize GIS/GPS Technologies in developing Manure Management, Nutrient Management, Pasture Management, and Rotational Grazing Plans.
- Encourage involvement in the Livestock Environmental Quality Assurance (LEQA) Program
- Consider development of local Agricultural Advisory Committee for livestock producers
- Provide technical assistance with implementation of Best Management Practices to reduce impacts of manure land applications

Priority Concern: Municipal wastewater

Goal: Protect surface water and ground water from municipal wastewater contamination

Actions:

- Provide assistance to municipalities to construct and maintain wastewater treatment facilities
- Apply for federal/state/local funding for wastewater treatment facilities
- Seek priority placement on MPCA Wastewater Infrastructure Fund (WIF) for nonconforming wastewater treatment facilities

Priority Concern: Stormwater Drainage

Goal: Protect surface waters from stormwater drainage of sediment, nutrients, and chemicals

Actions:

- Maintain or improve existing ditch system
- Require vegetative buffer strips along public ditches upon redetermination

- Encourage landowners of private ditches to establish and maintain vegetative buffer strips
- Educate landowners on land treatment options and available cost-share programs to minimize transport of sediment
- Identify ditches that contribute excess sediment into surface waters
- Measure surface water flows and analyze water for nutrient/chemical/sediment loading
- Follow MPCA TMDL recommendations for remediation of waters

Priority Concern: Watersheds

Goal: Manage watersheds to reduce bacteria, nutrients, chemicals, and sediments from entering surface waters

Actions:

- Develop and education presentation on point and non-point pollution sources
- Apply for federal/state/local funding for Land BMPs
- Require erosion and sediment control plan on construction sites (requirement in building permit)
- Assist municipalities on stormwater management issues

Goal: Manage watersheds to control surface water run-off

Actions:

- Require post-land development surface water run-off rates not exceed pre-land development run-off rates
- Preserve flood plain areas
- Continue to participate in DNR Floodplain Management – MN Chapter 103.F
- Apply for federal/state/local funds for construction of riparian buffers
- Continue participation in MN Department of Agriculture Best Management Loan Program
- Prioritize drained wetlands for use as water holding basins and restore wetland use
- Continue participation in volunteer citizen precipitation gauge monitoring program

Priority Concern: Shorelands

Goal: Protect and preserve existing shorelands

Actions:

- Follow MN DNR Standards for Management of Shoreland Areas – M.S. 6120
- Provide educational opportunities on shoreland protection
- Work to preserve existing natural riparian vegetation or re-establish it

Goal: Protect shoreland areas

Actions:

- Identify shoreland erosion sites and prioritize run-off sites for remediation
- Promote best management practices to reduce erosion and sedimentation on shoreland areas
- Promote vegetative buffers along shoreland areas
- Require animal grazing management practices to limit erosion potentials
- Pursue aquatic management areas
- Follow MN DNR Public Waters permitting and local shoreland ordinance practices (M.S. 6120)
- Require construction site erosion control standards
- Provide building contractor educational opportunities on erosion control practices
- Provide landowner information on sediment and erosion control practices
- Support DNR Lake Management Plans
- Support up-grades to public access areas on Freeborn, Bear, Pickerel, Upper Twin, Lower Twin, Geneva, Fountain, Albert Lea, Goose, and State Line Lakes in Freeborn County
- Preserve, enhance, and protect natural shoreland resources of all water bodies for wildlife habitat

Mower County LWMP 2006-2015 amended 2010

Priority Concern: Soil Erosion

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

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

Actions:

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

Objective: Educate the public of BMPs in controlling soil erosion

Actions:

- Implement a marketing/education initiative to inform landowners of best management practices for controlling erosion.
- 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.
- Promote and track the MPCA Citizen Stream Monitoring Program. Provide education and oversight locally for participants.
- Collaborate with Cedar River Watershed District and Turtle Creek Watershed District on outreach and implementation initiatives to reduce soil erosion.

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.

Actions:

- 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.
- Implement conservation practices that will reduce erosion and sediment loading to the streams and ditches.
- Develop and implement a 5 year action plan for increasing riparian buffer and filter strip enrollment through Continuous CRP.
- Identify best management practices for treating soil erosion on agricultural land.

- 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.
- 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.
- Continue to educate and implement the MPCA Stormwater program to reduce erosion on construction sites in municipalities and rural areas.
- 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.
- Administer the local Ag BMP loan program to provide producers with a means of obtaining equipment to apply conservation tillage practices.

Priority Concern: Flooding

Goal: Protect life and property from future flooding

Objective: Provide education, collaboration and leadership on flood damage reduction initiatives

Actions:

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

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

Actions:

- Map all properties that have flooding risks and develop a warning system that will provide property owners awareness of risks.
- Develop and implement comprehensive stream gauging throughout the County.
- Complete a Hydraulic and Hydrology model that will provide an effective, efficient and essential tool for understanding flows in the Cedar River Watershed District.
- Develop aerial photography inventory of flooding events in the Cedar River, Turtle Creek, Root River, and Upper Iowa Watersheds

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

Action:

- Watershed Coordinator

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

Action:

- Map all potential wetland projects Type 3-6 in watersheds that have flood characteristics and provide for preservation of existing wetlands.
- Pursue state and federal funding in the enactment of CCRP, WREP, RIM and WRP
- Continue to purse state funding for wetland restorations that will provide flood damage reduction benefits.
- Seek out and develop a Flood Plain reconnection pilot project for restoring and utilizing flood plain functions and values.

Objective: Develop Mower County wide standards for stormwater runoff management

Action:

- Develop best management practices and permit standards for City of Austin to comply with MPCA permit requirements.
- Support Rain Garden cost-share programs to establish 5 new rain gardens annually.

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

Action:

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

Priority Concern: TMDL

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

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.

Action:

- Include a map of impaired waters within the County (see MPCA website).
- 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.
- 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 17with 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.

Objective: Establish baseline water monitoring data for the TMDL areas

Action:

- 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.

Objective: Develop a Hydrology and Hydraulic model in the Cedar River Basin to have a comprehensive and updated water flow dataset

Action:

- 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.
- Implement the Dobbins Creek Agricultural Watershed Restoration plan. Create temporary water storage areas, incorporate practices which will hold provide vegetated cover to cropland and develop streambank 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
- Collaborate with Cedar River Watershed District and Red Rock Township to identify priority projects which may provide multiple benefits

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

Action:

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

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

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.

Action:

- Collect and tabulate data to provide baseline information for pilot controlled drainage site located in Root River watershed.
- 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.
- 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.
- Seek funding and support innovative Conservation Practices and Federal Cooperative Conservation Partnership Initiatives.
- Initiate Edge of Field Monitoring techniques to measure nitrate levels on corn stalks on agricultural land
- Partner with 25 producers to expand edge of field, Basal Nitrate Monitoring. Develop baseline data through 5 years of monitoring analysis

Priority Concern: Pollution Management

Goal: To protect surface and groundwater resources from pollution sources

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

Action:

- 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.

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

Actions:

- 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.

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

Objective: Provide financial assistance to homeowners to annually upgrade 25 ISTS across the County

Action:

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

Objective: Prioritize an initiative to upgrade identify and upgrade septics in Suburban Estates development in Dobbins Creek Watershed

Actions:

- Identify systems which are not meeting compliance and creating public health threat
- Provide leadership and assistance with potential upgrades to Suburban Estate septic System

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

Action:

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

Objective: Develop an inventory system for vacant feedlots

Action:

- Work with producers to properly abandon manure storage facilities

Priority Concern: Groundwater

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: Identify sensitive groundwater areas in Mower County

Actions:

- 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.
- 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.
- Explore funding opportunities to begin a marketing initiative to seal unused/unsealed wells
- Institute the Department of Agriculture's Well Replacement Program in the existing Ag BMP loan program. Replace one well system annually.
- 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.
- Compile all private well locations and previous nitrate monitoring throughout the County.
- Coordinate effort with outside agencies to develop best possible data.

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.

Actions:

- Educate the general public on the importance of wellhead protection.
- Provide input, public education and outreach for Brownsdale, Dexter and Wellhead Protection plan development.

Steele County LWMP 2007-2016

Priority Concern: Soil, Fertilizers, and Pesticides from Agricultural Fields Flowing into Surface Waters

Goal: Protect surface waters from sedimentation and agricultural field pollutant runoff

Objective: Develop and administer a Soil Erosion Ordinance

Actions:

- Work with the SWCD office on the development of a soil erosion ordinance
- Work with farmers to implement and enforce the soil erosion ordinance program to achieve acceptable soil loss

Objective: Participate in the farm program policymaking process

Action:

- Work with federal legislators on developing environmentally and economically sustainable farm program policies

Objective: Educate the public on best management practices to control soil erosion

Actions:

- Provide education to landowners on best management practices for controlling erosion
- Develop and implement a 5 year marketing/education plan to inform landowners of BMPs for controlling erosion
- Develop and implement a 5 year action plan for increasing riparian buffer and filter strip enrollment through Continuous CRP, CREP and other programs

Objective: Seek funding sources for soil erosion control and filter strip projects

Action:

- Apply for Clean Water Fund grants and other federal and state funding to create new erosion control projects or to enhance existing programs

Objective: Promote Ag BMP's for pesticide and fertilizer use and conservation drainage practices

Actions:

- Promote Best Management Practices for pesticide and fertilizer use under MDA and EQIP guidelines

- Develop and implement a BMP training program for dealers, crop consultants, agronomists, and pesticide users
- Encourage the use of conservation drainage practices and designs during repairs and improvements of existing drainage systems.

Objective: Participate in the farm program policymaking process

Action:

- Work with federal legislators on developing environmentally and economically sustainable farm program policies

Objective: Develop strategies to minimize soil erosion and sedimentation

Actions:

- Work with the SWCD office on the development of a soil erosion ordinance
- Work with farmers to implement and enforce the soil erosion ordinance program to reduce erosion to T (tolerable soil loss)
- Run scenarios on GSSHA (Gridded Surface Subsurface Hydrologic Analysis) to understand the effectiveness of different BMPs in reducing turbidity and flow in the Straight River watershed and where to apply BMPs to reduce turbidity (STRAIGHT RIVER WS)
- Implement recommended BMPs from GSSHA modeling and engage and incentivize landowners to implement BMPs in areas identified by GSSHA modeling (STRAIGHT RIVER WS)
- Implement in-channel BMPs to protect streambanks and stabilize grades to prevent streambank erosion and sedimentation
- Administer and enforce official controls that require buffers on public waters and public ditches

Priority Concern: Sewage from Rural Septic Systems into Surface Waters

Goal: To protect surface and ground water resources from rural wastewater contamination

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

Action:

- Conduct sewage treatment workshops and distribute ISTS information to homeowners

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

Actions:

- Identify imminent public health threat (ITPHS) systems by comparing a list of all developed properties with the existing list of sewage treatment system permit records/installations in Steele County.
- Develop and implement a strategic plan to bring nonconforming ISTS into compliance through publicity, enforcement, and financial incentives
- Provide planning and technical assistance for small communities with inadequate wastewater treatment in the county
- Provide financial assistance to homeowners to replace nonconforming systems through the Clean Water Partnership (CWP) loan program, AgBMP loan program, and other funding sources

Priority Concern: Urban Stormwater Runoff

Goal: To protect surface water resources from pollutants in urban stormwater runoff

Objective: Provide public education about stormwater management

Action:

- Implement stormwater education as required for Owatonna under the MS4 permit

Objective: Administer and enforce stormwater runoff controls during construction activities

Actions:

- Require all NPDES plans be implemented as part of local permits for construction sites and other areas without permanent vegetative cover
- Inspect sites or require self-certification of stormwater control implementation during and after construction

Objective: Develop storm water runoff management and quality standards to use in local ordinances and plans

Actions:

- Administer and Enforce the City of Owatonna Stormwater Ordinance that was adopted in 2008
- Update existing stormwater management standards as needed for development projects in Steele County in an effort to minimize the impact that post development runoff will have on water resources

Objective: Provide public education about stormwater management

Action:

- Implement stormwater education as required for Owatonna under the MS4 permit

Objective: Provide water quality treatment and volume control of urban stormwater runoff through the use of stormwater ponds and detention basins.

Actions:

- Complete a detailed inventory of all existing stormwater ponds.
- Maintain and improve all existing stormwater ponds. Retrofit existing ponds for additional stormwater treatment and retention

Objective: To work towards complying with TMDL waste load allocations for turbidity and bacteria in the Straight River and Maple Creek.

Actions:

- Develop educational materials for the public and elected officials about the concerns and importance of TMDL requirements
- Install structural best management practices that encourage detention, infiltration, and volume reduction of stormwater prior to discharge to impaired waters

Priority Concern: Animal Feedlot Manure Runoff into Surface Waters

Goal: To protect surface water resources from open lot runoff and surface applied manure from animal feedlots

Objective: Address open lot feedlot manure runoff problems

Action:

- Provide technical and financial assistance to open lot owners to make improvements that reduce runoff

Objective: Minimize the impact that surface applied manure from animal feedlots will have on surface water quality

Actions:

- Work with local agronomists and agronomy centers to ensure that manure is included in the overall farm nutrient management plan
- Provide information and education about manure management BMP's and modern equipment technology to producers who apply their own feedlot manure
- Provide financial assistance to producers and commercial applicators for manure application equipment and manure storage facilities