# Lower Minnesota River Watershed: Water Plans

The Lower Minnesota River Watershed encompasses Carver, Dakota, Hennepin, Le Sueur, McLeod, Nicollet, Renville, Rice, Scott, and Sibley Counties. Within these counties watershed districts (WDs) and Watershed Management Organizations (WMOs) have been organized. Each county, WMO, and WD 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, WMOs and WDs 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 from each county, WMO and WD, and (2) A summary of each water plan in the watershed including priority concerns, goals and objectives, and actions related to nutrient management.

Water Plans:

Black Dog Watershed Management Plan 2012-2022
Carver County WMO Water Resources Management Plan 2010-2020
Gun Club Lake WMO Watershed Management Plan 2007
Le Sueur County LWMP 2006-2015 amended 2011
Lower Minnesota River Watershed Management Plan 2011-2020
McLeod County LWMP 2013-2023
Nicollet County LWMP 2008-2018
Nine Mile Creek Water Management Plan 2006
Prior Lake-Spring Lake Water Resources Management Plan 2010-2019 amended 2013
Renville County LWMP 2013-2023
Rice County LWMP 2004-2014 amended 2010
Richfield-Bloomington WMO Watershed Management Plan 2008
Riley Purgatory Bluff Creek Water Management Plan 2011
Scott County Water Resources Management Plan 2009-2018 amended 2013
Sibley County LWMP 2013-2023

# Water Plan Evaluation

| Concern | Black Dog | Carver | Gun Club Lake | Le Sueur | Lower Minnesota |
|---|---|---|---|---|---|
| Groundwater | | | | | |
| Surface Water | | | | | |
| Coordination/Partnership | | | | | |
| Education | | | | | |
| Stormwater Management | | | | | |
| Monitoring | | | | | |
| Shoreland Management | | | | | |
| Wetlands | | | | | |
| Erosion Control | | | | | |
| Technical/Financial Assistance | | | | | |
| Sediment | | | | | |
| Seek Funding | | | | | |
| TMDL - Impaired Water | | | | | |
| Conservation BMPs | | | | | |
| Drainage Management | | | | | |
| Feedlot Compliance | | | | | |
| SSTS/ISTS | | | | | |
| Water Retention | | | | | |
| Watershed-based Approach | | | | | |
| Development Concerns | | | | | |
| Nutrient Management | | | | | |
| Abandoned Wells | | | | | |
| Municipal Wastewater | | | | | |
| Nonpoint Source Pollution | | | | | |
| Priority Pollutants | | | | | |
| Wellhead Protection | | | | | |
| Lake Management Plan | | | | | |
| Manure Management Plan | | | | | |
| New Technology | | | | | |
| Demonstrations | | | | | |
| Point Source Pollution | | | | | |

Concerns addressed in County Water Plan associated with nutrient issues

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

# Water Plan Evaluation (contin.)

| Concern | McLeod | Nicollet | Nine Mile Creek | Prior Lake-Spring Lake | Renville |
|---|---|---|---|---|---|
| Groundwater | | | | | |
| Surface Water | | | | | |
| Coordination/Partnership | | | | | |
| Education | | | | | |
| Stormwater Management | | | | | |
| Monitoring | | | | | |
| Shoreland Management | | | | | |
| Wetlands | | | | | |
| Erosion Control | | | | | |
| Technical/Financial Assistance | | | | | |
| Sediment | | | | | |
| Seek Funding | | | | | |
| TMDL - Impaired Water | | | | | |
| Conservation BMPs | | | | | |
| Drainage Management | | | | | |
| Feedlot Compliance | | | | | |
| SSTS/ISTS | | | | | |
| Water Retention | | | | | |
| Watershed-based Approach | | | | | |
| Development Concerns | | | | | |
| Nutrient Management | | | | | |
| Abandoned Wells | | | | | |
| Municipal Wastewater | | | | | |
| Nonpoint Source Pollution | | | | | |
| Priority Pollutants | | | | | |
| Wellhead Protection | | | | | |
| Lake Management Plan | | | | | |
| Manure Management Plan | | | | | |
| New Technology | | | | | |
| Demonstrations | | | | | |
| Point Source Pollution | | | | | |

Concerns addressed in County Water Plan associated with nutrient issues

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

# Water Plan Evaluation (contin.)

| Concern | Rice | Richfield-Bloomington | Riley Purgatory Bluff Creek | Scott | Sibley |
|---|---|---|---|---|---|
| Groundwater | | | | | |
| Surface Water | | | | | |
| Coordination/Partnership | | | | | |
| Education | | | | | |
| Stormwater Management | | | | | |
| Monitoring | | | | | |
| Shoreland Management | | | | | |
| Wetlands | | | | | |
| Erosion Control | | | | | |
| Technical/Financial Assistance | | | | | |
| Sediment | | | | | |
| Seek Funding | | | | | |
| TMDL - Impaired Water | | | | | |
| Conservation BMPs | | | | | |
| Drainage Management | | | | | |
| Feedlot Compliance | | | | | |
| SSTS/ISTS | | | | | |
| Water Retention | | | | | |
| Watershed-based Approach | | | | | |
| Development Concerns | | | | | |
| Nutrient Management | | | | | |
| Abandoned Wells | | | | | |
| Municipal Wastewater | | | | | |
| Nonpoint Source Pollution | | | | | |
| Priority Pollutants | | | | | |
| Wellhead Protection | | | | | |
| Lake Management Plan | | | | | |
| Manure Management Plan | | | | | |
| New Technology | | | | | |
| Demonstrations | | | | | |
| Point Source Pollution | | | | | |

Concerns addressed in County Water Plan associated with nutrient issues

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

# Black Dog Watershed Management Plan 2012-2022

## Priority Concern: Water Quality

**Goal: Maintain or restore the water quality of the BDWMO water resources to meet state water quality standards and allow for the continuation or enhancement of existing intended uses.**

**Goal: Improve the quality of stormwater runoff reaching the Minnesota River by reducing nonpoint source pollution (including sediment) carried with stormwater runoff.**

**Goal: Maintain or improve the quality of stormwater runoff reaching the calcareous fen (Black Dog fen) and the nearby trout streams.**

Actions:

- All waterbodies in the BDWMO will be classified and managed according to either the BDWMO waterbody classification system or the city's wetland classification system (see member city management plans). The BDWMO will classify strategic waterbodies; member cities will classify all other waterbodies.
- Cooperate with the affected communities and the MPCA in developing TMDLs and associated implementation plans for waterbodies within the BDWMO, as needed.
- At least biennially, the BDWMO will discuss water quality issues in the Credit River watershed downstream of the BDWMO with the Scott WMO.
- Monitor the water quality of its strategic waterbodies and will submit its monitoring data to the MPCA for entry into the MPCA's water quality database, EQuIS (Environmental Quality Information System).
- Perform habitat monitoring (see Section 2.13.2) of all strategic waterbodies at least once every five years. This program includes monitoring of biological and physical indicators.
- Protect strategic waterbodies from degradation relative to certain thresholds, or "action levels." The BDWMO, with the involvement of member cities, will conduct diagnostic-feasibility studies for strategic waterbodies (see Table 4-1) to determine the needed water quality improvement projects and the estimated costs of the projects.
- Limit its water quality management roles not explicitly defined in this Plan to those involving intercommunity watersheds, or those requested by the involved cities.
- Continue to manage the "strategic" waterbodies. The strategic waterbodies are Crystal Lake, Orchard Lake, Keller Lake, Kingsley Lake, and Lac Lavon.
- Recommend actions or projects for strategic waterbodies as necessary, following the process outlined in Table 4-1.

- Continue to cooperate with the member cities in resolving issues related to the member cities' implementation of BDWMO-directed or TMDL-recommended water quality improvement projects.
- Help facilitate in allocating costs for TMDL implementation tasks aimed at achieving the required load allocations (pollutant loads not assigned to permitted MS4s) outlined in the approved TMDL
- Partner with the Dakota County SWCD or other organizations to sponsor and implement water quality improvement projects on residential, commercial, or public properties through existing cost share and assistance programs (e.g. installing residential rain gardens through the Blue Thumb Program).
- Continue to manage all MDNR public waters for nondegradation as required by their MS4 permits.
- All Category I-III waterbodies should be managed to preserve and promote biodiversity and improve habitat quality.
- Supports implementation of in-lake chemical treatments only after watershed load reductions have been considered or implemented.
- Member cities are encouraged to explore the outcome of the MPCA Minimum Impact Design Standards (MIDS) project study as a source of potential ideas/regulatory tools to manage water quality and address MPCA anti-degradation requirements.
- The BDWMO and member cities will share water quality data and trend analyses
- Encourages the member cities to take full advantage of redevelopment as an opportunity to achieve water quality improvements. The BDWMO will work with member cities to identify water quality improvement opportunities in redevelopment areas and help secure funding for such projects, as requested.

## Priority Concern: Water Quantity and Flooding

**Goal: Manage intercommunity stormwater flows.**

**Goal: Minimize flood damage to private and public property, and protect against increased flooding caused by development and redevelopment activities.**

Actions:

- Serve as a facilitator for intercommunity flood control issues (issues where the tributary watershed spans more than one city or outflows cross city/county/WMO boundaries).
- Coordinate intercommunity stormwater runoff design and planning with the member communities by:
    - Reviewing each member city's local water management plan for consistency with the BDWMO goals and intercommunity planning.
    - Calculating the cost apportionment between cities for water resources projects with intercommunity participation at the request of the cities involved.

- Promotes stormwater volume reduction through infiltration practices (e.g., bioretention, porous pavement) on all new development and redevelopment sites where such practices are feasible and do not pose a risk to groundwater resources.
- As part of updating local water management plans, member cities will review development regulations (zoning and subdivision ordinances). The BDWMO recommends cities amend regulations as practicable to remove/reduce obstacles to LID practices, including opportunities to reduce impervious surfaces.
- Encourage the member cities to reduce discharge rates wherever possible, with the goal of reducing discharge rates to predevelopment levels (or lower) (see Section 4.9 – BDWMO Performance Standards).
- Encourage the member cities to recruit volunteers to participate in the MDNR's lake level monitoring program for MDNR public waters. The BDWMO will assist member cities through "call for volunteers" articles in the BDWMO newsletter, on the BDWMO website, or other appropriate means.
- If outlets are needed from landlocked basins, the BDWMO encourages cities to keep outflow rates low to allow for as much infiltration as appropriate, while not causing extended periods of high water levels that may have negative effects.
- Require member cities to analyze the water quality and flooding impacts of proposed outlets from landlocked basins on intercommunity flows or any downstream strategic waterbodies prior to construction of the outlets.
- The member cities shall consider the effects of events larger than the 100-year flood when setting minimum building elevations. Higher minimum building elevations should be considered for structures adjacent to ponding areas with large tributary watersheds and for structures adjacent to landlocked basins.
- Member cities shall consider the possibility of long duration events, such as multiple-year wet cycles and high runoff volume events (e.g., snowmelt events that last for many weeks) when establishing high water elevations and the need for outlets from landlocked basins.

## Priority Concern: Erosion/Sedimentation

### Goal: Limit and/or decrease erosion and sedimentation through controls to protect water quality, habitat, and infrastructure

Actions:

- Facilitate intercommunity erosion and sediment control projects by performing studies, preliminary designs, feasibility reports, and calculating the cost apportionment between cities, as requested by the cities.
- Require conveyance system discharges to be designed so as to prevent or minimize the potential for bank, channel, or shoreline erosion.
- Member cities shall consider the following for the design of shoreline stabilization measures, in addition to standard engineering and economic criteria: unique or special site conditions, energy

dissipation potential, adverse effects, preservation of natural processes and habitat, and aesthetics.

- Member cities shall continue managing erosion and sediment control permitting programs and ordinances as required by their NPDES MS4 permit and the NDPES Construction Stormwater General Permit. Procedures for reviewing, approving, and enforcing erosion and sediment control plans shall be described in local water management plans.

## Priority Concern: Wetland and Habitat Management

**Goal: Preserve the ecological quality of wetlands for water retention, recharge, soil conservation, habitat, aesthetics, and natural enhancement of water quality.**

**Goal: Achieve no net loss of wetlands in the BDWMO, while conforming to the Minnesota Wetland Conservation Act (WCA) and associated rules (Minnesota Rules 8420).**

Actions:

- Continue to enforce wetland management standards as defined by each member city (see Table 3-1), but including at a minimum:
    - Buffer strip width requirements depending on protection level or management classification (no less than 16.5 feet).
    - Limits on water level bounce during storm events depending upon wetland protection level or management classification.
- Require member cities to maintain wetland protection ordinances based on comprehensive wetland management plans or wetland functions and values assessments
- Require member cities to maintain an inventory of wetlands, including assessment of functions and values, either as part of a comprehensive wetland management plan or on an as-needed basis.
- Continue to use wetland management systems to effectively manage the wetlands within the BDWMO. A wetland classification system similar to MnRAM3 is recommended.
- The member cities may request that the BDWMO classify and set goals for certain wetlands; the BDWMO commissioners will decide whether to take on the responsibility.

## Priority Concern: Shoreland, Habitat, and Open Space Management

**Goal: Protect and enhance fish and wildlife habitat within the BDWMO.**

**Goal: Maintain or improve shoreland integrity, preserve and enhance the ecological quality of shoreland areas as it relates to wildlife habitat, aesthetics, soil conservation, and natural improvement of water quality.**

**Goal: Preserve and enhance the quality of open spaces.**

**Goal: Protect and increase recreation opportunities within the BDWMO.**

Actions:

- Promote and encourage protection of non-disturbed shoreland areas, restoration of disturbed shorelines, and the creation of buffer zones along shorelines. This will be done by sponsoring shoreline management and restoration workshops through the Blue Thumb Program or other similar programs, as opportunities allow.
- Member cities shall minimize impacts to and will restore to the extent practicable lakeshore vegetation during and after construction projects.
- Encourage public and private landowners to maintain wetlands and open space areas for the benefit of wildlife through education and by providing information on various grant programs.
- Encourage member cities to address disturbed shoreland areas in local water management plans, including lakeshore areas. This may include identification, ranking, and mapping of disturbed shoreland areas. The BDWMO will provide member cities with results from the BDWMO habitat monitoring program and information on various grant programs to assist with these activities.
- Member cities are to maintain control and responsibility for shoreland regulation according to state and local regulations.
- Member cities shall consider opportunities to maintain, enhance, or provide new open spaces and/or habitat as part of wetland modification, stormwater facility construction, redevelopment, or other appropriate projects that:
    - Increase beneficial habitat, wildlife and recreational uses; promote infiltration and vegetative water use; and
    - Decrease detrimental wildlife uses (such as beaver dams, goose overabundance) that damage water control facilities, shoreline vegetation, water quality, or recreational facilities.

## Priority Concern: Groundwater

**Goal: Protect the quality and quantity of groundwater resources**

Actions:

- Encourage member cities to provide increased green space, grassed waterways, native vegetation, and infiltration facilities wherever such actions are possible and do not pose a risk to groundwater resources, to allow for the infiltration of stormwater runoff and promote groundwater recharge.
- Work with and encourage member cities to join Dakota County or other entities in efforts to promote awareness of groundwater resource issues through public education programs, data sharing, and other information programs.

- Support all the policies in the Dakota County groundwater plan and will cooperate with Dakota County, Minnesota Department of Health, and the MDNR to protect sensitive groundwater areas.
- Encourage member cities to protect recharge areas and groundwater resources from potential sources of contamination, including contamination associated with the infiltration of stormwater.
- Member cities shall continue their management programs and ordinances pertaining to subsurface sewage treatment systems (SSTS), consistent with state and local rules and shall follow the Metropolitan Council's Waste Discharge Rules regarding requirements and timing of connections to sanitary sewer service.

## Priority Concern: Administration

**Goal: Promote local regulation of water resources by delegating day-to-day management of the BDWMO's water resources to the member cities.**

**Goal: Provide administrative guidance to member cities through this plan and the review and approval of local water management plans.**

**Goal: Provide periodic review of projects proposed to meet policies/goals for strategic waterbodies established in this plan.**

**Goal: Minimize duplication of federal and state rules and standards.**

**Goal: Supplement existing federal and state regulations with specific design standards and criteria that address unique needs of BDWMO resources described in this plan.**

Objective: Project review policies

Actions:

- Continue to review projects and programs of member cities as requested by member cities, or if projects warrant such consideration (e.g., TMDL studies, projects with intercommunity impacts, stormwater management and wetland ordinance revisions), and will provide comments to the member cities within a deadline specified by the city. In addition, the BDWMO requests that the member cities inform the WMO of their plans to implement projects identified in TMDL implementation plans.
- Review any proposed changes to the intercommunity stormwater system to ensure that they are consistent with an approved local water management plan.
- Consult with Scott WMO when reviewing proposed changes to the intercommunity stormwater system in the portion of the BDWMO tributary to the Credit River.
- Review and approve any changes to the approved local water management plan to ensure the local plan is consistent with the BDWMO plan.

- Require member cities to inform the BDWMO regarding revisions to their comprehensive plans that affect water management. The BDWMO requires that stormwater management elements of the city comprehensive plans conform to the BDWMO plan.

Objective: Evaluation and accountability policies

Actions:

- The BDWMO and the member cities will meet annually to discuss progress on the goals set the previous year and set goals for the coming year
- Use an evaluation concept that includes trend analysis, performance analysis and habitat quality analysis. This information will be presented in the annual report and newsletter.
    - Trend analysis will demonstrate water quality and other significant trends at selected waterbodies (see Section 2.10.2.1).
    - The performance analysis will evaluate the implementation of maintenance plans, capital improvement projects, programs, and other items.
    - Habitat quality analysis will be used to detect conditions that may trigger a need for management action (see Section 2.13.2).
- Member cities continue to share information with the BDWMO regarding monitoring/surveying of strategic waterbodies or MDNR public waters within the BDWMO and any management actions or projects performed for those waterbodies so that the BDWMO can compile an annual report.
- Consider developing and/or strengthening standards through a major plan amendment (see Section 5.5) if such action is warranted.

Objective: Financing policies

Actions:

- Pay for implementation program elements through either the BDWMO general fund (the annual contributions of its member cities) or some form of cost sharing, in accordance with the joint powers agreement.
- Apportion the operation and maintenance costs associated with BDWMO improvement projects according to the BDWMO joint powers agreement.
- Fund lake water quality and habitat monitoring, and tracking of water quality and habitat trends undertaken for the strategic water resources through the BDWMO general fund.
- Fund diagnostic feasibility studies for strategic waterbodies through the BDWMO general fund.
- Allocate the costs of intercommunity flood control projects based strictly on hydrology (e.g., stormwater runoff rates).
- Fund more detailed monitoring, such as that required to prepare diagnostic-feasibility studies, only when necessary to meet a BDWMO goal for a strategic water resource.
- Evaluate different cost allocation methods for water quality improvement projects to ensure equitable contributions from member cities.

- Fund internal load reduction projects stemming from TMDLs for lakes with intercommunity shoreline (Crystal Lake, Keller Lake, and Lac Lavon) by building up funds over time.
- Pursue grants and work with member cities to take advantage of grants sought by the member cities.

Objective: Local water management plan policies

Actions:

- The cities must prepare and adopt (local) water management plans that conform to the goals, policies, and standards of the BDWMO plan, including BDWMO Performance Standards listed in Section 4.9. Additionally, member city local management plans shall include the following:
    - Water quality management actions performed or proposed by the member cities for strategic and non-strategic waterbodies or MDNR public waters (see Section 4.1.2, policy 14)
    - Maps of the existing stormwater system, as defined in Section III.D of the MPCA's NPDES Phase II MS4 permit
    - A list or map with areas likely to see the greatest benefit from potential water quality improvement projects
    - Description of operating and maintenance procedures for the cities' stormwater management system, including any underground or overland storage and conveyance components of that system (e.g., pipes, channels, pond outlets).
    - Hydrographs should be provided, if available.
    - Maps and tables showing subwatershed locations and sizes, drainage patterns, outlet elevations, existing or known future outlet information (to the level necessary to achieve the goals of the member city and the BDWMO) and the following information for the 5-year (or 10-year) and 100-year events: existing or known future water levels, existing or known future flow rates, runoff volumes, and live storage volumes.
    - Maps showing subwatersheds tributary to either the Black Dog fen wetland complex or the nearby trout streams

## Priority Concern: Education and Public Involvement

### Goal: Increase awareness and education level of residents, local officials, and city staff regarding water resources and stormwater management.

### Goal: Provide the public with data they need to protect water resources and to understand the impact of land use decisions on water resources

Actions:

- Publish an annual newsletter that summarizes its activities for public distribution.

- Maintain its web site: http://blackdogwmo.org/. The website will be updated with meeting agendas, project updates and reports, annual reports, and educational links.
- Consider the use of social media, email list servers, and other electronic means of communicating with the public.
- Coordinate with member cities to use survey results (when available) or other available public feedback (e.g., public meetings) to assess the success of public education efforts.
- Coordinate and communicate with lake homeowner associations and other appropriate citizen groups as needed.
- Form advisory committees on an as-needed basis.
- Encourage the city technical staff and the agency representatives to attend the BDWMO meetings and provide the BDWMO with updates and provide input on technical issues.
- Disseminate other information to the public regarding the BDWMO, its water resources, stormwater management, etc.
- Continue to partner with the SWCD or similar organizations to achieve shared educational and water quality goals.
- Seek citizen assistance in maintaining monitoring programs that rely on volunteers (e.g., CAMP and WHEP, see Sections 2.9.2 and 2.13.4).
- The BDWMO relies on member cities to maintain public education and outreach programs, as outlined in their NPDES Phase II MS4 permits.

## Priority Concern: BDWMO Performance Standards

Actions:

- Member cities shall maintain or strengthen stormwater, erosion and sediment control, wetland and shoreland regulations. The BDWMO website shall contain links to the city's regulations.
- Require that any project (development or redevelopment of land) that results in 1 acre or more of disturbance shall be subject to/trigger the appropriate member city's stormwater management standards for rate control, volume control, and water quality, as shown in Table 3-2.
- Require that all new stormwater management systems (e.g., pipes, ponds) or stormwater management systems replaced as part of redevelopment conform to the policies presented in this plan.
- For new, redesigned, or replaced stormwater discharge points/outfalls, cities must provide pretreatment (at least grit removal) of stormwater prior to its discharge to category I-III waterbodies and wetlands, the Black Dog Fen, and trout streams.
- Encourage member cities to provide or require (e.g., during redevelopment) pretreatment of stormwater runoff for existing inlets to the stormwater system that receive direct stormwater runoff (i.e., no pretreatment) and are likely to see the greatest benefit from water quality improvement BMPs.

- The City of Lakeville will restrict the Orchard Lake outlet to maintain its peak outflow at 65 cfs to help prevent capacity and erosion problems downstream in Credit River Township and the City of Savage.
- Require that the level of protection along all trunk conveyors, streams, and channels and around all wetlands, ponds, detention basins, and lakes be based on the critical-duration 100-year flood.
- Require that non-trunk stormwater systems provide discharge capacity for the critical-duration runoff event that is not less than a five-year frequency event, preferably a 10-year frequency event (level of service).
- Allow where the planned level of service would cause hardship in operation of a downstream system, the owner may design for a lesser level of service if the following circumstances are present:
    - The proposed new or replacement system will not have a longer life than that of the existing downstream system.
    - It is not practical to incorporate temporary measures into the new system to mitigate the effects of the new system on the downstream system
- Require member cities to ensure that proposed development, redevelopment, and/or infrastructure projects will not overtax the existing downstream stormwater drainage system capacity in terms of rate and volume.
- Require that the member cities secure easements or fee title (or maintenance agreements for private systems) to the stormwater system as areas develop or redevelop.
- Encourage the member cities to incorporate multi-stage outlets into their pond designs to control flows from smaller, less frequent storms and help maintain base flows in downstream open channels.
- Require cities to set minimum building elevations at least one foot above the critical 100-year flood elevation for structures adjacent to inundation areas.
- Require the following rate control standards:
    - The peak rate of stormwater runoff from the developed subwatershed of the site shall not exceed the existing peak rate of runoff for the 2-year, 10-year, and the 100-year storm events. For new development, peak runoff rates will be maintained at or below pre-development rates for all events up to and including the 100-year storm event. “Subwatershed” may be the project site, or may be an area of greater size for which an approved local water management plan meets this criterion.
    - Rates may be further restricted when the capacity of the downstream conveyance system is limited.
- Require member cities to limit runoff rates to levels that allow for safe and stable conveyance of flow through the watersheds in the BDWMO. To this end, the BDWMO requires the following:
    - A hydrograph method based on sound hydrologic theory shall be used to analyze stormwater runoff for the design or analysis of flows in conveyors, streams, and channels and flows to ponds and wetlands.
    - Reservoir routing procedures and critical duration 100-year runoff events shall be used for design of detention basins and outlets.

- Encourage member cities to limit runoff volumes by using designs that limit impervious surfaces and/or incorporate volume control practices such as infiltration to protect surface water quality and provide recharge to groundwater, except in cases where site-specific investigation suggests negative impacts resulting from limiting runoff or increasing infiltration. The BDWMO will cooperate with member cities to identify or evaluate designs intended to achieve this goal.
- Member cities shall encourage reduced connectivity of impervious surfaces through education (e.g. Blue Thumb workshops and newsletter articles), developer agreements, or other appropriate methods.
- Require member cities to limit nutrient loading into waterbodies to prevent them from impairment and/or to improve water quality so they are no longer impaired, to the extent practicable
- Require member cities to protect and maintain downstream drainage systems to provide permanent and safe conveyance of stormwater, and to reduce the frequency and/or duration of downstream flooding.
- All projects disturbing one acre or more must submit an Erosion Control Plan to the MPCA that conforms to the MPCA's NPDES Construction Stormwater General Permit and shall incorporate the appropriate BMPs described in Protecting Water Quality in Urban Areas.
- Structural BMPs that treat stormwater must conform to standard engineering practices.
- continue to enforce wetland management standards as defined by each member city (see Table 3-1), but including at a minimum:
    - Buffer strip width requirements depending on protection level or management classification (no less than 16.5 feet).
    - Limits on water level bounce during storm events depending upon wetland protection level or management classification.

# Carver County WMO Water Resources Management Plan 2010-2020

## Priority Concern: Surface Water Management

**Goal: Maintain or improve the physical, chemical, biological, and aesthetic condition of surface water resources in the CCWMO, taking into account the watershed context of each resource.**

Objective: Shoreland Management

Actions:

- Require all LGUs to update and implement their shoreland ordinance or equivalent development standards in accordance with state regulations
- Review local water plans for compliance with shoreland requirements of this plan.
- Update the Shoreland Management component of the County's Zoning Ordinance to reflect upcoming changes to the minimum shoreland standards in Minnesota Rules Chapter 6120.

Objective: Floodplain Management

Actions:

- Maintain or increase existing water storage capacity below 100-year flood elevations on all waterbodies within CCWMO in order to minimize the severity and frequency of flooding and high water.
- Floodplain Management. Support updates to flood studies and FEMA map revisions as needed or feasible.
- Floodplain Management. Require all LGUs to update and implement their floodplain ordinance or equivalent development standards in accordance with state regulations and this Plan.
- Review local water plans for compliance with the floodplain management requirements of this plan.
- Amend County ordinances so that any volume lost due to fill in the floodplain is mitigated within the same stream reach.
- Complete floodplain map updates as needed.

Objective: Stream Management

Actions:

- Stream Setbacks.

    - Develop stream protection standards (e.g. flexible stream setback standards) that balance environmental protection with sound science and the rights of the private landowner and build on existing studies and available scientific information.
    - Update county ordinance to incorporate stream setbacks. Amend the CCWMO Rules to include stream setback standards. Flexible stream setbacks will be developed using information from the WFVA, NRA, and the factors described in this plan (See Section 2.4).
    - Update the 2000 Carver County Stream inventory
- Stream Restoration.
    - Prioritize restoration of eroded areas on natural streams and/or creeks based on availability of funding, feasibility of implementation, number of project partners, projects that provide multiple benefits will be prioritized above projects that provide only one benefit, projects that restore streambanks in a more natural setting will be prioritized above project that restore streambanks in developed areas, projects that utilize bioengineered solutions will be prioritized above projects that utilize more traditional engineering techniques, inclusion of restoration area on other County or LGU priority lists, inclusion of restoration area in TMDL implementation plans, benefits provided by restoration area to impaired water bodies, and balancing restoration opportunities among major watersheds in the CCWMO.
    - Prioritize stream restoration sites using information from existing studies, TMDL Implementation Plans, and the criteria described in this plan (see Section 2.4).
- Channel Obstructions.
    - Support landowner assistance in evaluating and mitigating the impacts of naturally occurring debris jams on a case by case basis.
    - Provide technical assistance to landowners in evaluating the impacts of naturally occurring debris jams if the obstruction fills approximately 75% of the bankful channel. If it is determined that the obstruction be removed, the County may request the riparian landowner to remove the obstruction. The County reserves the right to assist the riparian landowner with the removal of an obstruction on a case-by-case basis.
- Stream Management – Volume Reductions. Promote additional storage and volume reduction across the watershed through wetland restoration, regional ponding, stream or ditch diversions and impoundments, etc.
- Volume Reductions
    - Prioritize regional ponding projects using Total Maximum Daily Load Studies and Implementation Plans, Local Surface Water Management Plans, and other studies.

Objective: Ditch Regulations

Actions:

- Recognize that historic and current agricultural land uses depend on artificial drainage.

- Maintain the functions of ditches in such a way that the ditch system does not have a detrimental effect on lake and stream water quality (encourage adequate buffers, stable channels, etc.).
- Encourage the use and maintenance of best management practices for ditches that mitigate some of the negative effects of ditched systems while not impeding drainage.
- The Minnesota Public Drainage Law is administered through the Carver County Ditch Board, the Carver County Auditor, and Carver County Soil and Water Conservation District.
- Imp Strategy SW-8 Ditch Regulations. Provide technical and financial assistance for BMPs that mitigate some of the negative effects of ditched systems while not impeding drainage. The CCWMO relies primarily on the SWCD to implement this strategy.
- Imp Strategy SW-9 Ditch Regulations. Review ditch projects (cleanouts, maintenance improvements) through the Carver County
- Ordinance to encourage the use of adequate buffers, stable channels, etc. The CCWMO relies primarily on the SWCD to implement this strategy.

Objective: Outlet Control Structures

Actions:

- Work with LGUs, landowners, and the MN DNR to construct, replace, or repair dams and outlet control structures in the CCWMO. The CCWMO will become involved in the construction, replacement, or repair of an outlet control structure when one or more of the following factors or situations exist:
    - Detriments to the public health and safety or the environment have been demonstrated or are likely due to the condition of an existing dam or outlet structure that does not already have a responsible party to repair and maintain the structure.
    - There is demonstrated need for alteration at an existing outlet where the impacts from the basin or the watershed crossed more than one political boundary.
    - Historical or current disagreements among riparian owners exist on the appropriate type of control structure or outlet condition and a majority of the riparian landowner petition the County to assist in the matter.
- The CCWMO will have a role in the following activities related to outlet controls:
    - Work with the DNR in resolving conflicting interests of riparian property owners and/or the general public;
    - Modeling to assist the DNR in determining the appropriate water level control elevation and capacity for a structure;
    - Structure design and construction;
    - Operation and maintenance of outlet controls; and
    - Funding construction, operation, and maintenance of structures. The CCWMO will seek outside funding of these costs including funding from affected/benefited properties.

Objective: Education

Actions:

- Promote education about the benefits associated with the proper management of surface water resources
- Incorporate the goals, policies, implementation activities listed in this Surface Water Management Chapter into the CCWMO education program. Public involvement processes will be included in the implementation of the activities described above.

## Priority Concern: Impaired Waters and TMDL Approach

### Goal: Receive EPA approval for TMDLs for all listed impaired waters within the CCWMO

Objective: TMDL Approval and Adoption

Actions:

- This water management plan adopts by reference the approved TMDL Studies listed below. This policy may be amended from periodically to incorporate TMDL Studies completed and approved in the future.
    - Carver, Bevens and Silver Creeks Fecal Coliform TMDL
    - Burandt Lake Excess Nutrients TMDL

Objective: TMDL and Implementation Plan Development

Actions:

- Develop or partner in the development of TMDLs and Implementation Plans for listed impaired waters within the CCWMO, with the final goal of EPA approved TMDLs for all listed impaired waters. The CCWMO does not plan to lead all TMDLs within the watershed, as indicated in Tables 3B-1 and 3B-2.
- Complete TMDLs and Implementation Plans for waterbodies in the CCWMO on 303d TMDL List and referenced in this plan, or pursue removal or delisting of waterbodies from the 303d TMDL List as appropriate. The CCWMO does not plan to lead all TMDLs within the watershed, as indicated in Tables 3B-1 and 3B-2.

Objective: TMDL Funding

Action:

- Pursue funding from outside sources to assist in the completion and implementation of TMDLs.

Objective: Local Plans

Actions:

- Require LGUs to recognize and incorporate into their local water plans approved TMDL Implementation Plans
- Review local water plans for TMDL compliance.

Objective: Monitoring

Action:

- Monitor non-sampled waterbodies depending on local needs, petition requests, waterbody condition, or outside funding assistance. Non-sampled waterbodies may eventually be monitored as part of the MPCA's proposed statewide watershed-based assessment program.

Objective: Delisting Requests

Action:

- Ensure waterbodies currently listed on the 303(d) TMDL list are accurately classified and request delisting for shallow waterbodies with a predominance of wetland characteristics.

Objective: Education

Actions:

- Promote education about the benefits associated with the proper management of surface water resources
- Incorporate the goals, policies, implementation activities listed in this Surface Water Management Chapter into the CCWMO education program. Public involvement processes will be included in the implementation of the activities described above.

Objective: TMDL Implementation

Action:

- The CCWMO may periodically amend this chapter and the list of CWWMO Projects and list of CCWMO Potential Projects to incorporate implementation strategies and activities identified in approved TMDL Implementation Plans.

## Priority Concern: Urban Stormwater Management

### Goal: Minimize and mitigate the impacts of urban stormwater runoff on water resources

Actions:

- Develop and apply regulatory standards that help the CCWMO meet its goals.

- Ensure compliance with CCWMO regulatory standards through permitting, monitoring, and enforcement.
- Encourage innovation in meeting CCWMO standards by building flexibility and incentives into CCWMO rules.
- Continue to meet or exceed federal and state requirements for stormwater runoff.
- Establish a capital improvement program and cost share program to provide funding for priority stormwater projects and for landowner Best Management Practices.
- Pursue outside funding opportunities including state, federal, non-profit, and other grants to accelerate implementation of stormwater BMP's
- Promote education about the benefits associated with the proper management of urban stormwater runoff.
- Provide landowners with the technical knowledge to properly manage urban stormwater runoff on their own property.
- Utilize existing studies (Total Daily Maximum Load Studies and Implementation Plans, Local Plans, and other studies) to prioritize project implementation.
- Track and evaluate progress towards the goals, policies, and implementation strategies described in this plan.
- Continue to operate the Water Management Permit Program and apply existing CCWMO Rules until they are amended following the adoption of this plan. The CCWMO Rules will be amended to include the standards described in this plan for rate control, volume control, water quality treatment, floodplain impacts, natural resource impacts, and erosion and sediment control. The rules will allow for flexibility and innovation in meeting the standards.
- Cities are required to prepare a local water management (local) plan that conforms with the CCWMO Plan. The CCWMO is required to review and approve each local plan. More information about local plan requirements can be found in the Administration Chapter.
    - Cities are required to prepare or amend their local water management plans and ordinances to be consistent with the CCWMO Plan within two years of the date of this plan's approval by the BWSR Board. The CCWMO will consider alternative local plan amendment and update schedule requests from LGUs and will try to be flexible on due dates to accommodate the update schedules of other WMOs when LGUs are within the jurisdiction of more than one WMO.
    - City local water management plans are required meet Metropolitan Council and applicable state statute requirements.
    - Cities should seek input and assistance from the CCWMO during the preparation of the local plan.
- Follow and incorporate Total Maximum Daily Load Studies and Implementation Plans.
- Continue to meet or exceed the NPDES Phase II MS4 requirements that apply to the CCWMO stormwater system.
- Collaborate with other LGUs to help them implement their NPDES Phase II MS4 requirements and to minimize duplication and increase efficiency.

- Establish a capital improvement program and cost share program to provide funding for priority stormwater projects and for landowner Best Management Practices.
- Prioritize stormwater retrofit projects and regional ponding projects using Total Maximum Daily Load Studies and Implementation Plans, Local Surface Water Management Plans, and other studies.
- Work with Carver County Public Works to develop and adopt a road maintenance and operation plan using the practices described in this section. Carver County Public Works would be responsible for implementation of the Plan.
- Provide technical assistance to both private and public landowners on stormwater management and the BMPs described in this plan.
- Continue to provide necessary resources for implementation of the Water Management Permit Program, Stormwater Design Standards, and Erosion & Sediment Control Standards. The CCWMO will continue to employ staff or a consultant to perform the following tasks:
    - Review Water Management Applications (including stormwater design standards and erosion and sediment control plans)
    - Inspect BMP installations
    - Monitor sites as recommended by the water plan; and
    - Enforce maintenance through procedures in the water resource management ordinance.
- Continue to monitor construction activities and resolve sediment and erosion problems if and when they arise.
- Evaluate Water Plan policy and implementation effectiveness as part of the CCWMO annual report.
- Develop a list of priority subwatersheds based on watershed susceptibility to water quality degradation, water quantity impacts, streambank erosion, wildlife habitat, recreation, and aesthetic impacts from urban and rural practices. The list of priority subwatershed will be used to focus project implementation in high priority watersheds to reduce impacts of impervious development.
- Develop and maintain a database for stormwater related data, such as the location and type of stormwater infrastructure.
- Continue to monitor stormwater management BMPs to provide information on their effectiveness

## Priority Concern: Wetland Management

### Goal: Manage and restore wetlands in the County to protect and maximize the values of wetlands functions

Objective: Administration & Enforcement

Actions:

- Achieve no net loss in the quantity, quality, and biological diversity of existing wetlands in the CCWMO through competent enforcement of existing laws and regulations (Wetland Conservation Act, Shoreland Management Act, Local Surface Water Management Plans, Total Maximum Daily Load Studies and Implementation Plans, and other relevant laws and regulations).
- Ensure competent administration and enforcement of the Wetland Conservation Act, the Shoreland Management Act, Total Daily Maximum Loads Studies and Implementation Plans, Local Surface Water Management Plans, and other laws and regulations relevant to wetland management by LGU's (county and the cities) within the CCWMO.

Objective: Standards

Actions:

- Develop additional wetland protection standards (e.g. flexible transition setbacks) that balance environmental protection with sound science and the rights of the private landowner and build on existing studies and available scientific information.
- Consider amending the CCWMO Rules to include additional wetland protection standards including, but not limited to, wetland transition setbacks. Flexible transition setbacks will be developed using information from the WFVA, NRA, and the factors described in this plan (See Section 3.2.2). Where further site specific wetland information is presented as part of a detailed site design, wetland functional values may be adjusted.

Objective: Wetland Restoration

Actions:

- Promote wetland restoration, as a way to mitigate historical impacts to wetlands and increase the quantity and quality of wetlands in the CCWMO.
- Develop a list of priority wetland restoration sites. The CCWMO will develop a list of priority wetland restoration sites using the 2003 wetland restoration assessment, the NRA, TMDL Implementation Plans, and the criteria described in this plan (see Section 4.2). The CCWMO will work toward restoring wetlands in cooperation with existing programs through agencies such as the U.S. Fish and Wildlife Service, Soil and Water Conservation District, Reinvest in Minnesota, or through regional stormwater planning by the LGU. The County will prioritize wetland restoration opportunities and will pursue wetland restoration funds on an annual basis.

Objective: Funding

Action:

- Seek and allocate funds through the Capital Improvement Program, the Cost Share Program, and outside sources to accomplish priority wetland restoration projects.

Objective: Education

Actions:

- Promote education about the functions and benefits of wetlands.
- Enable landowners to protect and restore wetlands on their own property.
- Develop programs to educate those who live and work in the watershed about the importance of wetlands and wetland management
- Establish a variety of programs for both private and public landowners for priority natural resources (e.g. wetlands). Programs for landowners may include education and incentive-based conservation activities.

Objective: Data Management

Action:

- Develop and maintain a database for wetland related data, such as the location, type, and acreage of wetland restoration projects, and the location type, and acreage of wetland impacts.

Objective: Plan Evaluation

Actions:

- Track and evaluate progress towards the goals, policies, and implementation strategies described in this plan.
- Evaluate wetland policy and implementation effectiveness as part of the CCWMO annual report.

## Priority Concern: Agricultural Practices

### Goal: Manage feedlots so that the quality of surface water and groundwater is not impaired

Objective: Feedlot Management

Action:

- All feedlots shall obtain a permit as required by County ordinance and shall be operated and managed according to County ordinance and current best management practices.

Objective: Enforcement

Actions:

- The CCWMO relies on the Carver County Feedlot Program to regulate and enforce feedlots. Carver County Land and Water Services Division is responsible for the implementation of the program, with contributions from the following departments and agencies:

    - Carver County Environmental Services – is responsible for the overall operation of the County Feedlot Program and enforcement of the feedlot ordinance. The County Environmental Services Director is the Feedlot Administrator.
    - Carver SWCD – provides technical assistance to Environmental Services and the operator in the feedlot permitting process. The Carver SWCD evaluates feedlots, performs survey and design work, and works with operators in identifying and resolving problems.
    - Carver County Land Management– processes all applications involving buildings or structures; administers the conditional use permit process for large feedlots or feedlots in shoreland zones.
    - Carver County Planning and Water Management – provides educational opportunities to feedlot operators.
    - NRCS - provides survey and design work and other technical assistance to operators along with the Carver SWCD.
- If needed, prioritize permitting enforcement based on complaints, proposed changes to existing operations (i.e. additional buildings or expansion), location of feedlot relative to sensitive areas, and feedlots located with subwatersheds that are targeted for TMDL implementation.

Objective: Education

Action:

- Provide educational opportunities to encourage feedlot operators to operate in accordance with existing regulations.

Objective: Financial Assistance

Actions:

- Provide financial assistance and/or incentives to encourage existing feedlot operations to upgrade to meet current standards, as funding allows. Existing financial resources include:
    - TMDL grant funding;
    - State Cost Share Funds; State Revolving Loan Funds;
    - BWSR Natural Resources Block Grant;
    - NRCS – EQIP ( Environmental Quality Incentives Program) ; and
    - BWSR Challenge Grants.

## Goal: Encourage public and private landowners to implement conservation practices on the land they are responsible for

Objective: Incentive-based approaches

Action:

- Utilize an incentive based-approach to encourage the use of conservation practices and other best management practices in agricultural areas.

Objective: Project Prioritization

Action:

- Focus implementation using TMDL studies and Implementation Plans

Objective: Landowners Assistance

Actions:

- Provide technical assistance to rural landowners interested in making improvements
- As discussed in this section, there is a wealth of knowledge related to water resource practices that landowners can implement. Getting the word out and providing the technical assistance or experts from outside the County to interested landowners is a key to the program's success.

Objective: Financial Assistance

Action:

- Provide financial assistance and seek grants from other funding sources in order of priority watersheds and for willing landowners. The funding should be used to implement projects on both private and public property and to assist with education promotions

Objective: Partnership

Action:

- The CCWMO relies, in large part, on the Carver County SWCD to implement rural land use practices. The CCWMO will work with the Carver SWCD to prioritize education, technical assistance, and funding for rural practices as described in this section. First priority will go toward promoting buffer strips, nutrient management, and rock inlet construction. Second priority will go toward tillage and pest management practices.

Objective: Seek funding sources and matching grants

Action:

- The CCWMO will seek funding sources relevant to education and implementation of private landowner practices that will help improve the water quality and water quantity issues within a watershed. State and federal agencies such as the BWSR, NRCS, USDA, U.S. Fish and Wildlife, MPCA and non-profit agencies such as the Nature Conservancy and Friends of the Minnesota River offer matching funds to a variety of programs that support and encourage private

landowner practices that will improve water resources. More and more matching grants encourage partnerships with the private and public sector and a sound watershed management plan. TMDL implementation funding and Clean Water Legacy funding will be important sources of funding.

## Priority Concern: Sanitary Sewer Discharge

**Goal: Ensure, to the extent possible, that all SSTS are properly designed, installed, operated, maintained and/or replaced in order eliminate health hazards and discharges to surface water or groundwater.**

Objective: Regulatory Controls

Actions:

- Follow and implement all state statutes and rules as they are updated. State rules, statutes, and standards change periodically. The County implements the State standards through the SSTS ordinance. The ordinance also includes provisions that the County feels are necessary due to local conditions. At the time of writing of this chapter the County is in the process of updating the SSTS ordinance to comply with the most recent changes in statute and rule.
- Implement the provisions of the County SSTS Ordinance. The SSTS ordinance regulates the design, location, installation, construction, alteration, extension, repair, and maintenance of SSTS's. The County currently enforces the ordinance in the unincorporated area; cities have historically been responsible in their jurisdiction. The law gives responsibility throughout the county unless a city specifically develops and implements its own program and SSTS ordinance.
- Require all lot splits and plats to have systems upgraded. Any time a lot is split or platted, the County requires that the septic system be inspected and brought into compliance. There are currently some limited exceptions to this rule – the appropriate ordinances should be changed to eliminate any loopholes

Objective: Connect to Municipal Systems

Action:

- Eliminate SSTSs in cities by connection to municipal systems. An easy way to remove non-compliant systems is connect the systems to a central sewer system. In most cases in the unincorporated area, this is not feasible for financial and system design reasons. Most systems located near municipalities will slowly be absorbed by growing urban areas and will be connected to municipalities as is feasible.

Objective: Proper Maintenance

Action:

- Continue to implement programs to ensure proper maintenance of SSTS – education, incentives, notification, and inspection. Much of the contamination risk in the county stems from improperly maintained systems. A variety of strategies have been and will continue be used to ensure system maintenance. These strategies include educational programs, incentive programs, notification programs, and inspection programs.

Objective: Proper Disposal

Action:

- Develop and implement a process to eliminate improper disposal, and improper land application of septic waste pumped from SSTS. In addition to improper maintenance of SSTS, improper disposal of pumped waste can pose a direct contamination risk to surface and groundwater. The land use  Carver County Water Plan 3F Sanitary Sewer Discharge September 2010 3F.6 Practices chapter of this section provides more detail on the process for encouraging proper disposal of this waste

Objective: Monitor New SSTS Technologies

Action:

- Continue to develop and implement programs, including financial incentives, focused on the replacement of direct discharge systems with highest priority given to TMDL implementation. The replacement of existing failing systems is a major component of an SSTS program. The replacement process can be accelerated by providing financial assistance to property owners. As funding allows, the County and CCWMO will continue to provide assistance to property owners to replace old, failing systems, through grants, loans, and other financial assistance.

### Goal: Ensure that waste load reductions for WWTPs identified in TMDLs are incorporated into WWTP permits.

Objective: Urban Discharge

Actions:

- Ensure that waste load reduction for WWTPs identified in TMDLs are incorporated into WWTP permits
- Coordinate with the MPCA, WWTP operators, LGUs, etc., to ensure that waste load reductions identified through the TMDL process are incorporated into WWTP permits

## Priority Concern: Upland Natural Resources

**Goal: Preserve and restore aquatic, wetland and associated upland habitats in a watershed context.**

Actions:

- Increase the quantity, quality, and biological diversity of existing natural areas in the CCWMO through competent enforcement of existing laws and regulations (Wetland Conservation Act, Shoreland Management Act, Local Surface Water Management Plans, Total Maximum Daily Load Studies and Implementation Plans, and other relevant laws and regulations) and through the participation of willing landowners in existing preservation and restoration programs.
- Promote natural area restoration, as a way to mitigate the degradation and fragmentation of natural resources and increase the quantity and quality of natural areas in the CCWMO.
- Educate landowners about the functions and benefits of upland natural resources.
- Provide landowners with opportunities to protect, preserve, enhance or restore natural resources on their property.
- Focus funding and staff resources towards higher priority resources while factoring in other planning efforts and landowner willingness.
- Maintain and update the Minnesota Land Cover Classification System (MLCCS), Natural Resource Assessment, Restoration Assessment, and Corridor Assessment data.
- The County may invest in studies or acquire new data to better evaluate natural resource within the county. County staff may periodically update the NRA to incorporate better data as it becomes available.
- Implement conservation and restoration projects on county-owned land including parks and road rights-of-way, as feasible.
- Explore options for creating County funding to protect or restore natural areas including trading or offsets for implementing TMDLs and/or CCWMO Levy funding for capital projects.
- Seek and allocate funds through the Capital Improvement Program, the Cost Share Program, and outside sources to accomplish restoration and conservation projects.
- Coordinate with Carver County Land Management on the implementation of the Conservation Incentive Zoning option.
- Develop a natural area protection and restoration program for interested landowners with the following elements.
    - Collect, synthesize and distribute resource protection and restoration strategies for landowners incorporated into an educational plan.
    - Assist landowners in the creation of management plans for priority natural resources on their property.
    - Partner with agencies such as the Carver County Soil and Water Conservation District, the Minnesota Department of Natural Resources, the Natural Resources Conservation Service, and the University of Minnesota Extension Service in developing and delivering programs.

    - Evaluate and identify sources of funding for education and cost-share programs, possibly including: grants from agencies and foundations; county general fund; and watershed district funding.
- Evaluate upland natural resource policy and implementation effectiveness as part of the CCWMO annual report.

## Priority Concern: Groundwater Management

**Goal: Protect groundwater quality and groundwater supplies**

Actions:

- Protect water supplies by assisting in the implementation of the MDH Wellhead Protection program.
- Prevent possible aquifer contamination by identifying and sealing unused, unsealed wells.
- Support the Metropolitan Council in their efforts to monitor and protect regional groundwater supply.
- Support the MPCA in regulating storage tanks to eliminate the risk of groundwater contamination Include wellhead protection in the CCWMO Education Program.
- Assist public water supply well operators. Assistance may include providing inventories of potential contaminant sources, mapping and other GIS data, and providing input to WPA committees and plans.
- Continue to operate the well sealing cost share program.
- Collaborate with the DNR and Metropolitan Council in efforts to plan for and monitor water appropriation and long term demand.
- Include, as appropriate, water conservation efforts in the overall CCWMO Education Program.
- Consider updating the Groundwater Chapter of the Plan upon the completion of the Carver County Geologic Atlas

## Priority Concern: Education

**Goal: To provide those living, working, and recreating in Carver County with the knowledge, skills, and motivation required to assure protection and improvement of the county's surface water and groundwater resources.**

Actions:

- Carver County recognizes that education can play a key role in the protection of groundwater and surface water resources. The County supports and encourages education efforts which target a wide range of issues and audiences in the county.
- Carver County will include a water education program as part of implementing this Plan. This will include development of, and annual review of a one-year workplan that outlines education efforts. High and medium priority objectives shall be identified in this workplan.

- Education efforts shall be coordinated between all involved (local, regional, state and federal agencies). Duplicative or overlapping efforts should be reduced as much as possible in order to increase efficiencies and present unified messages in an education program.
- The County strongly encourages LGU's and other agencies to participate in, and initiate education efforts.

## Priority Concern: Monitoring and Assessment

**Goal: To maintain a comprehensive, accurate assessment of surface and ground water quality trends over the long term and comply with all current and future TMDL's monitoring and assessment protocols. This data will used to compile trend analysis, assess BMP effectiveness, and complete TMDL studies.**

Objective: Policies

Actions:

- The CCWMO should continue to monitor lakes, streams, wetland areas, and groundwater to assess water quality trends over the long term.
- The CCWMO should continue to monitor lakes, streams, wetland areas, and groundwater to comply with TMDL studies and Implementation Plans.
- The CCWMO should set goals for water quality in lakes, streams and wetland areas as more data becomes available and Carver County Water Plan 3K Monitoring and Assessment
- September 2010 3K.5 as reasonable expectations can be developed. These goals are developed as part of the TMDL process.
- The CCWMO should establish monitoring networks as required in TMDL Implementation Plans and when needed to complete TMDL studies.
- The CCWMO should partner with municipalities and adjacent watershed districts to monitor additional water resources.

Objective: Surface Water

Bevens Creek Watershed

Actions:

- Maintain baseline water quality data for the lakes in the watershed, with priority given to those on the impaired waters list or that have completed TMDL Implementation Plans.
- Establish and/or maintain any lake or stream sampling sites that are needed or have been established as part of a TMDL study or TMDL Implementation Plan.
- Maintain current monitoring regimes or conform as dictated by TMDL studies or TMDL Implementation Plans for fecal coliform (or E.coli) bacteria.

- Maintain all automated stream sampling sites (Tacoma, BE 9, BE 21, SI 2, Sibley) within the watershed, and ensure the Met Council sites are not abandoned.
- Maintain bio-monitoring data at sampling sites as volunteers and funding dictate.

Carver Creek Watershed

Actions:

- Maintain baseline water quality data for the lakes in the watershed, with priority given to those on the impaired waters list or that have completed TMDL Implementation Plans.
- Establish or maintain any lake or stream sampling sites that are needed or have been established as part of a TMDL study or TMDL Implementation Plan.
- Maintain current monitoring regimes or conform as dictated by TMDL studies or TMDL Implementation Plans for fecal coliform (or E.coli) bacteria.
- Maintain all automated stream sampling sites (CA 8_7, CA 10_4, Bent Cr) within the watershed, and ensure not to abandon the Met Council site.
- Maintain bio-monitoring data at sampling sites as volunteers and funding dictate.

Crow River Watershed

Actions:

- Maintain baseline water quality data for the lakes in the watershed, with priority given to those on the impaired waters list or that have completed TMDL Implementation Plans.
- Establish or maintain any lake or stream sampling sites that are needed or have been established as part of a TMDL study or TMDL Implementation Plan.
- Maintain current monitoring regimes or conform as dictated by TMDL studies or TMDL Implementation Plans for fecal coliform (or E.coli) bacteria.
- Continue to partner with the Met Council to operate the automated WOMP station on the Crow River and ensure it is not abandoned.
- Maintain bio-monitoring data at sampling sites as volunteers and funding dictate.

Chaska Creek – West Watershed

Actions:

- Maintain baseline water quality data for the lakes in the watershed, with priority given to those on the impaired waters list or that have completed TMDL Implementation Plans.
- Establish or maintain any lake or stream sampling sites that are needed or have been established as part of a TMDL study or TMDL Implementation Plan.

- Maintain current monitoring regimes or conform as dictated by TMDL studies or TMDL Implementation Plans for fecal coliform (or E.coli) bacteria.
- Maintain all automated stream sampling sites (CH 1_0) within the watershed.
- Maintain bio-monitoring data at sampling sites as volunteers and funding dictate.

Chaska Creek – East Watershed

Actions:

- Maintain baseline water quality data for the lakes in the watershed, with priority given to those on the impaired waters list or that have completed TMDL Implementation Plans.
- Establish or maintain any lake or stream sampling sites that are needed or have been established as part of a TMDL study or TMDL Implementation Plan.
- Maintain all automated stream sampling sites (EC 1, EC 2, EC 3) within the watershed, and ensure the Met Council site is not abandoned.
- Maintain current monitoring regimes or conform as dictated by TMDL studies or TMDL Implementation Plans for fecal coliform (or E.coli) bacteria.
- Establish bio-monitoring data at sampling sites as volunteers and funding dictate.

Groundwater

Actions:

- Carver County will continue to sample and test groundwater as funding allows.
- Groundwater samples will be tested for nitrate, nitrite, ammonia, chloride, sulfate, soluble phosphorus, silica, fluoride, and specific conductivity, arsenic and tritium. To determine if a representative sample from the aquifer has been collected, pH, temperature, dissolved oxygen, conductivity and oxidation-reduction potential will also be measured.
- State Testing. Additional testing may occur through the MDA, the MDH, or the MPCA. Data from these tests will be included with future County results.

Stormwater BMPs

Action:

- Carver County will continue to monitor stormwater best management practices as funding allows.

Annual Water Quality Report

Actions:

- Prepare an annual monitoring water quality monitoring report

# Gun Club Lake Watershed Management Plan 2007

## Priority Concern: Lake and Stream Water Quality Problems

Objective: Continue collection of water quality monitoring data for lakes and other waterbodies within the watershed

Actions:

- During 2007 – 2009 the GCLWMO will implement the Surface Water Assessment Grant (2007-2009) to conduct citizen lake monitoring on seven waterbodies within the GCLWMO. This information will provide direction to the member communities and the Board on future monitoring needs.
- The GCLWMO will continue to ask local communities to continue to review and update as necessary their system to evaluate water quality assessments to determine conformance with local guidelines.

Objective: Make lake management plans for areas that have been identified as impaired waters (Fish Lake – excess nutrients; Schwanz Lake – excess nutrients; Blackhawk Lake – mercury)

Action:

- The approved City of Eagan Water Quality Plan has identified lake management plans for these water bodies which will establish a recommended long term management program. The GCLWMO will also further explore collaboration options related to how to add value to the implementation of TMDL / lake management plans.

Objective: Maintain lakes and waterbodies within the GCLWMO from degradation due to erosion within the shoreland area adjacent to the basin

Action:

- The GCLWMO will shoreland restoration grant program in partnership with Dakota County Soil and Water Conservation District (2007-2008).

## Priority Concern: Flooding and Stormwater Rate Control Concerns within the Watershed

Objective: Manage high water issues within the Lebanon Hills Regional Park

Objective: Protect wetlands that have been hydrologically connected to the City stormwater system

Objective: Regular maintenance of hydrologic system is required to preserve the system's intended use to convey stormwater runoff and provide treatment

Actions:

- The GCLWMO has been an active player in work to reach a tentative agreement between the Cities of Eagan, Apple Valley, Rosemount, Dakota County Parks, and the Vermillion River Watershed Joint Powers Organization to address issues related to flooding within and adjacent to Lebanon Hills Regional Park.
- In addition, GCLWMO will require that flood problems recognized within the approved local plans be recognized in the City's capital improvement program.
- In cases where surface water impacts or the source of impacts transcend municipal boundaries, or the community is found to not be in compliance, the GCLWMO shall review such problems and issue directives to the appropriate local governmental unit or units for resolution. It should be noted that this issue is not relevant to the GCLWMO, given that only one area currently has potential to create intercommunity flows.
- It will be the responsibility of the local communities to implement a project.

## Priority Concern: Flooding or Stormwater Rate Control Issues between the Member Communities

Objective: Mitigate flooding problems in and adjacent to the Lebanon Hills Regional Park

Actions:

- The GCLWMO has been an active player in work to reach a tentative agreement between the Cities of Eagan, Apple Valley, Rosemount, Dakota County Parks, and the Vermillion River Watershed Joint Powers Organization to address issues related to flooding within and adjacent to Lebanon Hills Regional Park.

## Priority Concern: Impacts of Water Quantity or Quality Management Practices on Recreational Opportunities

Objective: Prevent nonpoint source and sediment pollution entering to critical waterbodies in the GCLWMO contributing to the degradation of water quality and affects the recreational opportunities available for residents

Action:

- The GCLWMO will develop strategy to promote wetland buffers in member city parks.

## Priority Concern: Impacts of Stormwater Quality on Fish and Wildlife Resources

Objective: Manage Kennelly and Harnack Creeks, designated trout streams, and Nicols Fen, a calcareous fen, from stormwater runoff directed to this resource

Action:

- Work cooperatively with State, Federal, regional, and non-profit agencies and organizations to pursue grant resources needed to implement the recommendations outlined in the Nicols Fen, Kennealy and Harnack Creeks study.

## Priority Concern: Impacts of Soil Erosion on Water Quality and Quantity

Objective: Manage soil erosion during significant rainfall events, particularly from construction sites, to reduce sediment deposition within the watershed's waterbodies

Objective: Adequate erosion control measures to be utilized within the watershed and that the implementation of BMPs should be addressed in this plan

Action:

- Continue to implement the erosion control programs currently in place within the watershed for areas where construction activity is taking place. The GCLWMO has and will continue to review local municipalities' plans to determine adoption of proper erosion and sedimentation control policies.

## Priority Concern: General Impact of Land Use Practices and in particular, Land Development and Land Alteration on Water Quality and Quantity

Objective: Manage areas of the watershed have been exposed to increased rates and volumes of stormwater runoff as a result of an increase in impervious surface area due to development

Action:

- Member communities have incorporated rate and volume management policies into their approved plans. The GCLWMO will continue to support local ordinance updates that address and manage impervious areas.

## Priority Concern: The Adequacy of Existing Regulatory Controls or Mitigate Adverse Impacts on public Waters and Wetlands

Objective: Manage or mitigate adverse impacts on public waters and wetlands

Action:

- Implement the Gun Club Lake Watershed Management Plan and require the municipalities within the watershed to be the local government units for the administration of the rules associated with the Wetland Conservation Act of 1991 and NPDES Phase II rules.

Objective: Public educational program targeted at educating the public about wetlands and their functions is important

Actions:

- The GCLWMO will participate with Dakota County SWCD to implement landscaping and "blue thumb" type workshops to provide educational opportunities for residents within the WMO to learn about issues concerning wetlands and water resource restoration within the watershed.
- Promote, educate, and possibly assist with shoreline restoration/wetland buffer improvements on private property. In 2007-2008 a restoration grant program will be pursued in partnership with Dakota SWCD.
- Develop a Wetland Management Plan for the WMO through the local communities.

## Priority Concern: The Adequacy of Programs to Limit Soil Erosion and Corresponding Water Quality Degradation

Objective: Limit soil erosion and corresponding water quality degradation, provided that enforcement of these programs is expanded

Action:

- The watershed will require member municipalities to develop soil and sedimentation ordinances concerning construction activities within the watershed. In addition, these ordinances must be contained within the local surface water management plans which will be reviewed by the GCLWMO. The GCLWMO will evaluate performance of ordinance enforcement and compliance programs as part of this annual oversight review program.

## Priority Concern: The Adequacy of Programs to Maintain the Tangible and Intrinsic Values of Natural Storage and Retention Systems

Objective: Maintain the tangible and intrinsic values of natural storage and retention systems

Actions:

- The GCLWMO will encourage member municipalities to complete diagnostic feasibility studies and to implement corrective actions where these cities feel that the tangible and intrinsic value of natural storage and retention systems within their communities are in jeopardy due to influence from water quality and quantity problems.

## Priority Concern: The Adequacy of Programs to Maintain Water Level Control Structures

Objective: Require local municipalities to contain stormwater system maintenance plans within their local stormwater management plans

Action:

- The GCLWMO will review local watershed management plans for conformance with the requirement to establish a storm sewer system maintenance plan which will address water level control structure maintenance

## Priority Concern: The Adequacy of Capital Improvement Programs to Correct Problems relating to Water Quality, Water Quality Management, Fish and Wildlife Habitat, Public Waters and Wetland Management, and Recreational Opportunities

Objective: Address the areas of concern within the watersheds' various recreational and aesthetics waters and wetlands

Action:

- Several programs and projects have been identified in approved local plans to address concerning waters where marked decrease in water quality or wildlife habitat has been recognized.

## Priority Concern: Identification of Potential Problems which are anticipated to occur within the Next 20 Years based on Growth Projections and Planned Urbanization

Objective: Incorporate updated policies and standards to improve downstream waterbodies

Actions:

- The GCLWMO will review local plans to identify possible updates to ordinances and policies to address issues related to redevelopment. If necessary, the GCLWMO will recommend changes to the proposed local definition of redevelopment consistent with GCLWMO policies.

## Priority Concern: The Adequacy of Existing Technical and Background Information on Systems in the Watershed that are Used to Manage Water Resources

Objective: Encourage the development of groundwater protection ordinances when adequate technical and background information becomes available for decision-making.

Action:

- Review local watershed management plans for conformance with providing a ground water protection plan.

Objective: Continue collection of water quality monitoring data for lakes and other water bodies within the watershed.

Actions:

- Analyze and complete long-term water quality monitoring for selected surface waters within the GCLWMO.
- Completion of several lake management studies have been identified within member community local waters.

# Le Sueur County LWMP 2006-2015 amended 2011

## Priority Concern: Impaired Waters/TMDLs

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

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

Actions:

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

Objective: Implement TMDL Implementation Plans by year 2015

Actions:

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

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

Actions:

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

## Priority Concern: Wastewater Treatment

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

Objective: Strengthen and improve ISTS Local Program by December 2015

Actions:

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

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

Actions:

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

## Priority Concern: Stormwater Management

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

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

Actions:

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

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

Actions:

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

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

Actions:

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

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

### Goal: Diminished runoff issues cause by urban and development runoff

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

Action:

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

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

Actions:

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

## Priority Concern: Protection of Undeveloped Shoreline

### Goal: Achieved no net loss of existing natural shoreline

Objective: Respond to 100% shoreland regulation inquiries annually

Actions:

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

### Goal: Achieved a new natural shoreline gain through shoreline restorations

Objective: Complete up to 40 shoreland improvement projects by 2015

Actions:

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

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

## Priority Concern: Drinking Water Protection

### Goal: Protected groundwater quality and quantity

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

Action:

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

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

Actions:

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

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

Actions:

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

## Priority Concern: Agricultural Drainage Management

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

Objective: Apply watershed base principles to drainage system management

Actions:

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

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

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

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

Actions:

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

Objective: Provide education on nutrient management to residents by 2015

Actions:

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

# Lower Mississippi River Watershed Management Plan 2011-2020

## Priority Concern: Organizations Management

**Goal: To manage the different roles of the district**

Objective: To serve as facilitator

Action:

- Work Cooperatively with Local, State, and Federal Forms of Government; Other Agencies; and Non-Government Organizations on Issues Affecting District Resources.

Objective: To serve as an educator

Action:

- Provide public information services

Objective: To serve as a manager

Actions:

- Provide strategic resource evaluation and management
- Research the options of expanding, contracting, or maintaining the District's boundary
- Perform periodic assessments and program reviews
- Use short-term and long-term metrics to measure progress

## Priority Concern: Surface Water Management

**Goal: To protect, improve and restore surface water quality**

Objective: To use classification categories to manage water resources

Action:

- Lower Minnesota River Watershed District – Water Resources Classification Categories (Minnesota River, Floodplain, Upland, or Unique Natural Resources Category)

Objective: To prevent further degradation of water quality

Actions:

- Watershed management standards (stormwater management, construction erosion control, shoreline and streambank alteration, stream and lake crossing, floodplain and drainage alteration, water appropriations, bluffs, and greenways and open space standards)
- Promote disconnected stormwater management and low impact development
- Water quality restoration program
- Dean Lake feasibility/diagnostic study

Objective: Enable information decisions

Actions:

- Modify and continue the monitoring program
- Complete detailed assessments of data
- Coordinate with other agencies and water quality programs

## Priority Concern: Groundwater Management

### Goal: To protect and promote groundwater quality and quantity

Objective: To support and assist in intercommunity management of groundwater

Action:

- Support Wellhead Protection efforts

Objective: To promote groundwater recharge

Actions:

- Adopt infiltration standards
- Promote conservation and wise use of groundwater

Objective: To protect and improve groundwater sensitive water resources

Actions:

- Groundwater monitoring
- Regional modeling

## Priority Concern: Wetland Management

### Goal: To protect and preserve wetlands

Objective: To preserve wetlands for water retention, recharge, soil conservation, wildlife habitat, aesthetics, and natural water quality enhancements

Actions:

- Delegate Wetland Conservation Act (WCA) to LGUs
- Require LGUs to conduct wetland inventories and complete wetland management plans
- Review WCA notices as received
- Wetland standard

## Priority Concern: Floodplain and Flood Management

### Goal: To manage floodplains and mitigation flooding

Objective: To maintain natural water storage areas and the Minnesota River floodway

Actions:

- Floodplain and drainage alteration standard
- Adopt infiltration and peak flow standards
- Manage localized flooding

## Priority Concern: Erosion and Sediment Control

### Goal: To manage erosion and control sediment discharge

Objective: Endorse the NPDES General Permit

Actions:

- Support the NPDES general permit
- Erosion and sediment control standard

Objective: Adopt vegetation management standard

Action:

- Develop a vegetarian management standard/plan

Objective: Manage streambank and mainstem erosion

Action:

- Continue work of addressing gully erosion

Objective: To maintain the integrity of shorelands

Actions:

- Promote and encourage shoreland protection
- Shoreland and streambank standard

## Priority Concern: Commercial and Recreational Navigation

**Goal: To maintain and improve navigation and recreational use of the Lower Minnesota River**

## Priority Concern: Public Education and Outreach Program

**Goal: To increase public participation and awareness of unique natural resources and the Minnesota River**

Objective: Encourage public participation

Action:

- Maintain the Citizen Advisory Committee (CAC)
- Develop an outreach program
- Engage and utilize volunteers
- Provide opportunity for public input

Objective: Provide education and marketing to foster sustainable behavior and environmental stewardship

Actions:

- Produce scientific studies and work products
- Promote a variety of education programs
- Use multiple outlets to distribute information

# McLeod County LWMP 2013-2023

## Priority Concern: Surface Water Quality ~ Reducing Priority Pollutants

**Goal: Protect and improve surface water quality**

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

Actions:

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

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

Actions:

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

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

Actions:

- Feedlot Program. Continue to locally administer the County Feedlot Program to assist feedlot operators in obtaining and maintaining compliance with State regulations. Annually inspect 10% of the feedlots in the County.
- Noncompliant Feedlots. Provide educational, technical, and financial assistance, as available, to landowners/producers to upgrade noncompliant feedlots. Implement one feedlot upgrade annually.
- SWCD Feedlot Assistance. Assist the County with Feedlot site evaluations, planning, design, and overall general technical assistance. Complete MINNFARM evaluations for potential pollution problems and assist with fixing problems, when necessary. Target impaired waters and implement 5 projects annually.
- Nutrient Management Meeting. Sponsor an annual meeting to provide information on proper nutrient management.
- Manure and Nutrient Management. Provide educational and technical assistance, as available, to landowners/producers on proper manure and nutrient management. Target impaired waters.
- High Island Creek Watershed Initiative. Work with High Island Watershed to reduce Fecal coliform and E. coli levels through the implementation of manure management and feedlot BMPS.
    - Host two manure management workshops (2013 & 2014)
    - Host one manure management field day (2013)
    - Mail out quarterly newsletters

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

Actions:

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

- HICWD SSTS Incentive. Provide $500 incentive to replace 5 failing septic systems, according to HICWD criteria.
- Wastewater Treatment. Cooperatively work with partners to address wastewater treatment issues. Assist with securing funds with one project annually or as needed.
- City of Biscay. Complete work on Biscay in upgrading their septic system with the construction of the cluster system in 2013 and finish construction of sewer lines and tank installation in 2014.

Objective: Enhance shoreland and lake management efforts.

Actions:

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

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

Actions:

- Hazardous Waste Program. Continue the County's Hazardous Waste Program. Biannually review the program.
- Habitat Corridors. Support efforts to conserve, enhance and restore fish and wildlife habitat, when feasible. Implement one or more projects annually.
- GIS Datasets. Annually invest in the acquisition, development, and maintenance of GIS datasets, including the digital soil survey and parcel map. Utilize these datasets to make informed decisions regarding land use planning and water resource management.
- Land Use Management. Continue to implement the County's adopted land use controls, including the Comprehensive Plan, floodplain, SSTS, shoreland, and solid waste ordinances. Biannually review language.
- Land Use Decisions and Ordinance Amendments. Work with the Planning Commission and Board of Commissioners to ensure that land use decisions and ordinances are consistent with the Water Plan. Identify inconsistencies and update documents accordingly.

## Priority Concern: Surface Water Quantity ~ Management

### Goal: Enhance surface water management

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

Actions:

- Public Drainage Systems. Ensure that public drainage systems are operated and maintained in accordance with the State Drainage Law (M.S. Chapter 103E) and other applicable regulations, such as WCA. Continue to inspect and perform brush control on ditches once every three years.
- Comprehensive Drainage Management Plan. Pursue the development of a comprehensive drainage management plan for public drainage systems.
- Redetermination of Benefits. Redetermine the benefits on drainage systems as requested.
- Agricultural Studies. Support studies related to agricultural impacts on water quantity and quality. Establish two local test sites.
- Drainage Systems. Work with the County Drainage Authority on abandoning or relocating public drainage systems in conjunction with wetland restorations. Target impaired waters.
- Drainage BMPs. Cooperatively work with the Drainage Authority to incorporate water quantity/quality-related BMPs into the operation of public drainage systems. For example, work to establish/enhance five side inlets annually.
- Alternative Drainage Practices. Provide educational, technical, and financial assistance, as available, to landowners for the demonstration of alternative drainage practices, such as blind intakes, that replace conventional open tile intakes. Establish two demonstration sites.
- Pattern Tiling. Better understand the effects of pattern tiling on surface water management. Work to establish a research/demonstration site.
- BCWD Filtering Inlet Incentive. Provide financial assistance, as available, for establishing filtering inlets. Implement five sites.

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

Actions:

- Stormwater Management Plans. Participate in the development and implementation of Comprehensive Stormwater Management Plans, identifying BMPs, potential retrofit opportunities, providing recommendations for coordination among LGUs, and identifying potential funding options.
- NPDES Stormwater Permit Requirements. Provide educational assistance to landowners and contractors on NPDES stormwater permit requirements for construction activity. Update educational materials as they become available.

- SWCD Stormwater Initiatives. Provide technical and financial assistance to citizens on stormwater BMPs (i.e., rain gardens, bio retention, etc.), and assist with proper implementation. Implement five projects annually.
- Stormwater Storage. Work with municipalities to utilize storage basins and holding ponds for runoff retention and water quality treatment.
- Marsh Water Project. Work with the City of Glencoe and the Buffalo Creek Watershed District to implement the Marsh Water Project to mitigate stormwater flooding.
- City of Lester Prairie. Support the City of Lester Prairie's efforts to obtain Clean Water Funding for stormwater treatment and/or surface water management projects.

Objective: Preserve and restore wetlands and other water retention opportunities.

Actions:

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

## Priority Concern: Groundwater Quality & Quantity

### Goal: Protect groundwater supplies

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

Actions:

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

- Solid Waste Management. Provide educational assistance to landowners to discourage the burning and burying of solid waste. Review educational materials annually and target 5,000 households.
- Abandoned Wells. Continue to provide information to the public on how to identify, locate and seal abandoned wells. Provide financial assistance and create an abandoned well inventory, as funds are available. Target sealing five abandoned wells annually.

Objective: Ensure adequate groundwater supplies for multiple uses.

Actions:

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

## Priority Concern: Plan Administration

### Goal: Effective plan administration and coordination

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

Actions:

- Water Quality Monitoring/Studies. Cooperatively work with partners to continue and expand surface and ground water quality monitoring and studies. Annually review the data and adjust BMP programs accordingly.
- Surface Water Flow Monitoring. Cooperatively work with partners to continue and expand surface water flow monitoring efforts. Annually review the data and adjust BMP programs accordingly.
- CROW BMP Implementation and Education Initiatives. Cooperatively work with the Crow River Organization of Waters (CROW) to implement BMP implementation and education initiatives to reduce Fecal coliform, E.coli, turbidity, dissolved oxygen and chloride in North and South Fork Crow River Watersheds. Projects include: Lakeshore/Streambank Stabilization, Wetland Restorations, Rain Gardens, Lakeshore Naturalizations, Filter strip/Grass/Riparian Buffers, Windbreaks, Sediment Basins, Grass Waterways, CRP/RIM Incentive Payments, Social Media,

Newsletters and workshops – Implement six projects annually, create quarterly electronic newsletters, update website/Facebook page weekly and provide annual workshop.

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

Actions:

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

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

Actions:

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

- Water Plan Update. Update the County's water plan action steps prior to the County's water plan expiring in 2018.

# Nicollet County LWMP 2008-2018

## Priority Concern: Stormwater management

**Goal: Stormwater control**

Objective: Innovative techniques for city stormwater control

Actions:

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

Objective: Erosion control and best management practices

Actions:

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

Objective: Sensitive land along ravines and streams

Actions:

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

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

Actions:

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

Objective: Stormwater education

Action:

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

## Priority Concern: Urban and Rural Resource Management

### Goal: Urban and rural resource management

Objective: Establish buffers and native plantings

Actions:

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

Objective: Subsurface sewage treatment systems

Actions:

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

Objective: Wetlands

Actions:

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

Objective: Parks and scenic areas

Actions:

- Continue efforts to purchase additional land for established parks and scenic areas
- Search out grants and other avenues to continue to furnish state-of-the-art playground equipment
- Continue to enhance the county park and scenic areas with landscaping (including costs)
- Assist the Parks Department and Probation Office in the building of a structure at SMC Park to store equipment for the Park and Sentence-to-Serve crew
- Assist landowners, cities, townships and agencies in preserving and enhancing scenic areas such as lakes and the scenic roadways as request

- Work with DNR and landowners in the Swan Lake Watershed to plant 1 area in native plants and restore 1 wetland area within the 10 year lifespan of the plan
- Assist with grants and other contributions for purchase of the 2.8 acre lot adjoining and to the west of Minnemishinona Falls Scenic Outlook

Objective: Manure management plan

Actions:

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

Objective: Solid waste

Actions:

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

Objective: Education

Actions:

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

## Priority Concern: Total Maximum Daily Loads

### Goal: TMDLs

Objective: Seven Mile Creek Watershed (SMC WS)

Actions:

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

Objective: Rush River Watershed (RR WS)

Actions:

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

Objective: Middle Minnesota BMP CWP

Action:

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

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

Actions:

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

Objective: Minnesota River TMDLs

Action:

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

Objective: Education

Action:

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

## Priority Concern: Ground water

### Goal: Groundwater

Objective: Township well water testing

Actions:

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

Objective: Wellhead Protection

Actions:

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

Objective: Well Sealing

Actions:

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

Objective: Education

Actions:

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

# Nine Mile Creek Water Management Plan 2006

## Priority Concern: Stormwater Water Management

**Goal: To understand each subwatershed and the uniqueness of its related water resources, and to manage each subwatershed to its realistic water quality, quantity, and ecological potential.**

**Goal: To utilize both structural and nonstructural measures to reduce runoff rates and non-point source pollutant loading.**

**Goal: To manage surface waters collaboratively with cities.**

**Goal: To manage both the rate and volume of runoff entering Nine Mile Creek and the lakes and wetlands within the watershed.**

Policies:

- Stormwater runoff will be managed so that future peak rates of runoff are equal to or below existing rates. Management on a regional basis is recommended.
- Stormwater volume control requirements will be developed during the rules revision process and adopted to achieve a net reduction.
- Developers will be required to demonstrate that new and innovative stormwater management techniques have been considered.
- The NMCWD will work with local government units to adopt/revise ordinances or other regulatory controls to allow for runoff pollution prevention methods through low-impact development.
- Projects and developments plans will be reviewed to evaluate compliance with NMCWD standards.
- Local watershed management plans will be reviewed for compliance with this Plan.
- Presently, the District requires a stormwater management plan, through the grading and land alteration permitting process, for any development and/or redevelopment activities involving more than 100-cubic yards of land alternation.
- Existing natural retention and detention areas will be used, when feasible, for stormwater management to maintain and improve existing water quality.
- Stormwater will be managed to minimize erosion.
- Redevelopment opportunities will be used to enhance existing stormwater management effectiveness.
- The understanding of the hydrology of Nine Mile Creek and its watershed will be enhanced.
- 12. Impacts of runoff from development/redevelopment will be minimized by developing stormwater rate and volume control standards.
- Known flooding/erosion problems will be addressed.

Objective: Stormwater runoff will be managed in a manner that ensures that future runoff rates are less than or equal to current rates, and future runoff volumes are reduced.

Action:

- The District will develop performance standards for land altering activities to achieve lower runoff rates and volumes following adoption of the plan.
- The District will work with municipalities to adopt, revise, and implement ordinances or other regulatory controls that allow for and encourage innovative stormwater management techniques.

Objective: Utilize structural and nonstructural approaches to reduce runoff rates and non-point source pollutant loadings.

Action:

- The District will work with developers and municipalities to establish Low Impact Development (LID) demonstration development projects.
- These sites will be used for public education purposes.

Objective: Ensure stormwater management systems are maintained.

Action:

- District will develop stormwater management maintenance standards in partnership with the cities of the District.

Objective: Cooperatively manage surface waters with municipalities and other organizations and have uniformity among the District Plan and local surface water management plans.

Action:

- Provide technical assistance to municipalities in updating their local surface water management plans so that they comply with and complement the District watershed Plan to achieve stormwater management goals.

Objective: Existing stormwater management effectiveness will be enhanced through redevelopment opportunities

Actions:

- Work with developers and municipalities to include additional stormwater management techniques to redevelopment sites.
- Identify demonstration sites with the assistance from municipalities and developers.
- Educate developers and the general public about the importance of stormwater management at redeveloping sites.

## Priority Concern: Surface Water Quality

**Goal: To manage and protect our water resources: lakes, ponds, creeks, streams, wetlands, drainages, and groundwater by improving and protecting the quality of water for all water bodies within the District.**

**Goal: To protect and enhance surface water quality of the lakes and streams of the District.**

**Goal: To maintain and enhance current range of uses for District water resources.**

**Goal: To strengthen construction-site permit compliance and reduce non-point source pollution from other land use activities.**

**Goal: To establish and maintain water quality monitoring program to systematically assess achievement of all District water quality goals for targeted lakes, streams, and wetlands.**

**Goal: To establish and support a citizen monitoring program.**

**Goal: Coordinate efforts with regulatory agencies on pollutant spills.**

Policies:

- All major water bodies 2 acres or more in surface area will be classified for their intended beneficial uses.
- All major water bodies will be managed for non-degradation of water quality, with allowance for natural variability. The major water bodies will be defined as the following lakes and ponds:
    - N.W. Anderson
    - S.W. Anderson
    - S.W. Anderson
    - Arrowhead
    - Birch Island
    - Bryant
    - Bush
    - Cornelia
    - N. Garrison
    - S. Garrison
    - Glen
    - Hawkes
    - Indianhead
    - Lake Edina
    - Lone
    - Minnetoga
    - Mirror
    - Oxboro
    - Pond- 84th and Quinn
    - Rose
    - Shady Oak
    - Skriebakken
    - Smetana
    - Upper and Lower Penn
    - Valley View
    - Wing

- The water quality and habitat of all major water bodies will be monitored to detect changes or trends, and results will be reported.
- Thresholds will be set to assist in determining appropriate water quality management/improvement actions.

- Appropriate water quality management/improvement actions will be implemented.
- Current and future NMCWD water quality improvement systems will be operated and maintained to ensure they provide the designed benefits.
- The condition of water bodies in the NMCWD included on the Minnesota Pollution Control Agency's Sec. 303(d) Impaired Waters List must be improved so that they can be removed from that list.
- Local governments and developers will be responsible for effectively managing stormwater in accordance with District runoff management criteria.
- All stormwater runoff will be managed at the time of development through NMCWD's permitting program. Low impact development, infiltration, and other effective on-site treatment methods will be preferred, while stormwater management ponds will be promoted on a regional basis.
- Naturally occurring retention and detention areas for stormwater management to maintain or improve existing water quality will be required where practical and feasible by the NMCWD throughout the watershed.

Objective: Work with the MPCA and other agencies to improve quality of the water bodies on the 303(d) list so that they can be removed from that list.

Actions:

- Actively participate in the TMDL/UAA process.
- Determine appropriate responsibilities in implementing load reduction measures identified in the TMDL/UAA process.
- Amend UAA studies to better reflect TMDL plans.

Objective: Continue and improve the water quality monitoring program for Nine Mile Creek and the lakes of the District.

Actions:

- Expand and enhance water quality monitoring in the Watershed
- Collect, interpret, and report water quality data
- Establish and fund a citizen stream and lake monitoring program for the District.
- Water quality and habitat of all major water bodies will be monitored to detect changes or trends.

Objective: Minimize water quality impacts for new development/redevelopment and other land disturbing activities.

Actions:

- Review federal, state, and local agency programs related to water quality and identify where additions or changes are necessary.

- Develop Watershed performance standards during the rules revision process.
- Develop and adopt revised rules for the District. During the rule-revision process, the District will work with local units of government to incorporate District standards into their stormwater management plans, ordinances, and other regulatory controls.
- Require cities to develop stormwater plans and ordinances or other regulatory controls that ensure that the costs for constructing, operating, and maintaining stormwater management systems for new developments and redevelopments are fairly allocated so as not to unduly burden local governments or the District.

Objective: Advance the understanding of the hydrology and water quality of Nine Mile Creek and its watershed.

Actions:

- Provide educational workshops and information to general public about Nine Mile Creek and its watershed.
- Implement the Project NEMO education program. Give presentation to planning commissions and city councils.
- Continue to implement storm drain stenciling program
- Host stream and community clean up events in partnership with cities and other organizations.
- Monitoring data will be used to calibrate and refine hydrologic models.

## Priority Concern: Wetlands Management

**Goal: Maintaining and enhancing the functions and values of wetlands within the watershed.**

**Goal: Continuing to administer the Wetland Conservation Act (WCA) requirements as the responsible local government unit for wetlands within the cities of Eden Prairie, Edina, Hopkins, and Richfield. Also, provide technical assistance in wetland-related matters in Bloomington and Minnetonka; cities that administer the requirements of WCA. The Minnesota Department of Transportation (Mn/DOT) is the LGU for Mn/DOT transportation projects.**

**Goal: Managing wetlands to achieve no net loss of acreage, function, and value; and maintain the complex ecosystems that serve a variety of functions and values, including improving water quality and providing flood storage, wildlife habitat, open space, and aesthetics.**

**Goal: Practice responsible wetland stewardship by increasing city, government, and citizen knowledge and understanding of wetland ecology and management.**

**Goal: Protect all rare and high-quality wetland plant communities within the NMCWD.**

**Goal: Protect current populations and habitats of rare, endangered, and threatened plants and animals.**

**Goal: Protect and improve wetlands in identified open-space corridors.**

**Goal: Allow for multiple uses of protected wetlands, while ensuring that functions and values are maintained or enhanced.**

**Goal: Establish a wetland bank within the District for District-sponsored projects**

Policies:

- Wetland activities will be managed through NMCWD administration of the WCA and the NMCWD rules and regulations.
- Require local governments to develop and implement local wetland management plans.
- Work to achieve no net loss of wetlands in the NMCWD.
- Wetland replacements will occur in the same subwatershed whenever possible. New wetlands will provide at a minimum equal or greater functions and values at a replacement ratio equal to, or great than that dictated by the WCA or the NMCWD rules, whichever is greatest.
- Avoiding direct or indirect wetland disturbance will be encouraged for all developments and land disturbing activities.
- Buffers, acting as filter strips, will be required around wetlands based on its management classification as indicated in each city's local wetland management plan.
- High value wetlands should not be used for stormwater management where other alternatives exist.
- Fragmenting natural areas and corridors will be avoided when feasible, and mitigated when unavoidable at equal value. Impacts to locally and regionally significant natural areas will be avoided when feasible or mitigated when unavoidable at equal or greater value.
- Cooperate with regulatory agencies to manage invasive species.
- Require local governments to adopt land use and development ordinances or other regulatory controls to complement existing wetland protection regulations.
- Identify and pursue wetland restoration opportunities within the watershed.
- Protect existing fish and wildlife habitat areas and cooperatively promote the development of additional fish and wildlife habitat areas, following MDNR guidelines.
- Protect sensitive habitats and communities, and rare species, following MDNR guidelines.
- Assist in public education effort regarding wetlands and other fish and wildlife habitat of the NMCWD.

Objective: Require local governments to develop and implement local wetland management plans that include a functions and values assessment.

Action:

- Work with and assist local governments in the development and implementation of local wetland management plans.

Objective: Work with local governments to adopt land use and development ordinances or other regulatory controls to complement existing wetland protection regulations and achieve no net loss of wetlands. Ordinances or other regulatory controls should include establishing standards for wetland buffers and preservation and protection of high-priority wetland areas.

Actions:

- Assist local governments in the development of the above ordinances or other regulatory controls.
- Implement a public education program regarding the importance and value of wetlands and other fish and wildlife habitat in cooperation with local governments and other agencies.
- Educate the public about the importance of buffer zones around wetlands.
- Establish an Incentive Program for implementation of wetland buffer zones.

Objective: Identify and implement wetland restoration opportunities within the District.

Actions:

- Work with natural resource agencies to manage invasive species.
- Protect high-quality wetland areas, sensitive habitats and rare or endangered species

## Priority Concern: Groundwater Protection

**Goal: To manage and protect our groundwater by understanding the effects of community growth and other activities on it, and focusing on groundwater-surface water interactions.**

**Goal: To protect groundwater quality and quantity to preserve it for appropriate and sustainable beneficial uses.**

**Goal: Protect groundwater recharge areas.**

Policies:

- Groundwater level data will continue to be collected to assist in managing the water levels and floodplains of the NMCWD's water resources.
- These data will be reported, annually, in the District Engineer's Report.
- The NMCWD encourages the cities and other public water suppliers to adopt wellhead protection programs. These programs will include the identification and sealing of abandoned wells. The wellhead protection plans must be submitted to NMCWD for review.

- Groundwater level data will continue to be collected to assist in managing the water levels and floodplains of the NMCWD's water resources.
- These data will be reported, annually, in the District Engineer's Report.
- The NMCWD encourages the cities and other public water suppliers to adopt wellhead protection programs. These programs will include the identification and sealing of abandoned wells. The wellhead protection plans must be submitted to NMCWD for review.

Objective: Continue collecting groundwater level data and use to assist in managing the District.

Actions:

- Collect static groundwater levels from observation wells throughout the District and reported annually in the District Engineer's Report
- Collaborate with other agencies to enhance groundwater monitoring efforts.

Objective: Support the Minnesota Department of Health (MDH) and other state, regional, and local agencies in implementing wellhead protection programs and plans within District.

Action:

- Provide technical assistance to cities that are working on developing or implementing Wellhead Protection Plans
- Work with MDH to expedite the development of Wellhead Protection Plans in cities without such plans.
- Review and comment on Wellhead Protection Plans as they are being completed.
- Support the implementation of best management practices (BMPs) for wellhead protection areas.

Objective: Distribute educational materials or programs that provide information on groundwater and how land use impacts our drinking water supply.

Action:

- Coordinate efforts with cities and other public water agencies to educate the public on BMPs to prevent contamination of groundwater supplies
- Collaborate with others to research infiltration impacts on groundwater and develop a consistent approach to protecting areas sensitive to groundwater contamination
- Promote conservation of groundwater.

## Priority Concern: Land Use Management

**Goal: To protect and conserve water resources by integrating water resources management with land use planning, and encouraging low impact development approaches that reduce non-point sources of pollution from urban land uses.**

Policies:

- The District will work with municipalities to assure comprehensive land use plans that protect and preserve water resources within the watershed.
- The District will work with municipalities to provide for the adoption of local controls, including Low Impact Development requirements, to define and abate any land uses that might adversely impact the achievement of water quality goals, and provide for the compliance with pollutant loading for specific subwatersheds consistent with local, regional, and state plans to achieve water quality standards.
- The District will adopt rules revisions to implement this Plan and to further develop the District's program to regulate the use and development of land as it impacts water resources. These rules will regulate the use and development of land when the local government unit (municipality) does not have an approved, adopted, and implemented local water management plan, or enters into a cooperative agreement with the District concerning the District's ongoing regulatory program.
- The District will work with municipalities to coordinate the District's regulatory program with local land use controls to promote the following policies:
    - The presence of environmentally sensitive natural resource areas should guide land use management decisions.
    - The impacts of development on water resources, including cumulative impacts, should be considered for each proposed development before development occurs.
    - Stormwater BMPs must be identified as part of the development approval process.
    - Development review by the District and municipalities should be coordinated and provide for effective technical input at the earliest possible point in the development process.
    - Encourage low impact development techniques and approaches throughout the District.
- The District will assist its constituent municipalities in complying with the requirements of their MS4-NPDES stormwater permits, particularly the Non-Degradation Plan elements of their Stormwater Pollution Prevention Plans (SWPPPs), which mandate that 1988-era runoff water and pollutant loads not be exceeded.

Objective: Require developments within the Watershed to address impacts on water resources, including cumulative impacts.

Actions:

- Assist local governments within the District in developing criteria to consider potential off-site impacts (downstream impacts)
- Encourage use of Low Impact Development (LID) techniques throughout the watershed
- Development/permit review by the District and municipalities will be coordinated and provide for effective technical input at the earliest possible point in the development process (District involvement on the front end)

- Through rules revision process, the District will develop rules to address rate and volume control.

Objective: Coordinate the implementation of the Nine Mile Creek Watershed Management Plan with the implementation of local government's Comprehensive Plan updates.

Action:

- Develop and adopt rate and volume control standards to reduce rates and volumes of runoff throughout the watershed.

Objective: Coordinate the District's regulatory program with the local land use controls to minimize impact of developments/redevelopment on water resources.

Actions:

- Work with municipalities to identify stormwater BMPs as part of the development review and approval process.
- Coordinate development review process with municipalities to provided effective technical input at the earliest possible point in the development process.
- Encourage low impact development techniques and approaches throughout the District.
- The District will assist in the funding of Low Impact Development demonstration projects.
- Assist local governments with the development adoption of rate and volume control ordinances or other regulatory controls.

## Priority Concern: Floodplain Management

**Goal: To manage and protect the floodplains of the watershed from encroachment.**

**Goal: To protect human life and permanent improvements that could be damaged by flood events.**

Policies:

- The natural function of the floodplain as a floodwater storage area will be protected from encroachment.
- Maintain a no net loss of floodplain storage.
- Floodplains will be managed to maintain critical 100-year flood storage volumes.
- Local Water Plans will include provisions that restrict construction of new structures within the flood envelope, and other flood prone areas.
- Upstream floodwater storage should be maximized.
- Infiltration in appropriate floodplain areas should be increased through increased vegetated areas and reduced impervious surfaces.

- Work with constituent cities to establish natural vegetated buffers on all publicly owned lands adjacent to Nine Mile Creek and stormwater detention areas.
- Low floor elevation of all structures must be 2-feet above the 100-year flood elevation.
- Place restrictive covenants on titles of properties, if necessary, to ensure floodplain protection.
- Work with the cities in developing buffer ordinances or other regulatory controls.

Objective: Require adoption of shoreland and floodplain ordinances that are in compliance with County and State ordinances.

Action:

- Review the status of local floodplain and shoreland ordinances.
- Assist municipalities with the development and adoption of floodplain ordinances to be compliant with District, County, and State requirements.

Objective: Work with municipalities to identify and protect District floodplains.

Actions:

- Work with municipalities to establish natural vegetated buffers adjacent to Nine Mile Creek on all publicly owned lands.
- Work with municipalities to develop and distribute educational materials on floodplain locations, protection, and floodplain land use restrictions.

Objective: Prevent floodplain encroachment in order to maintain no net loss of floodplain storage, including the preservation, restoration, and management of floodplain wetlands.

Action:

- Require local stormwater management plans to maintain critical 100-year flood storage volume.
- Require local stormwater plans to include provisions that restrict construction of new structures within the flood envelope and other flood prone areas.

## Priority Concern: Education and Outreach

**Goal: To manage and protect our water resources: lakes, ponds, creeks, streams, wetlands, drainage ditches, and groundwater by:**

**a) Promoting open communication with our constituents, both our citizen base and pertinent governmental units.**

**b) Educating the general public and the local government units within the NMCWD on water quality and quantity issues, management and means of improvement.**

**Goal: To offer programs, educational opportunities, and information that facilitate an understanding of watershed principles.**

Policies:

- Awareness of the District's presence and its role in managing water resources will be increased through expanded communications efforts.
- Interest in and support of District will be increased through expanded cooperative education efforts, recruitment of volunteers, and public involvement in District projects and programs.
- Awareness of the impacts that behaviors can have on the watershed's water resources will be raised through dissemination of education materials to targeted groups, including developers, and through other public information efforts.
- Behaviors that have a positive impact on the water resources will be promoted through coordination/cooperation with other groups, and agencies. The District will investigate and develop a plan for an incentive program to encourage implementation of BMPs in the watershed.
- Assist in distributing materials developed by other organizations and/or develop educational materials, where appropriate.
- Incorporate water quality education/information regarding the NMCWD into all District activities.
- Incorporate an educational component related to each goal area in the Plan.

Objective: Develop an education program related to each goal area in the Plan.

Action:

- Incorporate water quality education/information regarding the NMCWD into all District activities.

Objective: Provide information to the public and community groups, and provide opportunities for public involvement and input on District programs and activities.

Actions:

- Use District's website to provide information on NMCWD. (Post meeting dates, times, locations, on the web)
- Establish and support volunteer monitoring programs for Nine Mile Creek and lakes.
- Support and maintain an active Citizens Advisory Committee (CAC).

Objective: Work with other agencies and groups to develop and implement education programs related to sustainable land use practices.

Objective: Coordinate efforts with government, nonprofit, and other agencies to provide education programs on watershed issues.

Action:

- Conduct a survey of District citizen concerns, periodically

## Priority Concern: Administration

**Goal: The goal of the District is to manage its affairs in a fiscally responsible manner and to encourage citizen involvement in District activities.**

Policies:

- The District will annually budget its administrative fund in a manner that avoids shortfalls and excessive administrative levies. The District will levy according to its foreseeable needs, only. The 509 Fund, Metropolitan Surface Water Management Act, will be levied to fund the on-going studies and programs that were initiated/developed in the District's 1996 Plan and continued/implemented and expanded as part of this Plan.
- The District will levy to fund Repair & Maintenance and Survey & Data Acquisition funds, and basic water management projects. Additional projects will be considered based on need and urgency.
- Subject to available funds and levy authorities, the District will levy to raise funds to contribute directly for the payment of costs attributable to District projects upon the following percentage allocation guidelines:
    - First-Priority: (Basic Water Management Projects) Up to 100% of authorized costs
    - Second-Priority: (Ancillary Features of Basic Water Management Projects) Up to 50% of authorized costs
    - Third-Priority: (Land Acquisition for Special Purposes) Up to 25% of authorized costs.
- Currently subject to available funds, the District will review and administer its permitting programs without additional charge to applicants, using monies in the administrative fund. If necessary, a fee not to exceed actual costs will be implemented.
- Enforcement of rules and regulations of the District will be by civil action; criminal conduct will be reported to municipal or county authorities for investigation and prosecution.
- The District prefers to undertake basic water management projects in response to petitions from municipalities, but reserves the discretionary right to initiate projects itself.
- To oversee the completion of a project, plan, budget, or other need, the District has hired an Administrator to facilitate and expedite projects.

Objective: Support and oversee a Citizens Advisory Committee and Technical Advisory Committee.

# Prior Lake-Spring Lake Water Resources Management Plan 2010-2019 amended 2013

**Goal: To minimize the negative effects of water level fluctuations in the District.**

a) **Reduce the severity and duration of flooding and low-water conditions through sound management of the Prior Lake Outlet Structure and Channel and by implementing water volume and rate management practices identified by various studies, including the 2003 Volume Study.**

**Goal: To maintain or improve the quality of all water resources within the District.**

a) **Reduce phosphorus and other pollutant concentrations and increase water safety and clarity in lakes, streams, and wetlands within the District**

b) **Use parameters established TMDL studies. District water-resource specific studies, and statewide standards as goals, in that order**

c) **To maintain and expand the recreational and wildlife habitat benefits associated with surface water and natural spaces in the District**

d) **In all District programs and projects, seek to maintain or improve upon wildlife habitat, recreation benefits such as trails, and overall ecological integrity.**

e) **Work with other local government units to implement and improve green corridor, parks, and other long-term water and open space plans**

**Goal: To improve understanding of local water resources and practices among all stakeholders in the District**

a) **Educate and inform residents in the District about water resources and management practices.**

b) **Improve general understanding of water science.**

c) **Emphasize the link between local actions and water resource outcomes.**

d) **Empower local residents to make positive changes for water resources**

**Goal: To be as efficient and effective as possible in all District activities**

**a) Collect physical, chemical, and biological water data to target activities. Strive to achieve the greatest outcome with the least possible expenditure.**

**b) Coordinate activities where appropriate with other local, regional, state, and federal agencies.**

**c) Seek and utilize grant funding, where appropriate.**

**d) Utilize an adaptive management approach, regularly re-evaluating programs and projects relative to expected outcomes**

Actions:

- Capital Projects:
    - The District will use the Implementation Plan chapter of this Plan to guide the construction and funding of capital projects.
    - The District will review the capital improvements program against the Goals of the District every other year and update as needed, and submit it for review by appropriate governmental units and individuals.
    - The District will seek to incorporate into the Implementation Plan projects that further the Goals of the District, including projects to infiltrate water, promote groundwater recharge, restore wetlands identified in the Comprehensive Wetland Plan, increase storage volume in the area tributary to Prior Lake, reduce erosion and sedimentation, and demonstrate good shoreline practices.
    - The District will hold public hearings prior to ordering projects even if said projects are in the approved management plan of the District
    - The District will seek to partner with local, regional, and state governments as well as other organizations to fund and implement capital projects identified in the Implementation Plan.
    - The District will identify and include future operation and maintenance costs in the financial assessment of future capital improvement projects.
    - The District will seek to implement items in completed TMDL and lake management study implementation plans.
    - The District will continue to implement incentive (cost-share) programs for local groups and landowners to improve water quality by installing and maintaining small water quality BMPs such as shoreline restoration, raingardens, and agricultural practices such as nutrient management plans, conservation tillage, and filter and buffer strips.
    - The District will utilize a structure of feasibility, design, construction, and maintenance for all capital projects.
- Operation and Maintenance:
    - The District will create and implement operation and maintenance plans for all existing District projects and facilities.

- All private and public facilities not owned by the District but wholly or partially within the District, the Prior Lake Outlet Channel conveyance system or District easements will not be maintained by the District unless explicitly determined by the Board that doing so would be in the best interest of the District.
- The District will regularly inspect all land on which the District maintains legal rights and responsibilities through ownership and/or easements, covenants, etc.
- The District will continue to implement and refine established programs, including vegetation and rough fish management.
- The District will coordinate all operations and maintenance work with local partners.

- Planning:
  - The District will review this Plan and its implementation elements every other year to ensure it incorporates new regulations and requirements, current knowledge, and reflects the current goals of the Board of Managers and the District's constituents, and pursue plan amendments as necessary.
  - The District will perform a comprehensive self-assessment after five years of plan implementation and will make revisions to the management plan and implementation plan as necessary.
  - The District will require all local management plans to include management practices consistent with the District's plan and conforming to Minnesota Rules 8410.
  - The District will require inclusion of maintenance plans within local water plans.
  - The Board adopts as goals for the lakes and natural streams in the District the State of Minnesota water quality numeric standards set forth in Minnesota Rules 7050.0222, unless otherwise superseded by a goal established in an approved TMDL or by an action of the Board.
  - The District will seek to meet and maintain pollutant load levels at or below standards as they are derived from basin-specific diagnostic and feasibility studies or Federal and State impaired waters threshold levels on waters with no studies completed.
  - The District will work with the county in the development of any future groundwater plan.
  - The District will participate in efforts to establish greenways and buffers zones with other units of government.
  - The District will implement existing lake management plans on lakes with no TMDL.
  - The District will prepare lake management plans for those waterbodies without an existing plan or TMDL.
  - The District will work with local governments and developers to incorporate water resource related goals and elements in planning and development.
  - The District will model and utilize ultimate development conditions in stormwater management efforts. The District will base stormwater management upon the critical 100-year event plus a freeboard elevation to protect improvements.
  - Education and Communication:
  - The District will undertake all required communications as outlined in M.S. 103B and 103D.

- The District will maintain a Citizen Advisory Committee and a Technical Advisory Committee to provide input to the Board of Managers and will periodically convene these committees to discuss issues.
- The District will respond promptly to requests for information from the general public, and use such interactions to increase knowledge regarding water resources.
- The District will participate in or create a coordinated education program to increase awareness of water resource issues and meet the educational requirement of the District's municipal separate stormsewer system (MS4) permit.
- The District will seek to increase its visibility by making efforts to reach wider audiences with topics targeted to key audiences including city government, homeowners associations, lake shore property owners, elementary school children, agricultural operators and the general public.
- The District will adopt and maintain communication tools, including a website and accounts with popular social media, in addition to traditional communication tools such as telephone, fax, mail, and email.
- The District will maintain communication and coordinate outreach with interest groups that share the District's goals.
- The District will maintain a library of resources and information on District projects for use by stakeholders.

- Regulation:
  - The District will continue to transfer portions of its regulatory responsibilities to local units of government upon District approval and adoption of a local water management plan and the adoption of local ordinances and policies sufficient to implement the program.
  - The District will continue to transfer portions of its regulatory responsibilities to local units of government upon District approval and adoption of a local water management plan and the adoption of local ordinances and policies sufficient to implement the program
  - The District will continue to exercise water management responsibilities in inter-community issues or whenever local units of government are not implementing regulations that are at least as protective of water resources as District rules
  - The District will maintain open communication and periodically audit the water resources related regulatory programs of local units of government to ensure compliance with ordinances, standards, and policies
  - The District will periodically review and revise District rules and standards as needed
  - The District requires notice of all pending applications, hearing, and technical evaluation panels and will provide review and comment on pending Wetland Conservation Act applications
  - The District recognizes and requests that administration of Scott County Ditch 13 will remain with Scott County, the Ditch Authority
  - The District will revise its rules and standards to include performance-based volume management that specifies outcomes rather than prescribes methods

- The District will support the efforts of other regulatory bodies responsible for overseeing agriculture chemical use, conservation plan establishment, and feedlot regulation within the District
- The District will require agreements or maintenance plans for all developments permitted by or within the District
- The District will require that improvements to the ditch system will be subject to watershed district involvements as outlined in M.S. 103D

- Monitoring and Research:
  - The District will implement its monitoring plan to gather necessary information to manage water resources, according to the District's established goals
  - The District will update its monitoring plan every year
  - The District and its partners will periodically update hydrologic and hydraulic modeling within the watershed
  - The District will share its own water quality data with the public and local governments, and encourage and participate in data sharing programs conducted by other entities
  - The District will continue to monitor aquatic vegetation on designated lakes within the District
  - The District will periodically assess progress toward meeting federal, state, and District water quality goals in Impaired Waters in the District
  - The District will support the DNR in their efforts to monitor and manage aquatic species populations
- Outlet Channel and Structure:
  - The District will continue to exercise and maintain rights and responsibilities set forth in the Prior Lake Outlet Channel Memorandum of Agreement (JPA/MOA) executed in 2007 between the District, the City of Prior Lake, the City of Shakopee and the Shakopee Mdewakanton Sioux Community as well as other agreements so executed or amended.
  - The District will complete restoration of the Prior Lake Outlet Channel and will address erosion and sedimentation problems by monitoring conditions and undertaking any necessary repairs and periodic maintenance to maintain capacity and minimize downstream sediment and pollutant loading and discharge.
  - The District will continue to organize regular meetings of both policy and technical staff members of the organizations in the JPA/MOA.
  - The District will complete the correction and acquisition of easements for the Prior Lake Outlet Channel, with a goal of owning sufficient land and rights to perform ongoing maintenance work.
  - The District will review and update the operation and maintenance plan for the Prior Lake outlet structure as alterations are made to the structure
  - The District will inspect and monitor the Outlet Channel and associated easements for water flow, erosion conditions, vegetative issues, and other concerns as identified by the members of the JPA/MOA, and report the results of monitoring to the JPA/MOA members

- Administration:
    - The District will administer programming in a fiscally sound manner at low and reasonable tax rates
    - The District will seek an appropriate balance between the use of outside professional services and District staff
    - The District will re-evaluate professional services, including legal, engineering, accounting and auditing every other year
    - The District will adopt and update policies to direct internal operations, including fiscal and personnel policies and Board bylaws
    - The District will pursue water quality grant programs. On-going grant programs will be continued to maximize return to diagnostic study investments

# Renville County LWMP 2013-2023

**Goal: Protect and improve surface water quality**

Objective: Continue efforts to reduce failing Subsurface Soil Treatment Systems (SSTS) and improve wastewater treatment discharges.

Actions:

- SSTS Program. Two County staff members will continue to provide oversight and assistance of State and County regulations and inspection services as part of the County's SSTS Program.
- Noncompliant SSTSs. Provide educational, technical, and financial assistance, as available, to homeowners to upgrade noncompliant SSTSs. Investigate and initiate corrective measures for improperly discharging SSTSs. Identify approximately 2 failing systems each year.
- SSTS Education. Provide information and assistance to homeowners on proper SSTS design, installation, operation, and maintenance through annual newsletters, mailings, and website resources.
- SSTS Funding. Secure and administer financial assistance programs to provide assistance for homeowners to upgrade noncompliant SSTSs. Promote cost-share incentive payments available through the watershed districts to encourage voluntary septic system upgrades. Work with 50 homeowners each year.
- Wastewater Treatment. Cooperatively work with partners to properly address community and industrial wastewater issues. Encourage industrial development to be located where municipal treatment services are available.

Objective: Proactively work to improve and remove waterbodies from the MPCA's 303d list of Impaired Waters (TMDLs) while continuing to protect non-impaired waterbodies.

Actions:

- Water Quality Monitoring. Cooperatively work with partners to continue current efforts and to expand surface water quality monitoring efforts. To obtain baseline and storm event data during the growing season, approximately 40 samples will be annually collected at 11 sites, depending on seasonal precipitation.
- Watershed Approach. Cooperatively work with the MPCA and partners to further the "watershed approach" process of assessment, restoration, and protection strategies for impaired waters.
- Intensive Watershed Monitoring. Assist the MPCA with identifying water quality impairments and sources of impairments within each watershed. Each of the four watersheds will be monitored once every ten-years, as determined by the MPCA. Approximately 50 sites, prioritized by the MPCA, will be tested for biological integrity within the four watersheds.

- Stressor Identification. Assist the MPCA's efforts in the development of stressor identification in aquatic ecosystems. Survey 12 waterbodies, as determined by MPCA, to target priority BMP locations.
- Flow/Level Monitoring Gauges. Assist water plan stakeholders with installing and monitoring flow and level gauges on major rivers and lakes in the County. Flow: Monitor flow on 3 waterbodies. Level gauges: Monitor water level gauges on 9 waterbodies. Approximately 40 measurements will be collected annually on 9 waterbodies, depending on seasonal precipitation. The waterbodies include Hawk Creek, Sacred Heart Creek, West Fork Beaver Creek, Beaver Creek (main stream), Birch Coulee Creek, Fort Ridgley Creek, Buffalo Creek, Lake Allie, and Lake Preston.
- Priority BMP Locations. Evaluate and annually update land use data including GIS layers and LiDAR to identify and inventory high priority practice locations within watersheds (Initially evaluate in 2016-2018).
- BMP Collaboration. Coordinate efforts with local, state, and federal agencies and Watershed Management Organizations to collaborate resources for effective BMP implementation.
- BMP Program*. Provide educational, technical, and financial assistance, as available, to landowners for the implementation of water quality-related BMPs that will address specific waterbodies impairment. For example, excessive nutrients as a result of non-point source pollutants would be treated through filtering and holding water in the field with bioreactors (2), saturated buffers (5), filter strips (50 sites), sediment basins (5), grade stabilizations (2), rock intakes (10), and wetland restorations (5 sites). *(Approximately 16 projects/sites per year).

Objective: Enhance shoreland management and protection efforts.

Actions:

- Shoreland Regulation. Two County staff members will continue to enforce public waters shoreland regulation, including requiring landowners to maintain the mandatory setbacks on public waters.
- Shoreland Conservation Easement Programs. Target marginal and sensitive land for enrollment in conservation easement programs adjacent to public waters, such as CRP, RIM, GRE, GRP, and WRP. Provide assistance to landowners for the management and enhancement of existing easements. Establish 2,000 acres within 100 easements by 2018.
- BMP Program*. Provide educational, technical, and financial assistance, as available, to landowners for the restoration of shoreland. For example, stream bank stabilization structures: (5) two specific locations are Fort Ridgely Creek along the Mayflower Golf Course and on Hawk Creek located in Section 16 of Hawk Creek Township; bank stabilization and vegetation plantings: (5) examples include lakescaping, biological structures, and plantings on Lake Allie and Preston Lake; buffers (300 acres); and grazing exclusion fencing (2). *(Approximately 5 per year).

Objective: Provide programs and regulations to protect surface water resources from livestock and manure contamination.

Actions:

- Feedlot Program. Two staff members will locally administer the County Feedlot Program to assist feedlot operators in obtaining and maintaining compliance with State and County regulations. Approximately 70 sites, or 20% of the County's feedlots, will be inspected annually.
- Noncompliant Feedlots. Provide educational, technical, and financial assistance, as available, to livestock producers to upgrade noncompliant feedlots. Work with approximately 5 noncompliant livestock producers each year.
- Manure and Nutrient Management Plans. Provide educational and technical assistance, as available, to agricultural and livestock producers on proper manure and nutrient management (Complete approximately 10 plans per year).
- BMP Program*. Provide educational, technical, and financial assistance, as available, to livestock producers for the implementation of water quality-related BMPs that will reduce impacts from feedlots and manure management issues. For example, point source pollutants can be addressed on noncompliant feedlots by installing agricultural waste storage facility (2), bark beds (3), filter strips, roof structures (2), and animal mortality facilities (3). Non-point source pollutants could be addressed through exclusion fencing (3 systems) and by installing animal watering facilities (2) outside of natural watercourses. *(Approximately 3 projects/sites per year).

### Goal: Reduce erosion and sediment loadings to surface waters resources

Objective: Prioritize and implement BMPs to reduce erosion and sediment loading to surface water resources.

Actions:

- BMP Program.* Provide educational, technical, and financial assistance, as available, to landowners and communities for the implementation of water quality-related BMPs, such as conservation tillage (5 sites), vegetative buffer strips (50 sites), sediment basins (5), grade stabilization structures (2), bank stabilization structures (3), shore land restoration (3), and rock intakes (10). *(Approximately 16 projects/sites per year).
- Conservation Easement Programs. Target marginal and sensitive land for enrollment in conservation easement programs, such as CRP, RIM, GRE, GRP, and WRP (Establish approximately 100 easements totaling 2,000 acres will be completed by 2018). Provide assistance to landowners for the management and enhancement of existing easements.
- BMP Forage Programs. Provide educational, technical, and financial assistance, as available, to landowners for the conversion of marginal row crop agricultural land to forage production pasture and hay land (Establish 3 easements totaling 200 acres will be completed by 2018). Promote retaining land currently in forage production from being converted to agricultural row crop production. Assist with implementing state or federal grazing plan on private lands.
- BMP Funding. Annually seek additional funding in the form of state cost-share, Federal EQIP, and Clean Water Funds for the implementation of priority BMPs.

## Goal: Protect and improve surface water management

Objective: Encourage efforts to maintain the public drainage system while improving water quality and managing water quantity.

Actions:

- Public Drainage Systems. Renville County will ensure that public drainage systems are maintained in accordance with Minnesota Statutes Chapter 103E.
- Redetermination of Benefits. Support the redetermination of benefits on drainage systems as needed or requested.
- Public Drainage Systems BMPs. Cooperatively work with the Drainage Authority to incorporate water quality/quantity-related BMPs into the operation of public drainage systems.
- Drainage BMP Program.* Provide technical and financial assistance, as available, to landowners for the installation of alternative drainage practices. Examples include: rock intakes (10), intake risers (3), controlled drainage (2 sites), bark beds (2), bio retention ponds (2), saturated buffer projects (5), and moist soil management (2). *(Approximately 5 projects/sites per year).
- Controlled Drainage Inventory. Inventory potential sites for controlled drainage projects in underperforming stretches of the public tile systems.
- Educational Programs. Coordinate annual educational activities, such as newsletters and Field Day's, to promote the benefits of BMPs.
- Drainage Systems/Wetland Restorations. Work with the County Drainage Authority on abandoning or relocating public drainage systems in conjunction with wetland restorations. Target priority wetland restoration and saturated buffer projects for future funding. (Establish 3 locations beginning in 2014 and complete by 2018).
- Comprehensive Drainage Management Plan. Pursue the development of a comprehensive drainage management plan for public drainage systems and inventory sites for potential controlled drainage implementation. (Complete by 2018).
- Drainage Studies. Conduct, support, and utilize studies that address impacts of drainage on water quantity and quality, such as studying the water quality benefits of wetlands on Limbo Creek. (Beginning in 2014 and completed by 2018).

Objective: Manage surface waters to minimize storm water pollution and runoff.

Actions:

- Stormwater Storage. Work with municipalities to utilize storage basins and holding ponds for runoff retention and water quality treatment.
- NPDES Stormwater Permit Requirements. Provide educational assistance to landowners and contractors on NPDES stormwater permit requirements for construction activity. (Work with approximately 1 landowner/contractor each year).
- Stormwater Education. Provide educational opportunities, technical assistance, and financial assistance, as available, to create awareness of the effect of stormwater on water quality (i.e.

storm drain decals, lawn care/fertilizer management. (Provide approximately 3 events/projects per year).

- BMP Program.* Provide educational, technical, and financial assistance, as available, for the implementation of water quality-related BMPs that will increase the infiltration of storm water. Example BMPs include rain barrels (50), rain gardens (5), retention basins (3), and pervious surface (2 sites). *(Approximately 12 projects/sites per year to be completed by 2018).

Objective: Protect floodplain areas from encroachment and minimize flood damage through land use controls.

Actions:

- Floodplain Regulations. Enforce State approved floodplain zoning regulation.
- Floodplain BMPs. Encourage the enrollment of flood prone areas into land retirement programs (Establish 2 easements totaling 300 acres, beginning in 2014 and completed by 2018).
- Objective: Preserve and restore wetlands and shallow lakes, and promote other water retention opportunities.
- WCA Administration. One SWCD employee will continue to administer the Minnesota Wetland Conservation Act (WCA). One Renville County staff member will continue to serve on the Technical Evaluation Panel (TEP). Renville County shall continue to be identified as a high priority area for administration of the WCA.
- Preservation and Restoration Programs. Provide educational, technical, and financial assistance to landowners to preserve and restore wetlands and grassland complexes. (Establish 500 acres to be completed by 2018).
- Wetland Easements. Pursue grants or easement opportunities to assist landowners in protecting remnant mesic wetlands not protected under State and Federal laws. (Establish 200 acres to be completed by 2018).
- WCA BMP Program.* Promote the preservation and restoration of upland storage areas (wetlands [5 sites], water and sediment basins [5 sites], and other BMPs which will slow surface runoff, reduce peak flows, stabilize stream hydrographs, prevent stream bank erosion, and reduce downstream flooding. *(Approximately 2 projects/sites per year to be completed by 2018).
- Education. Annually implement educational efforts to encourage opportunities to reduce the effects of accelerated runoff from urban, industrial and agricultural areas.
- Priority Sites. Inventory potential for priority wetland restoration sites using ARC GIS LiDAR, hydric soils layers, GIS Data layers, and other tools available. (Beginning in 2014 and completed by 2018).
- Manage Water Levels in Shallow Lakes. Pursue grants to install water control structures to manage the level of water within shallow lakes to improve nutrient filtration by increasing aquatic vegetation and invertebrates populations within these waterbodies and improve waterfowl habitat. Priority lakes in Renville County are Mud Lake, Hodgson Lake, Phare Lake,

Long Lake, and Boon Lake that outlet into the County drainage systems. (Beginning in 2014 and completed by 2018).

### Goal: Ensure a safe and adequate supply of groundwater

Objective: Protect groundwater and drinking water sources from contamination.

Actions:

- Wellhead Protection. Assist the MDH and the ten municipalities within Renville County with the preparation and implementation of wellhead protection plans for public water suppliers.
- Groundwater Monitoring. Continue to use groundwater monitoring data to support land use decisions and to prioritize educational efforts. Utilize data from the approximately 5 established sites.
- BMP Program. Provide educational, technical and financial assistance, as available, to communities and landowners for the implementation of groundwater protection BMPs, including promoting livestock manure management plans (10 plans), SSTS upgrades (100 systems), abandoned well sealings (50 well sealings), proper decommissioning of storage tanks, wellhead protection conservation easements (2 easements totaling 300 acres), CRP contracts (2 contracts totaling 300 acres), and the proper application and disposal of pesticides and other chemicals. Projects will be completed by 2018.
- Abandoned Wells. Continue to provide information to the public on how to identify, locate and properly seal abandoned wells. Provide cost-share assistance, as available, to seal approximately 10 abandoned wells each year. Develop a Countywide inventory of abandoned wells (To be initiated by 2015 and completed by 2018).

Objective: Ensure adequate groundwater supplies for multiple uses.

Actions:

- Precipitation Monitoring. Continue the volunteer rain gauge monitoring program, which provides monitoring reports to the state Climatology Office. Increase the number of volunteer rain gauge readers from 9 townships to 27 townships.
- Groundwater Monitoring. Cooperatively work with partners to continue and expand groundwater permitting and monitoring efforts.
- Groundwater BMPs. Promote groundwater conservation BMPs such as bio-retention basins (5), rain barrels (50), and rain gardens (5) in urban areas including cities and lakeshore areas. In rural areas, BMPs would include conservation irrigation (1), wetland restorations (5), controlled drainage (2), and saturated buffers (5 sites including the Minnesota River and tributaries focusing on RIM easements). Approximately 14 projects/sites will be completed each year.
- Education. Annually provide groundwater protection and water conservation-related educational materials to industry, homeowners, and schools through newsletters, mailings, website resources, and presentations.

- Hydrogeologic Atlas. Complete, educate, and utilize the Renville County hydrogeologic atlas to evaluate the impact of land use activities on ground water supplies (Complete by 2014). Provide at least 2 educational training by 2014 on the use of the hydrogeologic atlas.

### Goal: Protect and improve biodiversity and recreational opportunities

Objective: Provide and participate in educational and outreach opportunities to engage citizens and stakeholders in the implementation of the Water Plan (i.e. civic engagement).

Actions:

- Public Meetings. Annually hold public meetings, as necessary, to keep the public informed of current water resource-related issues.
- Outreach and Education. Disseminate information to the public regarding water resource management activities and issues through newsletters (2 annually), brochures, websites, and media sources (on-going activities). Provide, as available, water quality-related educational materials to industry, homeowners, civic organizations, and schools.
- Educational Events and Workshops. Sponsor and facilitate educational events and workshops with partnering agencies. Complete 2-4 educational events, tours, or workshops annually.
- Funding Sources. Provide information to landowners, communities, and private interest groups regarding funding sources available for water resource management activities and projects.
- Partner Meetings. Hold and/or attend meetings with partners to discuss water resource management issues and potential partnership opportunities.

Objective: Continue local administration and coordination of water resource programs for the effective implementation of the Water Plan.

Actions:

- Water Management Coordinator. Maintain the Renville County Water Management Coordinator position and explore opportunities to expand the position to full time.
- Technical Coordinator. Continue utilizing the Soil and Water Conservation District (SWCD) to provide technical assistance to Renville County for Water Plan Implementation activities.
- Water Management Taskforce Meetings. Hold quarterly Water Management Taskforce meetings to discuss issues and review funding requests. Annually review progress in achieving Water Plan initiatives and identify emerging issues that should be incorporated into the Water Plan through the amendment process.
- Funding Sources. Actively pursue additional funding sources and grants to fund the implementation of Water Plan initiatives. Seek partnerships and cooperative agreements to finance initiatives, when appropriate.
- Grant Reporting. Annually report and manage grant funds once obtained from funding sources.
- Water Plan Revision. Review emerging issues that should be incorporated into the Water Plan through the amendment process and coordinate revisions to the Water Plan prior to its expiration.

- Joint Powers Board Membership. Support current and future membership in Joint Powers Boards. Attend meetings, as scheduled.
- GIS Datasets. Invest in the acquisition, development, and maintenance of GIS datasets, including LiDAR, digital soil survey, land use layers, US FWS restorable wetland inventory layers, USFWS nation wetland inventory, GIS generated storm maps, local inventory layers, and DNR data deli layers. Utilize these datasets to make informed decisions to prioritize implementation of conservation practices, land use planning, and water resource management.
- Consistency with the Water Plan. Work with local agencies, organizations, communities, and County departments to coordinate the consistency of plans, such as the Comprehensive Land Use Plan, Solid Waste Plan, and Wellhead Protection Plans, with the goals and objectives of the Water Plan.
- Water Plan Revision. Review emerging issues that should be incorporated into the Water Plan through the amendment process and coordinate revisions to the Water Plan prior to its expiration. The Water Plan will need to be amended by 2018.

# Rice County LWMP 2004-2014 amended 2010

## Priority Concern: Erosion Control

Objective: Erosion control and BMPs

Actions:

- Conduct contractor workshops for construction and agricultural projects teaching site BMPs
- Provide technical assistance to contractors and landowners to adopt soil erosion BMPs
- Implement BMP practices
- Research methods to address ravine and ditch erosion

Objective: Educate Rice County residents

Actions:

- Seek funding for erosion control demonstration projects
- Offer shoreline homeowners a class on erosion control and BMPs
- Provide educational assistance to contractors working on development projects
- Hold on demonstration on new and current BMPs each year

Objective: Buffer/filter strip establishment in agricultural areas, riparian corridors, bluff land interfaces, ditches, and natural streams

Actions:

- Promote the establishment and continued maintenance of buffers in agricultural areas
- Establish 3 buffer strips per year
- Send out ten proposals to landowners per year
- Hold one demonstration projects per year on how to keep surface water from eroding ravines, ditches, etc.

## Priority Concern: Stormwater Management

Objective: Stormwater retention and water quality improvement

Actions:

- Hold one demonstration project on native grass planting in rural and urban areas
- Route grade/fill applications for Commercial and New Home Construction Building Permit Projects located in sensitive areas to SWCD to evaluate a projects impact on natural areas/corridors and wetlands
- Provide technical assistance to contractors and property owners. Perform inspections and enforcement of NPDES Construction Site Permits

- Attend monthly plat review meetings
- Lobby for Rice SWCD to inspect industrial stormwater permits

Objective: Educate public on stormwater management

Actions:

- Educate the public through rain garden promotion, as well as other low impact design techniques, infiltration, and runoff reduction
- Conduct a low impact development demonstration project

Objective: Evaluate agricultural and shoreline buffers

Actions:

- Review agricultural areas to determine whether stormwater runoff is moving through a buffer system or artificial wetland
- Review shoreland areas to determine whether stormwater runoff is moving through buffer system or artificial wetland

Objective: Improve county drainage system condition

Actions:

- Inventory county drainage systems to determine the location and condition
- Repair and maintain ditch systems

## Priority Concern: Waste Disposal/Management

Objective: Septic system inventory

Action:

- Conduct septic system inventory to identify imminent public health threat systems throughout the county

Objective: Septic systems upgrade

Actions:

- Work with homeowners to upgrade at least 20 imminent public health threats per year
- Continue to provide low interest loan programs to residents for upgrading septic systems
- Research and work with cities to establish a septage receiving station

Objective: Septic system education

Actions:

- Educate homeowners on septic system maintenance, operation, and effects on water quality
- Educate homeowners on the benefits of grey water systems and their environmental affect
- Provide information to lakeshore owners on traditional as well as alternative septic systems for those with limited available space
- Host periodic maintenance/pumpers/installers/designers education workshops
- Continue to work with Southern Minnesota Wastewater Initiative to assist communities with inadequate sewage treatment in finding solutions to their wastewater problems

Objective: Agricultural/feedlot/education

Actions:

- Educate farmers on manure setback requirements along streams and other sensitive features
- Create 12 new manure management nutrient plans per year
- Evaluate 10 feedlots using MinnFarm software and site evaluation
- Work with landowners on ways to appropriately dispose of milk house waste
- Support manure management workshops, conservation tillage, technique training, and rotational grazing

Objective: Applying GIS to waste management

Actions:

- Create a GIS layer indicating the locations of where septage is being land applied
- Maintain a GIS layer indicating the locations of where manure is being applied

## Priority Concern: Groundwater

Objective: Education

Actions:

- Make material available to public on groundwater issues and wellhead protection
- Provide additional information on groundwater issues to homeowners located in karst regions within the county
- Develop educational materials on the importance of sealing unused wells
- Assist Extension in one educational event on protection of rural wells
- Continue to offer free nitrate clinics in partnership with MDA
- Provide information to homeowners explaining what to do with a well to protect id during/after flooding
- Continue to offer water testing kits to the public

Objective: Well sealing

Action:

- Apply for funding or use state cost-share to seal three unused wells located in sensitive areas of the county per year

Objective: Monitoring and data collection

Actions:

- Continue to support and administer the Volunteer Nitrate Monitoring Program to obtain long-term trend data on nitrates and other groundwater contaminants
- Work with the Department of Health on water quality database, and continued monitoring

Objective: Water conservation

Actions:

- Provide material informing citizens on the importance of conserving water
- Carefully evaluate large scale groundwater extraction projects

## Priority Concern: Surface Water

Objective: Improve/protect surface water resources

Actions:

- Promote programs that work to preserve and restore wetlands
- Continue to administer state WCA
- Work with other agencies to reestablish 15 acres of wetlands
- Dedicate time and available resources to help determine impaired waters status, and continue to submit water quality data to the MPCA for inclusion in their database to identify impairments
- Stay informed of TMDL projects as they develop, and participate in studies and decision making processes
- Provide assistance to Scott County on Sand Creek Watershed study
- Participate in the Roberds Lake, French Lake, and Circle Lake TMDL projects

Objective: Education

Actions:

- Educate the public on shoreline BMPs using news articles, website, lectures, and classes for county residents
- Provide an information packet to new homeowners locating in environmentally sensitive areas

Objective: Leadership

Action:

- Work more closely with the Rice County Coalition for Lake Associations (COLA) and the individual lake associations on projects to reduce water pollution

## Priority Concern: Coordination/Special Concern

Objective: Committee Meetings

Action:

- The Rice County Water Plan Technical Committee will meet twice annually and the advisory committee will meet once annually to discuss what has and has not been accomplished in the plan, and what steps need to be taken to accomplish the plan's objectives.

# Richfield-Bloomington Watershed Management Plan 2008

## Priority Concern: Water Quantity

**Goal: Coordinate intercommunity and/or interagency stormwater runoff, flooding, and other water qualities issues**

Actions:

- The RBWMO requires member communities to limit the storm water runoff rate to existing conditions for discharges across municipal boundaries unless it is subject to agreement or cooperative projects.
- The RBWMO requires that future discharge rates from new development and redevelopment will, at a minimum, not exceed the existing discharge rates. Discharge rates shall be consistent with the discharge rates outlined within the member communities approved Water Resource Management Plan.
- The RBWMO will defer to the local communities the responsibility of addressing storm water runoff management needs and problems provided that the impact of the problem and the source of the impact are wholly contained within a given community and the affected community is in conformance with the RBWMO policies.
- In cases where surface water impacts or the source of impacts transcend municipal boundaries, or the community is found to not be in compliance, the RBWMO shall review such problems and issue directives to the appropriate local government unit(s) for resolution. It will be the responsibility of the local communities to implement a project that is acceptable to the RBWMO.
- In cases where the local community refuses to implement a project per the directives of the RBWMO, or requests the RBWMO to facilitate resolution of the problem, the RBWMO shall complete improvements in conformance with the terms of the RBWMO Joint Powers Agreement.
- The RBWMO requires that local plans include a maintenance plan of their storm sewer system.
- Changes in the local water resource management plans which alter intercommunity storm water rates and volumes will require the review and approval of the RBWMO.
- Member municipalities shall forward to the RBWMO plans and other information concerning all projects and/or new developments that will affect approved local plans related to intercommunity discharge rates, or degrade the quality of water transcending the boundaries of an adjoining community.
- Upon receipt of development plans for projects that may affect intercommunity rates and water quality, the RBWMO will review these plans and forward their comments and directives to the local community within a 30-day period. If the local community fails to fully implement the

directives of the RBWMO within the prescribed time period, the RBWMO shall take appropriate action per the terms of the RBWMO Joint Powers Agreement

- The RBWMO requires that the design of all major storm water storage facilities shall attempt to accommodate a critical duration event with a 1% chance of occurrence in any given year. These facilities include ponds and their outlets. New storm sewer systems shall be designed to accommodate discharge rates associated with a critical duration event with a 10% chance of occurrence in any given year. It is the RBWMO's position that it is impractical and financially not feasible to construct drainage systems to accommodate runoff from rainfall events having lesser probabilities of occurrence than those identified above.
- The RBWMO requires that the design storm events shall be defined as having the Soil Conservation Service (SCS) Type II distributions
- The critical 1% chance event will be defined as the event that requires the greatest storm water storage volume in a storage facility. These facilities include lakes, ponds, and their outlets.
- The development of enhanced infiltration practices and low impact development techniques should be implemented to limit runoff volumes from the redevelopment area to 1988 levels or lower, provided the soils and the site are suitable for such practices, and that past and existing land use practices do not have a significant potential to contaminate groundwater.
- The RBWMO allows landlocked depressions which presently do not have a defined outlet and do not typically overflow to be allowed a positive outlet, provided it is in conformance with an approved local water resource management plan. However, enhanced infiltration or other LID techniques must be a component of the development/surface water management system.

## Priority Concern: Water Quality

### Goal: Maintain or improve the quality of water in lakes, streams or rivers within or in proximity to the RBWMO boundary

Actions:

- The RBWMO shall improve the availability of surface water quality information and data within its jurisdiction. The RBWMO shall make this information available to member communities for placement onto the City's and RBWMO Website.
- The RBWMO will require that member communities (which act as the LGU for the WCA) maintain an up to date inventory of wetlands and public water bodies to assist in the management of these resources.
- The RBWMO will coordinate with MPCA and other agencies efforts regarding monitoring, maintaining and improving surface water quality within the watershed.
- The RBWMO will include educational information on the RBWMO website to promote greater public understanding of, and participation in, protecting water quality.
- The RBWMO shall defer to the local communities all responsibilities for addressing storm water runoff water quality issues, provided that the impacts or source of impacts are wholly contained within a given community and the local community is in conformance with the approved local

plan. If the impacts or source of water quality impacts transcend municipal boundaries, local government units must submit to the RBWMO plans and information concerning the project or development for review. Upon completion of this review, the RBWMO shall submit its comments and findings to the appropriate governmental unit for implementation.

- Should a water quality problem that transcends municipal boundaries be identified, the RBWMO shall review the problem and issue directives to the member communities to take action to address the problem. If appropriate action is not taken by the member communities after notification by the RBWMO, the RBWMO shall take action to correct the problem. The cost of such work will be assessed to the appropriate community or communities.
- In the design and construction of all new or modifications to existing storm water conveyance systems, pretreatment of storm water runoff to NURP recommendations should be provided prior to discharge where feasible and appropriate. NURP recommendations as recognized by the RBWMO are taken from "Phosphorus Removal by Urban Runoff Detention Basins", Walker, 1987, and are as follows:
    - A permanent pool ("dead storage") volume below the principal spillway (normal outlet) which shall be greater than or equal to the runoff from a 2.5 inch storm over the entire contributing drainage area assuming full development.
    - A permanent pool average depth (basin volume/basin area) shall be a minimum 4 feet, with a maximum depth of 10 feet.
    - An emergency spillway (emergency outlet) adequate to control the one percent (1%) frequency/critical duration rainfall event.
    - Basin side slopes above the normal water level should be no steeper than 3:1, and preferably flatter. A basin shelf with a minimum width of 10 feet and one foot deep below the normal water level is recommended to enhance wildlife habitat, reduce potential safety hazards, and improve access for long-term maintenance.
    - To prevent short-circuiting, the distance between major inlets and the normal outlet shall be maximized.
    - Retardance of peak discharges for the more frequent storms can be achieved through a principal spillway design which may include a perforated vertical riser, small orifice retention outlet, or compound weir.
- The RBWMO adopts the MPCA Manual “Protecting Water Quality in Urban Areas” as part of the RBWMO Watershed Management Plan by reference.
- The RBWMO adopts the Minnesota Stormwater Manual as part of the RBWMO Watershed Management Plan by reference.
- The RBWMO will require local units of government to provide street sweeping pursuant to NPDES requirements as defined in the local SWPPP’s. Furthermore, future purchases of street sweeping units should give consideration to street sweepers which have the greatest ability to remove nutrients from the streets within the communities.
- The RBWMO will require the inclusion of skimmers in the construction of new pond outlets, and add skimmers to the existing system whenever feasible and practical. The designs shall provide for skimmers that extend a minimum of four inches below the water surface and minimize the

velocities of water passing under the skimmer to less than 0.5 feet per second for rainfall events having a one-year return frequency. The use of weirs in standpipes and submerged pipes as skimmers are also acceptable.

- The RBWMO requires local government units to include provisions for coarse sedimentation and skimming of oil and floatable materials prior to allowing any discharge to the Minnesota River. This requirement will apply in all cases except where it is deemed not feasible or not practical to do so. Considerations for variance to this policy will only be made in cases where the direct drainage area is limited in size and the probability that a spill or significant pollutant discharge from the area to areas outside the RBWMO would be extremely unlikely.
- The RBWMO will require that member communities distribute educational information to its residents on responsible practices they could employ to protect water resources within the community. Educational information should include the following components:
    - Opportunity for Public Participation
    - Illicit Discharge Detection and Elimination
    - Construction Site Storm Water Runoff Control
    - Post-Construction Storm Water Management in New Development and Redevelopment
    - Pollution Prevention/Good Housekeeping for Municipal Operations
- Further information about the educational program should be contained within each member community's MS4 permit and annual reports.
- The RBWMO supports property owners adjacent to water resources to establish a native vegetative buffer strip in conformance with existing municipal buffer policies or guidelines. This strip should consist of suitable plants to limit erosion and nutrient transport across the buffer strip. The RBWMO shall make available on its website educational material aimed at fostering responsible water quality management practices. Topics are anticipated to include:
    - Shoreland restoration and best management practices for property owners;
    - Wetland buffers and maintenance planting;
    - Water quality monitoring.
    - Rain gardens

  The RBWMO shall make this information available to member communities for placement onto the City's and RBWMO Website.
- The RBWMO will require communities to develop a retention/treatment basin cleanout and maintenance plan that will address maintenance pursuant to NPDES requirements.
- The development of enhanced infiltration practices and low impact development techniques should be implemented to limit Total Phosphorus and Total Suspended Solids to 1988 levels or lower for the redevelopment area, provided the soils and the site are suitable for such practices, and that past and existing land use practices do not have a significant potential to contaminate groundwater.
- The RBWMO will require as part of the RBWMO annual evaluation and reporting process that member cities implement their pollution prevention measures outlined in their NPDES MS4 SWPPPs. These include, but are not limited to the following:
    - Illicit Discharge Detention and Elimination

- Construction Site Storm Water Runoff Control
- Post Construction Storm Water Management Measures
- Pollution Prevention / Good Housekeeping Measures

## Priority Concern: Enhancement of Citizen Involvement, Public Participation, Information and Education

**Goal: Educate and involve the public on pertinent water resource management issues and increase public participation in water management activities pursuant to MP 8410.0090**

Actions:

- The RBWMO shall undertake completion of a website to provide public education on current events and programs of the RBWMO. Water resource management topics and information on the website would include sample articles for local communities and adding the updated watershed management plan to the site.
- The RBWMO staff will provide an annual update to each member community's advisory planning or parks commissions or related advisory commission on the RBWMO Plan and/or WMO programs and projects.
- The RBWMO shall prepare and make available to residents information through the web site pertinent water management issues. This information will provide an opportunity for residents to participate in watershed management activities.
- The RBWMO will require as part of the RBWMO annual evaluation and reporting process that member cities implement their education measures in their NPDES MS4 SWPPPs.
- The RBWMO shall undertake, via member cities, or participate in projects that seek to educate the public on water management issues.

## Priority Concern: Ditch Systems

**Goal: Provide a mechanism through which public ditch systems will be managed**

Actions:

- No officially established public or judicial ditch systems have been identified within the RBWMO.

## Priority Concern: Groundwater

**Goal: Protect and conserve the groundwater resource and encourage the infiltration of properly treated surface water to recharge groundwater**

Actions:

- The RBWMO will coordinate with other agencies and local units of government to identify sources or potential sources of ground water pollution. Required clean-up, if any, will be completed in conformance with State law.
- The RBWMO requires local communities to develop and implement well head protection plans as required by the Minnesota Department of Health.
- The RBWMO will assist where necessary in efforts to gather further information on the hydrogeology of the region. When such information becomes available, including information on the location of ground water recharge areas, the RBWMO will take into consideration these areas for the purpose of maintaining their recharge capabilities in protecting ground water quality.
- The RBWMO will assist where necessary in the efforts of Hennepin County and member communities in their current effort to develop a ground water flow model for the Prairie du Chien/Jordan aquifer.
- The RBWMO will cooperate with the Hennepin County Environmental Health Department to ensure that all unsealed or improperly abandoned wells within the watershed are properly sealed. Technical requirements for the abandonment of these wells will be in conformance with the Minnesota Department of Health Water Well Code.
- The RBWMO will require member communities to develop and implement ground water conservation measures consistent with DNR and Metropolitan Council guidelines for public water supplies.

## Priority Concern: Wetlands

### Goal: Protect existing wetlands and restore diminished or drained wetlands

Actions:

- The RBWMO will prohibit filling, draining, and altering of wetlands pursuant to the WCA.
- The RBWMO will require the member municipalities to manage wetlands in conformance with the rules developed by the Board of Water and Soil Resources.
- The RBWMO will utilize wetland inventory information developed by the U.S. Fish and Wildlife Service, and Cities in locating wetlands in the area.
- Wetlands will be protected within the RBWMO boundaries to assure that the value of the wetland in relation to its surface water quantity benefits are not significantly impacted as defined in local Wetland Protection and Management Plans.
- Prior to any site development activities, the LGU requires determination and identification of the location and extent of any wetlands present. If any wetland encroachment is proposed sequencing must take place and any proposed wetland impacts will be evaluated on a case by case basis in conformance with the rules associated with the Wetland Conservation Act which is administered by the local government units and Mn/DOT on their projects.

- The RBWMO requires that any review of a proposed wetland encroachment will initially address the issue of sequencing. It will be the municipality's responsibility to ensure that prior to allowing any wetland encroachment; all reasonable attempts to avoid such alteration must be demonstrated pursuant to WCA. This avoidance review must also consider the reasonableness of the no-build alternative.
- The RBWMO requires communities to restrict mowing, burning, or other non-filling related alteration to an existing wetland without LGU approval.
- The RBWMO requires member communities to address control of the invasive weed purple loosestrife at construction sites and elsewhere. Information on Best Management Practices for this and other invasive species is available from the Mn/DNR.
- The RBWMO or local governments may develop wetland management plans. The RBWMO supports wetland banking so that high value wetlands in appropriate areas may be created in lieu of requiring replacement of low value wetlands in unsuitable or inappropriate areas within the RBWMO.
- Wetland assessments of wetlands shall be in accordance with MnRam 3.0, the most recent version of MnRam, or other modified version as accepted by the BWSR.

## Priority Concern: Erosion

### Goal: Prevent the effects of sedimentation from erosion-prone areas and minimize erosion through aggressive implementation and enforcement of erosion control requirements by its member communities

Actions:

- For activities that disturb one acre or more of land, the member communities shall require the submission and implementation of a Storm Water Pollution Prevention Plan (SWPPP) in conformance with the MPCA NPDES rules to the City. These plans shall conform to the general criteria set outlined in the Minnesota Pollution Control Agency "Protecting Water Quality in Urban Areas", Surface Water Management Ordinance, and the NPDES Construction Site permit.
- The member communities shall have a program to regularly inspect construction sites for erosion and sedimentation control for all new developments and redevelopments one acre and larger in size OR sites that require a City grading permit.
- The RBWMO requires member communities to adopt an erosion and sediment control ordinance. A model erosion and sediment control ordinance is available on the MPCA's website at www.pca.state.mn.us/publications/wq-strm2-16b.pdf.
- The RBWMO requires member municipalities to identify a permit program or document the modification of an existing program to increase the awareness of erosion issues and promote compliance.
- The RBWMO recommends that municipalities give consideration to obtaining surety or identifies other measures to provide adequate safeguards to ensure the plan is carried out by the developer.

- The RBWMO will require that communities sweep streets consistent with the BMP requirements of their NPDES MS4 permit. Furthermore, future purchases of street sweeping units should give consideration to street sweepers which have the greatest ability to remove nutrients from the streets within the community.

## Priority Concern: RBWMO Administration

### Goal: Conduct RBWMO business in accordance with the Joint-Powers Agreement and the Watershed Management Plan

Actions:

- The RBWMO shall maintain twelve (12) active managers with five (5) managers appointed by the City of Richfield, and seven (7) manager appointed by the City of Bloomington.
- The RBWMO shall notify the Minnesota Board of Water and Soil Resources of all manager appointments and vacancies.
- Vacancies on the RBWMO Board shall be filled by the local government within ninety (90) days.
- At the annual meeting of the RBWMO Board the managers shall elect a chairperson, vice chairperson, secretary, treasurer, and other officers as deemed necessary.
- The RBWMO shall prepare an annual report and distribute annually a newsletter that meets the requirements of Minn. Statutes 103B.227 and Minnesota Rule 8410.0100.
- The Board shall coordinate its planning activities with contiguous watershed management organizations and counties conducting water planning and implementation.
- On or before April 1, the Board shall file with the Board of Water and Soil Resources and the clerk of each member governmental unit a financial activity and audit report of the previous fiscal year meeting the requirements of Minn. Stat. 103B.231 and Minnesota Rule 8410.0150.
- The RBWMO will keep regulation at the local level and will not administer a permit program unless local communities fail to develop and implement their local Water Resource Management Plans.
- The RBWMO will assess the performance of the member cities toward achieving the goals stated in this Plan. Starting in 2009, member communities shall prepare and submit an annual status report, similar to the annual NPDES report, to the RBWMO for review.
- Upon final approval of the RBWMO Plan, the member communities shall re-submit their Local Water Plans to the WMO by November 2009 for adoption within two-years of final RBWMO Plan approval by the BWSR.
- The RBWMO will establish a TAC in 2009. The TAC will meet at least annually and include membership of at least two technical staff from each member community. The TAC will:
    - Complete a peer review of each member community's local Plan activities and compliance with RBWMO plan in even numbered years.
    - Annually the TAC will review for conformance with each member community's local Plan and RBWMO Plan, a minimum of 2 site development permits from each member

community (1 municipal reconstruction and 1 private development) issued during that calendar year for each community.
    - Annually review each member community's NPDES annual report for compliance with education and maintenance requirements of the RBWMO.
    - The TAC will annually provide to the RBWMO Board a summary of local activity and compliance concerns.
    - The TAC will prepare an annual financial, activity, and audit report to be submitted to BWSR.
- The RBWMO will establish a website in 2009 and utilize the web site to provide member cities with information about the RBWMO, its activities, and Water Resource Management Plan.
- The RBWMO will continue to use the Community Services Commission (Richfield) and the Planning Commission (Bloomington) as its storm water advisory commission. As RBWMO issues come forward, they will be presented to the CAC for comment.

# Riley Purgatory Bluff Creek Water Management Plan 2011

**Goal (long-term): Improve water quality to fully support swimming in designated lakes**

**Goal (long-term): Improve water quality to fully support designated uses for water bodies, and remove water bodies from the Minnesota Pollution Control Agency list of impaired waters**

**Goal (long-term): Preserve vegetation and habitat important to fish, waterfowl, and other wildlife while also minimizing negative impacts of erosion**

**Goal (long-term): Maintain control of floodwaters and limit the impact of runoff quantity and rate on receiving water bodies.**

**Goal (long-term): Alter stormwater hydrographs (streamflow) through infiltrative strategies that reduce peak discharge rates and overall flow volume.**

**Goal (long-term): Include supportive actions in District project development and implementation toward ongoing Hennepin and Carver County groundwater planning and implementation.**

**Goal (long-term): Support municipal enforcement of the Wetland Conservation Act, including information about the Wetland Health Evaluation Program (WHEP), proactive participation in implementation of WCA requirements on District projects, and use of the District watershed model as appropriate to assist in the identification of high priority wetlands for protection, restoration, or potential wetland banking opportunities.**

**Goal (short-term): Address or eliminate the impact of carp on eutrophication in District lakes.**

**Goal (short-term): Develop a sustainable Communications Program that enables proactive actions by District citizen leaders and related partners to participate in project implementation and share costs.**

**Goal (short-term): Complete a watershed model for each of the three creek watersheds to assist in providing feedback regarding oversight of regulatory implementation. The model will also be used to identify project opportunities and site-specific best management practices aligned with long-term goals, including phosphorus and runoff management, and erosion control.**

**Goal (short-term): Develop a higher level of cooperation with municipalities and other watershed partners; this may include the development of cost-share programs and coordination of planned expenditures for addressing watershed issues.**

**Goal (short-term): Determine external, internal, and upstream waters loading contributions to the phosphorus budget of District lakes; work to reduce and manage phosphorus loading to District lakes through clearly defined projects according to respective sources and the District One Water Management Approach.**

Objective: Stabilize Hydrology

Action:

- Outlet and volume control/reduction modeling and design

Objective: External loading

Actions:

- Watershed Pollutant Loading Model
- Development Restore or create new wetlands
- Assess and correct deficiencies in watershed BMPs
- BMP Retrofit Analysis on a Watershed Scale
- Lake Eutrophication Models
- Upgrade existing BMPs in accordance with the retrofit analysis
- Construct new BMPs in accordance with the retrofit analysis
- Preserve or upgrade existing wetlands
- Maintain or upgrade stormwater ponds
- Non-structural BMPs
- Add new stormwater ponds
- Shoreline Restoration/Sediment Abatement
- Store stormwater in infiltration basins

Objective: Internal loading

Actions:

- Biomanipulation of phytoplankton through fisheries management
- Control via oxygenation, aeration, sediment oxidation, chemical inactivation of phosphorus or a combination of these methods
- Carp removal and management plan
- In-lake alum treatment
- Lake Eutrophication Models

Objective: Non-native vegetation management

Action:

- Develop Eurasian milfoil control plan

Objective: Cyanobacteria control

Action:

- Control cyanobacteria through destratification, sediment oxidation, chemical inactivation of phosphorus or other method

Objective: Eroding streambanks and incised channels

Actions:

- Construct toe protection on the outside bend of the meander to prevent channel from migrating.
- Realign or construct new channel, bypassing the more severely eroded streambanks. The new channel location will also provide room to regrade and revegetate eroding slopes.
- Install constructed riffle downstream of the log jam to protect against headcut moving upstream.
- Install rock vanes to direct flow away from eroding banks.
- Regrade and revegetate streambank.
- Remove log jams and construct riffle in its place.
- Stabilize overflow channel by filling and planting.
- Conduct vegetation management to promote ideal growth on bank's slope.
- Install biologs or rootwads to stabilize toe.
- Install rock vanes to direct flow away from bank
- Install tile drain in toe to reduce soil moisture
- Install toe protection
- Monitor site to see if additional erosion occurs and to determine the cause of erosion.
- Remove trees to reduce stress at top of bank.
- Confirm septic systems are functioning properly and are not contributing to erosion.
- Consider the use of vegetated reinforced soil stabilization (VRSS) to stabilize steep bank.
- Conduct vegetation management to promote ideal vegetation for streambanks.

Objective: Hillside erosion

Actions:

- Determine if catch basins are functioning properly.
- Direct channelized flow away from eroded gully with the use of wash-outs
- Regrade and revegetate eroding bluffs

- Install tile drain in toe to reduce soil moisture.
- Meet with homeowners and work with them to address the upland erosion problem
- Partially fill the eroded gully and replant with vegetation
- Raise bed of gully with check dams/constructed riffles
- Raise berm in front of catch basin to prevent short circuiting.
- Realign stream away from bank
- Identify additional runoff routes that may be contributing to the problem sites.
- Conduct vegetation management to promote optimal vegetation for the site

Objective: Perched Culvert

Actions:

- Remove filter fabric and install new rip rap
- Reduce end of pipe erosion potential by providing additional energy dissipation in the form of large boulders added to the end of the culvert
- Meet with landowner to determine the function of the culvert and abandon its use if possible
- Remove exposed geotextile fabric and replace with granular filter to better resist slide failure
- Supplement existing rip rap to reconnect culvert to stream
- Add baffled outlet to rip rap protection as an alternative.
- Cut off the pipe such that the end is closer to the existing streambank. Add rip rap and granular filter below the culvert
- Regrade the entire streambank to a 3:1 slope. Add toe protection and revegetate the bank.
- Install toe protection
- Prevent runoff from running downslope to eroded area around the culvert
- Regrade and revegetate bank upstream of culvert
- Resize culvert to allow the passage of bank full flow
- Stabilize erosion around culvert with toe protection and revegetation

# Scott County Comprehensive Water Resources Management Plan 2009-2018 amended 2013

## Priority Concern: Wetland Management

**Goal: To protect and enhance wetland ecosystems, and to ensure/encourage a measurable net gain of wetland functions and acreage**

Objective: Preserve wetlands (no net loss) for water retention, recharge, soil conservation, wildlife habitat, aesthetics, and natural enhancement of water quality.

Actions:

- Adopt Minnesota Wetland Conservation Act (WCA) Requirements as the Basic Wetland Management Standards of the WMO.
- Operate WCA.
- Assists With Wetland Replacement Monitoring
- Assist With Opportunities to Acquire Land for Banking and Mitigation.

Objective: Protect wetlands from impacts caused by stormwater runoff

Actions:

- Erosion Control and Post Construction Stormwater Water Quality Standards.
- Wetland Buffer Standards

Objective: Enhance and restore wetlands

Actions:

- Incentives Payments.
- Coordination with Other Wetland Restoration Programs.
- Promote Public Values Incentive Program
- Targeted Wetland Restoration/Riparian Reforestation Program.

## Priority Concern: Surface Water Quality

**Goal: To protect and improve surface water quality**

Objective: Promote sustainable systems of buffers and green infrastructure

Actions:

- Watercourse Buffer Standards
- Promoting Disconnected Stormwater Management and Low Impact Development (LID)

- Promote Public Values Incentive Program (See strategy 1.3.3 under Goal 1).
- Support Detailed Area Planning

Objective: Prevent further degradation

Actions:

- Stormwater quality Standards for New and Redevelopment (cross reference to strategy 1.2.1)
- Cost Share for Innovative Practices
- Nitrate Management Demonstrations
- Promoting Disconnected Stormwater Management and Low Impact Development (LID).

Objective: Address impaired waters and improve water quality

Actions:

- Cost Share and Incentive Program for Existing Land Uses.
- Targeted Project Implementation and Capital Improvements.
- Technical Assistance
- Promote and Enable Curly-Leaf Pondweed Control.
- Promote and Enable Rough Fish Control.
- Fish IBI Improvements.
- Sand Creek Sediment Reduction
- Lake Sediment Phosphorus Inactivation.
- Cedar Lake Watershed

Objective: Improve understanding of water quality

Actions:

- Complete Diagnostic Studies/TMDLs and Subwatershed Assessments leading to targeted implementation and monitoring
- Monitoring and Assessment Tools Development.

Objective: Promote street sweeping

Actions:

- Local Water Plan Amendment.
- Encourage the use of Regenerative Dustless Sweepers.

Objective: Coordinate with other agencies and water quality programs

Action:

- Coordination and Meeting Attendance

Objective: Promote source protection

Actions:

- MS4 SWPPPs in Local Water Plans
- Salt and Sanding Best Management Practices in Local Water Plans
- Promote Nutrient Management Plans

## Priority Concern: To Protect Groundwater Quality and Supplies

Objective: Preserve and protect groundwater resources both in quality and quantity

Actions:

- Stormwater infiltration criteria
- Promote Conservation and Wise Use of Groundwater.
- Cost share Well Decommissioning.
- Nitrate Management Demonstrations.

Objective: Improve understanding of groundwater resources

Actions:

- Groundwater Monitoring
- Regional Modeling
- Support Wellhead Protection Efforts
- Support County Detailed Area Planning

## Priority Concern: Flood Management

Objective: Promoting and ensuring maintenance of drainage and stormwater systems

Actions:

- Stormwater Facility Maintenance Standards.
- Future Public Ditch Operations
- Coordination with Others on Outlet Structure Maintenance
- Coordinating with Municipal Separate Storm Sewer Systems (MS4) Permit Maintenance Requirements.

Objective: Minimize the risk of flooding by promoting a regional approach to stormwater management and maximizing upstream storage.

Actions:

- Promoting and Facilitating Regional Stormwater Management.

- Incorporating Flexibility in Standards for Regional Approaches.

Objective: Address known regional flooding concerns and problems that have cross jurisdictional implications and/or origin.

Actions:

- O'Dowd/Thole Lake Outlet Feasibility Assessment.
- Markley Lake Outlet Feasibility Assessment Coordination
- Hwy 169 Area Drainage Feasibility Assessment.
- City of Jordan Flood Damage Reduction Efforts

Objective: Local flooding concerns that do not cross jurisdictional implications and/or origin are the responsibility of LGUs to address in their Local Water Plans.

Action:

- Local Flooding Consideration in Local Water Plan Preparation.

Objective: Improve understanding of flooding risks in the WMO.

Action:

- Technical Advisory Committee Input
- Digital Terrain Modeling

## Priority Concern: Increase Public Participation and Land and Water Stewardship

Objective: Assist and enable MS4 education efforts

Action:

- Lead Coordination and Implementation of the Scott County Stormwater Education Plan

Objective: Encourage public participation

Actions:

- Maintain and Enable the Watershed Planning Commission
- Engage and Utilize Volunteers
- Provide Opportunities for Public Input.
- Provide Opportunities for Public Participation in Stewardship Events
- Provide Education and Marketing to Foster Sustainable Behaviors and Environmental Stewardship
- Make Scientific Studies and Products of the Scott WMO Readily Available to the Public

- Specific Information and Education Materials.
- Promote a Variety of Education Programs
- Use Multiple Outlets to Distribute Information
- Small Acreage Outreach.

## Priority Concern: Improve Communication

Objective: Improve communication with other agencies and jurisdictions

Actions:

- Coordinate with and involve LeSueur and Rice counties in studies and management actions
- Continue Technical Advisory Committee meetings
- Routinely share data and information.
- Quarterly WMO & BWSR Meetings.

Objective: Inform and involve the public

Actions:

- Maintain and enable the Watershed Planning Commission
- Keep public informed.
- Assist public with understanding the complexities of water management locally and at the State

## Priority Concern: Optimize Public Expenditures

Objective: Minimize public expenditures

Actions:

- Partner with Public Works Departments
- Linear Project Flexibility.
- Assess Feasibility of Brokering Pollutant Trading.

Objective: Maintain consistency of the WMO's standards with other standards and regulations.

Action:

- Use Existing Regulations as the Basis for WMO Standards.

Objective: Minimize redundancy and improve jurisdictional boundaries.

Actions:

- Emphasize LGU Implementation Through Local Water Plans.
- Consider Boundary Change with the Prior Lake – Spring Lake Watershed District (PLSLWD)

Objective: Streamline Local Water Plan requirements

Action:

- Utilize Existing Approved Local Water Plans.

Objective: Regularly assess programs and progress

Actions:

- Periodic Assessments and Program Reviews
- Use Long Term and Short Term Metrics to Measure Progress.

Objective: Promote equitable distribution of project and program costs.

Actions:

- Expect Local and Land Owner Participation.
- Regulate in Proportion to Impact.
- Tax/Assess Affected Parties for Larger Capital Improvements.
- Share Costs with LGUs for Projects with Inter-jurisdictional Benefits and/or Impacts.

Objective: Engage volunteers

Actions:

- Volunteer Monitors.
- Volunteer Stewards and Educators

# Sibley County LWMP 2013-2023

## Priority Concern: Drinking water quality

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

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

Actions:

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

### Goal: Protect and improve the quality of surface waters

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

Actions:

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

### Goal: Conduct water quality studies

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

Actions:

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

## Priority Concern: Water quantity

### Goal: Encourage the preservation and restoration of wetlands

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

Actions:

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

### Goal: Conduct water quantity studies

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

Actions:

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

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

## Priority Concern: Nutrient, Manure and Human Waste

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

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

Actions:

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

Objective: Continue to encourage homeowners to install compliant septic systems

Actions:

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

## Priority Concern: Soil Erosion

### Goal: Reduce erosion and sediment loading of surface waters

Objective: Install BMPs that reduce erosion or sediment loading

Actions:

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

## Priority Concern: Plan Administration

### Goal: Provide for effective plan administration and coordination

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

Actions:

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

### Goal: Review and update the Water Plan

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

Actions:

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

### Goal: Use of GIS data

Objective: Utilize GIS data to enhance work of county departments

Actions:

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

### Goal: Pursue grant funding opportunities

Objective: Seek out funding to implement identified plan activities

Action:

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

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

Action:

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