Pomme de Terre River Watershed: Water Plans

The Pomme de Terre River Watershed encompasses Big Stone, Douglas, Grant, Otter Tail, Stevens, and Swift Counties. Each county has developed a 10-year rotating comprehensive local water management plan (LWMP) in order to improve water quality within Minnesota. The water plans are comprised of a set of concerns the counties have described as a priority, along with how they intend to effectively manage them.

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

Water Plans:
Big Stone County LWMP 2013-2023
Douglas County LWMP 2009-2019
Grant County LWMP 2010-2015
Otter Tail County LWMP 2009-2019
Stevens County LWMP 2005-2015 amended 2010
Swift County LWMP 2003-2012 amended 2008

Water Plan Evaluation

Concern	Grant	Otter Tail	Stevens	Swift
Coordination/Partnership				
Stormwater Management				
Surface Water				
Drainage Management				
Groundwater				
Priority Pollutants				
Shoreland Management				
SSTS/ISTS				
Technical/Financial Assistance				
Wetlands				
Conservation BMPs				
Education				
Erosion Control				
Sediment				
Seek Funding				
TMDL - Impaired Water				
Wellhead Protection				
Feedlot Compliance				
Lake Management Plan				
Monitoring				
Municipal Wastewater				
Watershed-based Approach				

Concerns addressed in County Water Plan associated with nutrient issues

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

Big Stone County LWMP 2013-2023

Priority Concern: Surface Water Quality - Reducing priority pollutants

Goal: To ensure the County's surface water resources exceed minimum water quality standards

Objective: Protect and enhance the County's surface water quality

Actions:

- Surface Water Quality Monitoring. Work with stakeholders to monitor surface water quality.
    - Annually review available surface water quality data and watershed priorities. Prioritize projects and Best Management Practices (BMPs) based upon the information.
    - Continue monitoring efforts throughout the County.
    - Develop and maintain a user-friendly database for all water resource monitoring data.
    - EDA. Annually submit surface water quality data to MPCA/EPA to be entered into MPCA's Environmental Data Access (EDA) system.
    - Volunteer Monitoring. Recruit volunteers to participate in monitoring programs. At least one volunteer should be identified for Big Stone, Long Tom, Marsh, and Otrey Lakes.
    - Develop an interactive, web-based mapping application that connects users with water quality data from specific monitoring sites.
- Surface Water Quality Profiles. Work with stakeholders to profile surface water quality.
    - Seek opportunities to refine watershed analysis and management strategies using detailed GIS information, water quality data, and other tools to guide plan actions, target implementation and augment funding from outside sources.
- Subwatershed Water Quality Goals. Build local water quality database, utilizing available data to identify specific water quality goals for water resources. Use to target BMP implementation at the sub-watershed level utilizing CWL funding.
- Alternative Shoreland Management Ordinance. Adopt the Alternative Shoreland Management standards that are currently being discussed statewide once they become available.
- Monitoring Plan. Prepare an annual Monitoring Plan for assessing the condition of surface and groundwater resources, as well as identifying pollution sources. This Plan should identify the specific sites to be monitored and contain detailed information on the physical, chemical, and biological parameters to be analyzed at each site.
    - Continue the Big Stone Lake Water Quality Monitoring Program and Big Stone Lake tributary monitoring (UMRWD).
- Protect and Enhance Water Quality. Implement water quality BMPS to protect and enhance Big Stone and Long Tom Lakes.
    - Complete a full inventory of sewer system compliance.
    - Survey and develop preliminary plans to repair shoreline and tributary erosion.

    - Reduce flows to Big Stone Lake from the Whetstone River. Work with the US Army COE on the restoration of the Whetstone River.
    - Complete diagnostic feasibility study, pre engineering and cost estimate (2015).
    - Complete final engineering and project development plans (2016).
    - Secure Funding (2017-18)
    - Construction/Restoration of river channel (2019-2023).
- Marsh Lake Restoration. Support/sponsor the Marsh Lake restoration efforts that will restore the Pomme de Terre River to its historic channel, modify the Marsh Lake Dam, construct fishway, construct secondary drawdown structure, breach dike at fish pond, install gated culvert in the Louisburg Grade Road (2017).
- Land Locked Basin Elevations. Work with the DNR to access the numerous land locked basins. Implement solutions to high water bank erosion, flood storage, and recreational enhancement.
- Artichoke Lake. Implement water quality BMPS to protect and enhance Artichoke Lake.
    - Stabilize 1,800 feet of shoreline on Artichoke Island.
    - Establish one mile of riparian buffers along Artichoke Creek in sections 13 and 14 in Artichoke Township.
    - Restore one mile of shoreline buffers. Target north shore, east shore, and south bay.
    - Cost-share establishing cattle exclusion fencing to eliminate bank erosion along Artichoke Lake and Artichoke Creek.
    - Target a wetland restoration in Section 24 of Artichoke Township to ease increasing elevations in Artichoke Lake.
- Long Lake. Implement water quality BMPS to protect and enhance Long Lake.
    - Restore one mile of shoreline buffers.
- East Toqua Lake. Implement water quality BMPS to protect and enhance East Toqua Lake.
    - Restore 4,000 feet of native grass/trees along eastern shoreline.
    - Investigate upstream water retention/stormwater treatment opportunities and implement two (2) projects.
    - Partner with Graceville Golf Course to eliminate unnecessary phosphorus runoff into East Toqua Lake.
- Twelve Mile Creek/County Ditch 4. Implement water quality BMPS to protect and enhance Twelve Mile Creek/County Ditch 4.
    - Reestablish two miles of filter strips and buffers.

Objective: Remove the County's water bodies from the MPCA's 303d list of impaired waters by 2030

Actions:

- MPCA Watershed Approach. Coordinate the preparation and implementation of the MPCA Watershed Approach.
    - Participate in the intensive monitoring and assessment; watershed characterization and problem investigation; and watershed restoration and protection strategies.

    - Fully participate in the Water Resource Assessment Project (WRAP) on schedule for 2015 for the Upper Minnesota River Watershed.
    - Continue to participate in the on-going WRAP in the Bois de Sioux River watershed.
    - Continue to participate in the completed WRAP Pomme de Terre River Watershed.
- Subwatershed Approach. Prioritize BMPs based on subwatershed modeling, analysis, and TMDL results.
    - Annually identify priority subwatersheds for BMP implementation.
    - Promote BMPs in priority subwatersheds through newsletters, mailings, and media sources.
- Pomme de Terre Turbidity TMDL Implementation. Partner with the Pomme de Terre River Association Watershed Project to properly implement the Pomme de Terre River Turbidity TMDL Implementation Plan.
    - Replace 5 open tile inlets.
    - Enroll 80 acres into rotational grazing plans.
    - Enroll 320 acres into filter strips.
    - Target 5,000 acres for conservation tillage.
    - Target 80 acres for wetland restorations.
    - Install 5 water and sediment control basins.
    - Target one feedlot buffer project.
    - Install 250 feet of exclusion fencing.
- SSTS Inspections. Inspect SSTS for imminent health threats.

Objective: Partner with feedlot and livestock producers to identify priority sites to implement agricultural waste BMPs

Actions:

- County Feedlot Program. Continue to locally administer the County Feedlot Program to assist feedlot operators in obtaining and maintaining compliance with State regulations.
    - Target feedlot inspections in shoreland areas.
    - Inspect a minimum of 10% annually.
    - Work with feedlot operators on registering sites (2017).
- Feedlot Education. Continue educational efforts focusing on current regulations, permit issues, and BMP programs.
    - Host an annual educational meeting with feedlot operators.
    - Include information in local newspapers quarterly
    - Host County Fair Booth highlighting various feedlot rule components such as manure application by sensitive waters, registration, manure management planning and mortality composting.
- Cattle Exclusions. Identify sites where cattle exclusions are needed.
    - Cost-share five (5) cattle exclusion BMPs.
    - Target Stony Run and Big Stone Lake subwatersheds.

- County Feedlot BMP Implementation Program. Work with feedlot operators to implement Ag waste/feedlot BMPS.
    - Secure cost-share funding that includes technical assistance to install Ag BMPs and nutrient management plans.
    - Implement two Ag waste/nutrient management plans per year.
    - Provide low interests loans for noncompliant feedlots. Target two (2) annually.
    - Upgrade five (5) feedlots with BMPs to eliminate runoff to nearby bodies of water.
    - Promote 500 acres of pasture management by implementing BMPs such as stream crossings, fencing, remote water systems, managed grazing plans, etc.
    - Host a workshop on the importance of correct manure application.
    - Host a field day on the importance of correct manure management.

Objective: Identify and mitigate pollution caused by wastewater and failing SSTS's

Actions:

- County SSTS Program. Continue to locally administer the County's SSTS Program.
    - Semiannually publish information in local newspapers and/or newsletters.
    - Inspect all new/replacement sewer system installations and educate homeowners at that time.
    - Provide homeowner maintenance manuals when systems are replaced or new.
    - Require upgrades of all identified imminent public health threat systems.
- Noncompliant Upgrades. Secure financial assistance programs to provide assistance for homeowners to upgrade noncompliant SSTSs.
    - Upgrade 10 noncompliant SSTS annually.
    - Secure MPCA and MDA funding to provide low interest loans to upgrade noncompliant systems.
    - Utilize grant dollars to upgrade low income noncompliant systems.
    - Wastewater Treatment. Cooperatively work with local governmental units and other partners to identify and resolve wastewater treatment-related pollution issues in Ortonville and Browns Valley.
    - Upgrade the Peninsula sewer line/lift station in Ortonville.

Goal: To reduce soil erosion and sedimentation

Objective: Work with landowners to identify priority sites to implement erosion and sediment control BMPs

Actions:

- SWCD BMP Program. Provide educational, technical, and financial assistance, as available, to landowners for the implementation of erosion and sediment control BMPs.
    - Install two (2) water and sediment control structures annually.
    - Install four (4) alternative tile intakes.

- Install two (2) stream bank stabilization projects annually.
- Install three (3) grass waterways annually.
- Install four (4) wetland restorations using RIM/WRP or other funds.
- Install one (1) terrace project annually.
- Promote and install two (2) rain gardens annually.
- SWCD Surface/ground Water Quality & TMDL's.
- Install fifty (50) acres of vegetative buffer filter strips annually.
- Assist with ten (10) well decommissioning's annually.
- Provide up to 75% cost-share on intakes and pipe structures to control gully erosion on natural and designed channels.
- Provide a one-time incentive payment of $1,000 per acre to establish vegetative buffers to a width of 2 rods.
- Work with Boise de Sioux, Pomme de Terre and Upper Minnesota River Watershed District's to implement practices that improve water quality on TMDL impaired waters throughout Big Stone.

- Ongoing SWCD Programs. Continue with and expand the SWCD's Conservation Programs as they are available.
  - Establish one mile of field windbreaks annually.
  - Install six miles of weed control fabric annually.
  - Publish ten (10) annual articles promoting the Tree Program.
  - Establish twelve (12) farmstead shelterbelts annually.
  - Establish ten acres of wildlife food plots/winter cover annually.
  - Install 500 feet of living snow fences annually.
  - Continue to work with involved agencies on expanding the Big Stone/Traverse County CWMA grant program.
  - Participate with implementing the MN Prairie Plan goals/objective.
    *Key corridor areas to have 40% grassland, 20% wetland coverage.
- Soil Health. Promote soil health by encouraging cover crops, no-till/minimum till, grazing, etc.).
  - Publish information in quarterly newsletters.
  - Target marginal land for BMP programs.
  - Promote conservation tillage of 500+ acres annually.
- SWCD Clean Water Funding Projects. Provide educational, technical, and financial assistance, as available, to landowners for the implementation of erosion and sediment control BMPs.
  - Secure funding for a shoreline stabilization project on Artichoke Lake. Project includes resloping the North side of shoreline with rock rip/rap and a vegetative buffer with native grasses and forbs.
  - Support the UMRWD in pursuing funds for a watershed ravine terrain analysis of high priority areas including: Fish, Meadowbrook and Stoney Run Creek.
  - Search available funding sources for a potential project on Toqua Lake to reduce priority pollutants and strengthen the shoreline.
  - Continue to search for funding sources for the "Save the Island" project on Artichoke.

Priority Concern: Surface Water Management

Goal: To effectively manage surface water resources for multiple purposes

Objective: Ensure long-term agricultural production by properly maintaining the public drainage system

Actions:

- Public Drainage System. Ensure that public drainage systems are operated and maintained in accordance with the State Drainage Law 103E.
    - Annually identify where maintenance is needed. Maintain one mile County ditch annually in high erosion areas that are considered damaged.
    - Assist with restoring proper flows where needed.
    - Redetermine the benefits on systems as requested.
    - Complete County Ditch Inventory to include details on each system.
    - Complete a Drainage Records Modernization project to scan and organize all drainage records.
    - Identify public and private tile lines that flow into the open ditch system.
    - Install five (5) buffers and/or side inlets annually to control erosion and sedimentation and to maintain efficiency.
    - Conduct a buffer inventory to ensure the systems are adequately protected from overland flow and that nutrient and sediment filtration exists.
- Conservation Drainage Practices. Provide educational, technical, and financial assistance, as available, to landowners for the installation of conservation drainage practices.
    - Implement one (1) project annually.
    - Pursue funding to establish a two-stage ditch system test site.
- Watershed Project Drainage BMPS. Provide cost-share to landowners for the implementation of conservation drainage BMPS.
    - Provide up to 75% cost-share on pipe structures to control gully erosion on natural and designed channels. Implement twenty (20) projects.
    - Provide up to 75% cost-share to remove open tile intakes and replace with alternative intakes. Implement fifty (50) projects.
    - Provide up to 75% cost-share on controlled drainage projects. Implement two (2) projects.
- County Ditch 2. Provide cost-share to landowners for the implementation of conservation drainage BMPS along County Ditch 2 (a tributary to the MN River)
    - Cost-share pipe structures to control erosion. Implement five (5) projects.
    - Cost-share to remove open tile intakes and replace with alternative intakes. Implement five (5) projects.
    - Cost-share two (2) controlled drainage projects.
    - Target County Ditch 2 for the development of a Drainage Management Plan.

- 12 Mile Creek/County Ditch 4. Provide cost-share to landowners for the implementation of conservation drainage BMPS along 12 Mile Creek/County Ditch 4.
    - Cost-share intakes and pipe structures to control erosion. Implement five (5) projects.
    - Cost-share two (2) controlled drainage projects.
    - Target 12 Mile Creek/County Ditch 4 for the development of a Drainage Management Plan.

Objective: Manage stormwater pollution by identifying key stormwater issues and potential solutions

Actions:

- Watershed Project Stormwater BMPs. Provide educational, technical, and financial support, as available, for the implementation of stormwater BMPs.
    - Cost-share installing three (3) Urban Stormwater Ponds.
    - Cost-share installing three (3) rain gardens/lakeshore buffers annually.
    - Cost-share providing 1,000 rain barrels.
    - Include educational and cost-share information in quarterly newsletters.
    - Require that stormwater discharges into all water resources be approved by the District.
- Stormwater Management Plans. Participate in the development and implementation of Comprehensive Stormwater Management Plans.
    - Apply for funds to develop a Stormwater Management Plan for the City of Ortonville (2014).
    - Partner with the City of Ortonville on implementing its Stormwater Management Plan. Stormwater Management Plans. Participate in the development and implementation of Comprehensive Stormwater Management Plans.
    - Apply for funds to develop a Stormwater Management Plan for the City of Graceville (2015).
    - Partner with the City of Graceville on implementing its Stormwater Management Plan.

Objective: Identify opportunities to preserve and restore wetlands and other water retention sites

Actions:

- Wetland Conservation Act Administration. Continue to locally administer the Minnesota Wetland Conservation Act.
    - Ensure that wetlands are protected or mitigated properly during land use activities and agricultural drainage.
- Wetland Restorations. Actively restore wetlands where water quality and quantity benefits outweigh the costs.
    - Restore two (2) wetlands annually.
    - Increase the number of Wetland Reserve Program easements by two (2) each year by targeting marginal farmland.

    - Promote various wetland banking programs, such the Agricultural Wetland Bank program establish in 2012. Increase the number of wetlands in these programs by one (1) annually.
- Watershed Project Wetland Restorations. Work with stakeholders to restore wetlands in both urban and rural settings.
    - Partner with the U.S. Fish and Wildlife Service to provide up to 90% cost-share or $10,000, whichever is less, for wetland restorations.
    - Provide landowners with $1,000 per acre incentive payment for enrollment in programs, such as CRP, RIM, and WRP.
    - Implement five (5) wetland restorations.
- Flood Mitigation. Work with stakeholders to restore wetlands and other water retention projects to mitigation flooding.
    - Partner with the BdS to restore the Moonshine Lake Basin.
    - Target two (2) flood mitigation/water retention projects in West Toqua Lake subwatershed; Sections 2 and 3 Toqua Township; and Section 1 Graceville Township.
- Upper Minnesota River Restoration. Work with stakeholders to restore the original Upper Minnesota River near Ortonville and the Big Stone National Wildlife Refuge.

Objective: Identify where shoreland restorations are needed

Actions:

- Shoreland Restorations. Provide educational, technical and financial resources, when available, on proper shoreland management and restoration BMPs.
    - Use LiDAR and GIS technology to annually identify potential sites.
    - Examine alternatives to using rip-rap during shoreland restorations.
    - Cost-share two (2) shoreland restorations annually.
    - Secure funding to create two (2) shoreland restorations demonstration sites.
    - Cost-share shoreland restoration products, such as bio-logs, aquatic plugs, native seeding, etc.
- Watershed Project Shoreline Lake Restorations. Provide cost-share and technical assistance to lakeshore owners along Big Stone and Long Tom Lakes for planting native grasses and forbs.
    - Implement five (5) shoreline buffer restoration projects. Artichoke Lake. Implement water quality BMPS to protect and enhance Artichoke Lake.
    - Conduct shoreline inventories to determine priority areas.
    - Stabilize 1,800 feet of shoreline on Artichoke Island.
    - Establish one mile of riparian buffers along Artichoke Creek in sections 13 and 14 in Artichoke Township.
    - Restore one mile of shoreline buffers. Target north shore, east shore, and south bay.
- Long Lake. Implement water quality BMPS to protect and enhance Long Lake.
    - Conduct shoreline inventories to determine priority areas.

- Restore one mile of shoreline buffers. East Toqua Lake. Implement water quality BMPS to protect and enhance East Toqua Lake.
- Conduct shoreline inventories to determine priority areas.
- Restore 4,000 feet of native grass/trees along eastern shoreline.

Priority Concern: Groundwater quality and quantity

Goal: To protect the County's aquifers

Objective: Ensure there is an adequate supply of safe drinking-water

Actions:

- Groundwater BMP Program. Provide educational, technical and financial assistance, as available, to landowners for the implementation of groundwater protection BMPs.
    - Secure funding which would include technical assistance to install Ag BMPs and nutrient management plans to protect groundwater. Prioritize sensitive groundwater recharge areas.
    - Incorporate the County's sensitive groundwater recharge areas map into to the local land use decision making process.
    - Implement two (2) groundwater BMP projects annually.
    - Cost-share sealing twenty-five abandoned wells.
- Groundwater Quality Monitoring. Assist with groundwater quality monitoring efforts and proactively enact measures to protect water supplies, when appropriate.
    - Annually review data and prioritize BMP Programs accordingly.
    - Continue to participate in groundwater studies.
    - Continue to test drinking water for nitrates through the County's Public Health Department.
    - Biannually promote and conduct Nitrate Testing Clinics.
    - Pesticide Container Collection. Work with Solid Waste to continue an annual pesticide container collection day.
- Wellhead Protection. Participate in the implementation of wellhead protection plans for the cities of Odessa and Ortonville.
    - Target groundwater BMP Programs in Wellhead Protection Areas, such as RIM and CRP.
    - Incorporate Wellhead Protection Areas into local zoning maps. Make the maps available online and update annually.
    - Work with cities on mutually agreed upon ordinance language for Wellhead Protection Areas.
    - Target sealing all abandoned wells in Wellhead Protection Area. Implement two (2) annually.

Objective: Implement BMPs to protect the quantity of groundwater

Actions:

- Groundwater Quantity Monitoring. Assist with groundwater quantity monitoring efforts and proactively enact measures to protect water supplies, when appropriate.
    - Continue to monitor 20 groundwater well test sites annually.
    - Review data annually and prioritize BMP Programs accordingly in sensitive groundwater recharge areas. In addition, work with the DNR to identify areas of limited supply and/or known impacts to aquifers for prioritization of BMP projects.
    - Promote and/or install soil moisture monitoring equipment system(s) within the county to more accurately determine the need for agricultural irrigation water application during the irrigation season, to promote both water conservation and best use practices. Provide updated results on the County's website.
- Groundwater Quantity BMPs. Provide educational, technical and financial assistance, as available, to landowners for the implementation of groundwater protection BMPs.
    - Cost-share converting conventional irrigation systems to conservation systems. Implement two (2) projects annually.
    - Increase acres in Irrigation Management Program by 1,000 acres.
    - Annually participate in the MDA's Irrigation Workshops County Geologic Atlas. Secure funding to complete a County Geologic Atlas.
    - Partner with the DNR and MGS for training on how to understand and use the County's Geologic Assessment and, if/when available, the Geologic Atlas (2017).
- County Water Conservation Plan. Pursue funding to establish a Water Conservation/Drought Contingency Plan (2015).
    - Partner with stakeholders to provide household water conservation kits, including low-flow showerheads and low-flow toilet conversion kits.

Goal: To effectively administer the water plan

Objective: Engage the citizens and stakeholders on key water planning issues and implementation opportunities

Actions:

- Ongoing Issues and Programs. Properly raise awareness on key water planning issues and available BMP funding opportunities.
    - Quarterly publish newsletters.
    - Promote BMP programs in the newspaper a minimum of two times annually.
    - Quarterly update websites with current information.
    - Establish BMP demonstration/test sites.
    - Annually host workshops on priority water planning issues.
    - Annually promote BMP practices and available funding at the County Fair

- Water Plan Funding. Secure funding and stakeholder cooperation to properly implement the Water Plan's Action Steps.
    - Annually apply for Clean Water Funds and similar funding mechanisms to implement Action Steps.
    - Ensure the County is prepared to provide matching funds in order to qualify for BMP grants.
- Watershed Focus and Stakeholder Cooperation. Partner with watershed/stakeholder groups on implementation activities to minimize expenditures and to maximize results.
    - Annually attend watershed/stakeholder meetings.
    - Invite watersheds/stakeholders to participate with local water plan initiatives.
    - Participate fully in the Watershed Restoration and Protection Strategy (WRAP) process - UMRW beginning in 2015; BdS in progress; PdT completed.
- Water Plan Task Force. Keep the local Water Plan Task Force engaged in ongoing water plan activities.
    - Annually meet with the Task Force to review progress and to discuss current programs, upcoming projects and water plan activities.
    - Update the Water Plan's Action Steps before the Plan expires in 2018.

Douglas County LWMP 2009-2019

Priority Concern: Development Pressures and Land Use

Goal: Manage development and growth in Douglas County in such a way as to maintain and/or improve the region's water quality

Objective: Guide new development with thorough planning, consideration for natural resources, and accurate information.

Actions:

- Encourage the incorporation of the Local Water Management Plan into the County Comprehensive Plan.
- Actively participate in the review and revision of county ordinances as they relate to the protection of water resources.
- Identify specific protection or restoration needs of each major watershed within the County. Consider specific recommendations for best management practices and/or zoning changes to address needs.
- Maintain updated ordinance information on county website and provide summary information to realtors.
- Review development plans, encourage common infrastructure, and promote the use of low impact development concepts to conserve woodlands, expand open space, and protect other significant natural features.
- Seek methods of creating incentives for conservation developments and disincentives for lot and block development designs.
- Continue to promote the use of sensitive areas maps by the Planning Advisory Commission, Board of Adjustment, and County Board of Commissioners for use in the evaluation of environmental impacts that specific permit applications may have on local natural resources. Promote updating, increasing accuracy, and adding new information as better or more recent data becomes available, including information from the recently completed DNR County Biological Survey.
- Continue to enforce existing shoreland ordinances and other ordinances as they relate to water quality. Where needed, dedicate personnel in the Land and Resource Management Office for targeted enforcement.
- Cooperate and assist with the development of alternative wastewater treatment systems
- Improve communication between cities and county regarding shoreland alterations especially on lakes with split authority by holding a biennial meeting.

Objective: Implement and promote land use practices that will reduce and/or mitigate negative human impacts on natural resources.

Actions:

- Encourage conservation easements to provide buffers and/or prevent filling in wetlands on new developments in order to conserve natural areas and preserve water quality. Assist the Development Review Team with the evaluation of preliminary plats as needed.
- Review the needs of the county in regards to implementing Surface Water Zoning ordinances. Consider setting standards for development based on lake designation or designation of special protection areas within a single lake (i.e. natural environment designation for sensitive areas of general development lakes).
- Protect shore impact zones (SIZ) on all lakes. Revise ordinance(s) to better define "intensive clearing" and to require a Shoreland Alteration Permit for all clearing within the SIZ. Revise ordinance(s) to prohibit filling of all wetlands in SIZ.
- Promote buffer strips, lakescaping, rain gardens and other practices that reduce the impacts of human activities. Attend meetings and give presentations to service organizations, lake associations, and realtors.
- Obtain grant funds whenever possible to provide cost-share assistance.
- Maintain an educational booth at the annual County Fair.
- Continually educate LRM and SWCD staff on new best management practices, low impact development strategies, and water resource management technology.
- Provide all new County Commissioners and Planning Advisory Commission members with information on the effects of various land uses and related water resource impacts by conducting an annual workshop, regular presentations, and requested training.
- Continue to support solid waste programs and education efforts in hazardous waste disposal and recycling. Support efforts to educate citizens about the environmental impacts of illegal burning.
- Utilize an aggressive marketing strategy of select water quality issues, best management practices, and conservation through use of the media, billboards, community and school presentations, and other education programs. Annually conduct a resource-related poster contest.

Priority Concern: Wastewater and Stormwater Management

Goal: Improve stormwater runoff management in Douglas County.

Objective: Improve stormwater runoff quality by increased utilization of stormwater best management practices throughout the County.

Actions:

- Promote the use of erosion and sediment control and other best management practices to reduce the amount of sediment and nutrients entering watercourses from commercial and residential areas.
- Encourage the use of pervious pavement systems including long term maintenance and inspection to ensure proper function. LRM will tract locations of permitted pervious pavement systems. Establish a standardized inspection form.
- Produce and distribute educational materials to inform citizens about the MN state law prohibiting the use of phosphorus in lawn fertilizers.
- Maintain and update the inventory of all feedlots in the County through the county Feedlot Program. Follow the annual feedlot work plan and inspect, in priority order, feedlots based on proximity to water, open lots, and watershed.
- Encourage the writing and utilization of nutrient management plans through incentives and cost-share programs. Provide technical and financial assistance for the closure of abandoned manure waste systems as needed.
- Promote the use of erosion and sediment control and other best management practices such as buffer strips and no-till seeding to reduce the amount of sediment and nutrients entering watercourses from agricultural lands. Install sixty-five acres of buffer strips, create 2,000 feet of terraces or sediment blocks and seed 1,200 no-till acres per year.
- Pursue funding to provide incentives or cost-share to assist agricultural landowners for implementation of erosion and sediment control and BMPs. Assist agricultural landowners with the installation of a 50 foot buffer strip on all agricultural land riparian to public waters and encourage similar practices on residential and commercial properties.
- Work with agricultural landowners to replace open lateral tile lines with alternative tile intakes. Provide assistance when appropriate and available.

Objective: Encourage compliance with stormwater rules and ordinances by continuing public education, promotion of BMPs, and further data collection, assessment, and management.

Actions:

- Continue storm drain marking projects in Alexandria, Brandon, Carlos, Forada, Miltona, and Osakis to improve community awareness.
- Monitor at least one ditch, storm drain, and/or storm water pond to evaluate quality and quantity of storm water each year.
- Ensure MPCA and LRM Joint Powers agreement remains in place. LRM has regulatory authority for construction stormwater for NPDES permitted sites and sites where more than one acre of impervious surface is created. Provide information and workshops to contractors regarding new NPDES requirements as it become available. Review all stormwater pollution prevention plans (SWPPP) for proposed plats.

- Create and maintain a database of detention ponds and other storm water management systems to track maintenance schedules and intervals of clean out requirements. Ensure maintenance of storm water management facilities on a regular basis.
- Conduct tillage survey to determine crop residue levels and target areas for conservation tillage practices.

Goal: Improve wastewater management in Douglas County.

Objective: Work to prevent SSTS failure and related sewage pollution in Douglas County.

Actions:

- Work cooperatively with watershed and lake organizations to distribute educational materials and information to the public regarding SSTS operation and maintenance. Maintain a supply of brochures and other information for distribution.
- Digitize septage disposal sites to identify areas of land spreading in coarse-grained soils that have potential for ground water contamination. Upon completion, re-evaluate the use of these areas as suitable disposal sites.
- Educate property owners on proper septic system maintenance by distributing information, maintaining the Douglas County Website, and providing news releases at least twice a year.

Objective: Identify and ensure the upgrade of failing septic systems.

Actions:

- Pursue grants and low-interest loans to assist with SSTS upgrades. Continue to use Chippewa River Watershed Project and MN Department of Ag BMP Loan programs.
- Require SSTS inspections within the next five years in all shoreland zoning districts and inspections within 10 years in all other residential zoning districts.
- Continue to require a septic system inspection and/or Certificate of Compliance at property transfers for any systems over five years old. Continue to require Certificates of Compliance for permit applications with existing septic systems over five years old.
- Continue to enforce Chapter 7080 of Minnesota State Rules throughout the County by requiring the upgrade on non-compliant systems and inspection of all SSTS installations.

Priority Concern: Water Quality

Goal: Protect and maintain surface water quality in Douglas County from further degradation.

Objective: Monitor and assess surface waters to meet the required amount of data for MPCA impaired waters assessment.

Actions:

- Utilize water quality data to determine long term trends and gauge effects of changing land uses.
- Collect data on all lakes in the County approximately 50 acres or larger within the next eight years. Work with MPCA to assess surface waters to determine water quality status for protection and restoration.
- Create a priority lake list based on major watershed (eight-digit HUC), land use, and lake ecology.
- Work with the Minnesota DNR Division of Waters to create/acquire lakeshed maps for identified priority lakes.
- Train volunteers in advanced water quality monitoring, beyond Secchi disk readings. Monitor lake inlets and outlets.
- Pursue funding for monitoring activities.

Objective: Encourage water quality protection through planning.

Actions:

- Assist with MPCA Lake Assessment Plans.
- Assist lake associations with the development Lake Management Plans. Seek funding to complete development and implementation.
- Encourage lakeshed-based planning.
- Participate in appropriate meetings to provide technical advice, assist in coordination of water quality improvement efforts of both local and regional organizations. Attend at least 10 DCLA meetings each year.
- Cooperate with lake associations to implement lake-specific projects. Facilitate participation in grant programs, such as the Healthy Lakes Program.
- Educate citizens and local decision-makers on the economic values of clean water resources in sustaining the local tourism industry and maintaining property values by conducting two or more presentations at local organizations' meetings.

Objective: View drainage systems as key to watershed management.

Actions:

- Increase water quality monitoring of drainage ditches.
- Host workshop(s) on alternative tile intakes.
- Seek funding for incentives and promote side inlets, alternative tile intakes, ditch buffers, and ditch abandonment.

Goal: Improve or restore impaired surface waters.

Objective: Assist with the development of TMDL studies and implantation plans.

Actions:

- Support and cooperate with the PdTJPB on projects within or affecting Douglas County. Attend committee meetings as requested.
- Support and cooperate with the CRWP and the MPCA on the Chippewa River TMDL process and other projects within or affecting Douglas County. Attend 12 CRWP meetings each year.
- Support and cooperate with the SRWD and the MPCA on the Sauk River TMDL processes and other projects within or affecting Douglas County.
- Assist and cooperate with Todd SWCD and the MPCA on the Long Prairie River TMDL process and projects.
- Assist and cooperate with the MPCA with the Lake Winona TMDL process. Continue to work with the City of Alexandria and other agencies to improve water quality of Lake Winona.
- Assist and cooperate with other TMDLs as needed.

Objective: Assist with the implementation of completed TMDL.

Actions:

- Work with TMDL lead local government units (LGUs) and MPCA to put best management practices (BMPs) on the ground to improve water quality of impaired systems.
- Seek funding through special grants and appropriations for the implementation of BMPs.
- Assist with monitoring of surface waters to determine the effectiveness of TMDL implementation activities.

Goal: Protect and maintain ground water resources in Douglas County

Objective: Maintain and promote existing cooperative partnerships that monitor ground water.

Actions:

- Continue to maintain seven monitoring wells to measure static water levels in select areas.
- Provide public information on how and where to get wells tested, types of tests available, maximum allowable limits on ground water and drinking water contaminants, and what do if a well is contaminated.
- Assist county residents with well water testing for nitrates and provide advice to them regarding testing results.
- Work with the MN Department of Agriculture to acquire information on nitrate sensitive areas.

Objective: Develop plans to protect ground water quality and quantity.

Actions:

- Cooperate with cities and the Minnesota Department of Health in developing and implementing wellhead protection plans for all public/community water supplies in the County.

- Determine the feasibility of conducting a comprehensive ground water inventory such as a geologic atlas to determine availability, extent, and sensitivity to pollution of ground water resources. Incorporate ground water sensitivity information into the sensitive area maps.
- Promote municipal water systems in all industrial areas.
- Promote sealing of abandoned wells in all areas to reduce the potential for ground water contamination. Provide cost-share assistance when available.
- Examine soil sensitivities and feedlot locations for potential ground water contamination. Target priority areas for nitrate testing and additional information.
- Seek funding to study the impacts of abandoned manure pits on ground water. Seek funding for soil borings to be done to allow for the certification of compliance on undocumented manure storage facilities.

Objective: Educate citizens on the importance of protecting ground water quality and conserving ground water resources.

Actions:

- Continue to promote public education of maintaining our ground water resources through avenues such as the Kids' Groundwater Festival, which will reach over 400 fourth grade students annually.
- Promote the importance of water conservation.
    - Support municipalities in their adoption of water conservation rate structures.
    - Educate and encourage the public to use water efficient plumbing fixtures and appliances, and rainfall sensors on landscape irrigation systems.
    - Host workshops and promote the use of rain barrels.
- Educate local officials and landowners on the benefits of reclaiming abandoned gravel pits to protect ground water recharge areas.

Grant County LWMP 2010-2015

Priority Concern: Contaminated runoff from both urban and agricultural land entering surface waters

Objective: Encourage and promote urban and agricultural land use practices to protect surface water resources

Actions:

- Promote the use of existing federal, state and local conservation programs that reduce soil erosion and sedimentation through the establishment of buffer strips, wetland restorations, field windbreaks, and grassed waterways.
- Promote participation in the Environmental Quality Incentives Program (EQIP) and
- Conservation Stewardship Program (CSP) to establish and maintain BMPs such as conservation tillage and nutrient management in conjunction with established buffer strips.
- Promote and implement the upgrading of individual sewage treatment systems in rural and lakeshore areas.
- Promote and implement the use of animal waste management systems for feedlot facilities.
- Encourage the proper application, storage, and disposal of agricultural, industrial, and household chemicals and their containers.
- Assist volunteers with surface water monitoring activities on high priority lakes and rivers to determine and evaluate point and non-point pollution sources. Insure that data collected through these efforts is entered into STORET.
- Encourage all of the cities in Grant County to install buffer strips, or storm-water retention basins at the outlets of storm sewers. Assist the cities in obtaining grant funds to install these BMPs.
- Promote the establishment of buffer strips, rain gardens and wetlands in urban and lakeshore areas. Assist the lake associations and cities in obtaining grant funds to provide landowners with cost-share incentives.
- Utilize LIDAR data to increase the acres farmed under precision agricultural techniques to more efficiently utilize nutrient inputs.
- Encourage and promote the maintenance of permanent vegetation within county and township road right of ways.
- Promote pasture management BMPs that prevent the overgrazing of pasturelands adjacent to surface waters.
- Work in cooperation with the Pomme de Terre river association to implement BMP's outlined in the TMDL implementation plans for turbidity and fecal Coliform on the Pomme de Terre River.
- Work in cooperation with Traverse SWCD, Stevens SWCD, Big Stone SWCD, West Ottertail SWCD, and Bois De Sioux Watershed District to implement BMP's outlined in the TMDL implementation plan for turbidity on the Mustinka River.

- Work in cooperation with the Chippewa River project to implement BMP's outlined in the TMDL implementation plan for turbidity and fecal Coliform on the Chippewa River.
- Encourage and promote the replacement, and or relocation of ground water wells where surface water runoff has the potential to contaminate ground water.

Priority Concern: Excess runoff water volumes from urban and agricultural land

Objective: Improve stormwater runoff quality and reduce quantity by increased utilization of stormwater management practices throughout the County

Actions:

- Enforce existing state law regarding a one rod grassed buffer strip on either side of new and improved county and joint county drainage ditches.
- Promote the use of vegetated buffer strips, to reduce runoff, erosion, and sedimentation.
- Promote the voluntary restoration of drained wetlands through CRP, RIM/ WRP and other programs, to increase water storage, provide filtration of sediment and pollutants, and increase wildlife habitat.
- Protect existing wetlands through the Wetlands Conservation Act to retain existing water storage, provide filtration of sediment and pollutants, and maintain wildlife habitat.
- Coordinate with the Bois de Sioux Watershed District, County Highway Department and Local Townships to develop an inventory of all roads and ditch authority culverts in the County.
- Promote the use of rain gardens and other best management practices that reduce runoff rates in urban and lake shore areas.
- Ensure that storm water runoff issues are addressed in any new development within the shoreland area. By requiring and reviewing a copy of the storm water permit and storm water pollution prevention plan before issuing any shoreland zoning permits.
- Promote the modification of ditch systems, when landowners on the ditch system desire to restore drained wetland basins.
- Encourage through information and education a reduction in impervious surface within the shoreland and urban areas.
- Encourage the County Commissioners and County Planning Advisory Commission to adopt county wide zoning that provides for improved storm water runoff protection through sub division ordinances.
- Priority Concern: Management of shoreland areas and surface water use, specifically on natural environment lakes, rivers and sensitive areas on recreational and general development lakes

Priority Concern: Management of shoreland areas and surface water use, specifically on natural environment lakes, rivers, and sensitive areas on recreational and general development lakes

Objective: Protect and improve the water quality, and fish and wildlife habitat of protected surface water resources of Grant County by initiating a process to reclassify tributary streams where appropriate, and clearly defining and mapping sensitive areas.

Actions:

- Utilize current technology and available data to review current classification of county tributary streams based on hydrology, and drainage area, to determine if the current classification is appropriate.
- Where the current classification is documented to be inappropriate based on the selected parameters described in item 1 above, the County will petition the Commissioner of DNR to reclassify the tributary stream into the appropriate class or establish a sub-class for portions of the stream.
- Work with the County Planning Advisory Commission to clearly define the parameters of sensitive areas.
- Develop a county wide map of sensitive areas based on the defined parameters for sensitive area utilizing GIS technology, LIDAR data, and Soils mapping.

Objective: Identify a process of enacting surface water use regulations on selected lakes, portions of lakes and rivers

Actions:

- Provide educational opportunities to lake associations, landowners and elected officials on the potential benefits of surface water use regulations.
- Work in cooperation with riparian landowners and the public to develop ordinances on lakes of high priority to landowners and stakeholders.
- Work in cooperation with local township boards to identify and implement surface water use ordinances on locally selected lakes.
- Conduct landowner surveys in cooperation with the township boards to gauge the interest in adopting surface water use regulations on lakes within that township.

Otter Tail County LWMP 2009-2019

Priority Concern: Development Pressures

Goal: Otter Tail County will maintain or improve the quality of the surface waters within their boundaries

Objective: TMDL Allocations: Address current impaired waters within Otter Tail County

Actions:

- Participate in the development of TMDLs as determined by the 303(d) listing of impaired waters (Otter Tail River from Rice Lake to Mud Lake for dissolved oxygen and West Spirit Lake for Total Phosphorus). Provide BMP information to the Chippewa and Pomme de Terre watershed projects for implementation practices on impairments downstream of Otter Tail County. The Otter Tail County Board, SWCD and/or LWMP will attend meetings and provide input in the writing of TMDLs.
- Develop and implement a method to determine the existence of additional impaired waters.
- Work with the MPCA on the development of a TMDL for Nutrient/Eutrophication and
- Biological Indicators (Total Phosphorus) for West Spirit Lake. Review monitoring assessments by Chippewa and Pomme de Terre watershed organizations to determine effectiveness of BMPs.
- Surface Water Assessment grants and investigate the feasibility of high school students completing surface water monitoring.

Objective: Lake Association Support: Support lake associations and the Otter Tail County COLA to protect and preserve the lakes and lakeshed environment.

Actions:

- Continue to support Shoreland Specialist position at EOTSWCD to provide the lake associations with an advocate and advisory contact.
- Continue annual workshops through the Otter Tail COLA, teaching lakeshore property owner's lakescaping BMPs.
- Provide mailings to smaller lakes in Otter Tail County to promote pro-active development and land use within their lakesheds. Notify lake associations of training available through MN Waters.
- Work with Otter Tail COLA and MPCA to add 5-10 lakes per year to their monitoring program. Ensure all data is entered into MPCA STORET system. Fund monitoring on smaller lakes as available.
- Continue connection with stakeholders such as BWSR, MDA, MDH, MPCA, DNR, LIDs, and Watershed Districts; completing studies in Otter Tail County and list available data sources on Otter Tail County's website.

- Set-up and participate in existing environmental education programs for youth such as the Envirothon, conservation days, lake management curriculum, ag-in-the classroom, conservation camps for kids (pheasants forever), prairie wetlands center programs, FFA, 4-H.
- Pursue funding sources for display media to be made available to area restaurants encouraging Best Management Practices for city, lakes, agriculture and residential property. Identify need for phosphorus free fertilizer and present facts to property owners.
- Work with Otter Tail County Lake Associations on completion and implementation of Lake Management Plans.
- Update information brochure listing agencies and organizations responsible for available information with person, phone number, and web page.
- Support the completion of aquatic vegetation mapping on priority lakes in Otter Tail County (52 lakes completed to date). Re-assess for changes after completion.
- Maintain Local Water Management Update on county web site.
- Hold annual water plan meeting with presentation of accomplishments and work plan for upcoming year.

Objective: Stormwater/Drainage Management: Offer education and incentive programs aimed at mitigating the effects of overland runoff on the surface waters of Otter Tail County, utilizing available regulations if necessary

Actions:

- Coordinate with the Bois de Sioux Watershed District to increase water storage through water retention structures and non-structures, and other temporary and permanent structures in the Mustinka and Bois de Sioux watershed.
- Coordinate with the Buffalo-Red River Watershed District to increase water storage through water retention structures and other temporary and permanent structures within the watershed.
- Support DNR and local government efforts in establishing and/or maintaining lake levels at appropriate elevations, creating outlets and discharge conditions with regard to water quality and quantity issues pursuant to MN Rules 6115.0221.
- Provide incentive funding for high priority buffer strips where appropriate along water courses and basins.
- Enforce existing lakeshore buffer regulations on new developments. Provide buffer incentives for existing lakeshore owners through DNR Shoreland Initiative Grant.
- Enforce existing required buffer area between rivers / streams / lakes and Ag fields and existing requirement for vegetation on steep slopes and bluffs.
- Reward existing BMPs through the Conservation Security Program in eligible watersheds as funding allows. Pursue funding for perpetual easements on developments around sensitive areas.
- Support 20 no-till farming practices / year through cost-share incentives such as EQIP.
- Map the county ditch system and scan old documents into digital data.

- Support adoption of an annual assessment maintenance fund for each county ditch.

Objective: Wetlands/Wildlife Habitat: Identify and protect wetland and wildlife habitat areas located within Otter Tail County

Actions:

- Enhance existing and new wetland restoration and buffers programs such as CRP, WHIP, WLI, RIMWR and USFWS. Promote wetlands within the shoreland and groundwater recharge areas.
- Restore 1000 - 2000 acres of wetland and wildlife habitat annually.

Goal: Develop regulations, educate and incentives to ensure orderly development with minimal impacts to sensitive areas to preserve Otter Tail County's natural resources

Objective: Sensitive Areas: Develop a model to identify areas sensitive to intensive development throughout Otter Tail County

Actions:

- Explore available sensitivity models being utilized by other counties and work with LRM, Eagle Lake Township and Dead Lake to determine feasibility of use as a lake districting pilot project, for potential use in county-wide land use planning.
- Develop Lake Districting county-wide to protect sensitive areas from degradation due to overdevelopment.
- Request DNR re-classification of 203 lakes in Otter Tail County. Adopt and implement re-classification of lakes 150 acres or less in size from General or Recreational
- Development to Natural Environment Shoreline.
- Participate in and support state-wide process of shoreland rulemaking and support adoption of new rules when approved by the State.
- Educate the decision makers of Otter Tail County by pursuing funding to bring training to the decision makers locally.

Objective: Agriculture: Support the Agriculture Advisory Task Force and their recommendations to the Otter Tail County Board regarding regulation of agriculture practices

Actions:

- Actively participate as a member of the Ag Advisory Task Force. Support the recommendation of the need for a long-range county comprehensive plan and investigate the obstacles preventing it from happening.
- Support county delegation for feedlots by informing the County Board of the program, and the feasibility of one designated feedlot officer and technical support staff to complete inventory through MPCA feedlot program, and administer the program.
- Support the adoption of the agriculture rules included in the new State Shoreland Rules.

Objective: Sub-surface Sewage Treatment: Promote countywide SSTS compliance through systematic inspection, education and regulation

Actions:

- Continue systematic Sub-surface Sewage Treatment System (SSTS) inspection around the shorelines of Otter Tail County Lakes. Target lakes identified in Section II:
- Support the county adoption of the new SSTS rules in 2010, requiring system certification every three years.
- Utilize Extension products to develop maintenance fact sheet to be issued with 800-plus compliance letters on SSTS.
- Facilitate land-owners meetings to encourage cluster systems with maintenance agreements in sensitive areas, moving the disposal site away from inadequate soils.
- Continue low interest loan program for failing septic systems. Prioritize sensitive areas such as high water table, wellhead protection area, excessively sandy or heavy soils.

Priority Concern: Groundwater Quality

Goal: Otter Tail County will protect the existing groundwater quality for drinking water resources

Objective: Source water protection: Otter Tail County will participate in the preservation of the quality of the drinking water supply resources

Actions:

- Participate on wellhead/source water protection teams during the development and implementation of Wellhead Protection Plans.
- Identify Wellhead Protection Areas on a County GIS map layer.
- Conduct four Nitrate testing clinics (Otter Tail, New York Mills, Fergus Falls, and
- Perham) per year through MDA and cooperative efforts with lake associations and communities.
- As part of the Nitrate testing clinics, distribute handouts to inform landowners of potential causes of contamination from arsenic, whether artificial or natural and available testing for groundwater.
- Encourage the DNR to work with the local unit of government to incorporate conservation practices with irrigation permits within sensitive groundwater areas.
- Coordinate groundwater monitoring results throughout the county and request MDH presentation of information every two years to the LWMP task force and county board per the sand plain agreement with MDH.
- Cost-share up to 75% toward sealing of abandoned wells. Prioritize wellhead protection, groundwater recharge, and other sensitive areas for funding.
- Continue low interest loan program for failing SSTS. Prioritize sensitive areas such as high water table, wellhead protection area, excessively sandy or heavy soils.

- Promote education of the general public on chemical/fertilizer use and BMPs through
- EOTSWCD, WOTSWCD and Extension newsletters, and articles in the local newspapers.
- Develop and implement 20 Nutrient Management Plans annually to prevent over application of livestock and commercial fertilizer.

Priority Concern: Groundwater Quantity

Goal: Otter Tail County will work to maintain the existing adequate volumes of groundwater for the use of the constituents

Objective: Preservation of aquifer volume: Preserve the adequacy of the groundwater volume through education, incentive and regulation

Actions:

- Address the Otter Tail County Commissioners and the East and West Otter Tail SWCD
- Boards resolutions to prevent movement of groundwater from within the boundaries of the county to other major watersheds.
- Investigate and comment on future proposed ethanol plants for volume of surface and/or groundwater needed and the capacity of the aquifer or surface water system.
- Work with irrigators within the county on utilizing BMPs to reduce the irrigation needs.
- Develop a program to educate the public and support the sustainability of the aquifer resources in Otter Tail County.

Stevens County LWMP 2005-2015 amended 2010

Priority Concern: County Administration/Enforcement of Subsurface Sewage Treatment Systems (SSTS)

Goal: To protect surface and groundwater quality in the County

Objective: Amend current SSTS ordinance to conform to new MPCA rules and continue to administer and enforce a countywide septic system program

Actions:

- Draft an amended SSTS ordinance and hold a public hearing for County Board consideration and adoption.
- Continue to administer and enforce SSTS ordinance.
- Develop a strategy to identify SSTS that pose an imminent public health threat and target for compliance. Focus efforts in shoreland and TMDL areas.
- Implement an annual plan (dependent upon additional grant funding) to inspect 20 SSTS annually and provide assistance to homeowners not in compliance. Focus will be in shoreland and areas with approved TMDL Fecal Coliform Implementation Plans.
- Develop a strategy and information/education program for the general public to address proper operation and maintenance of SSTS.
- Continue to seek additional low interest AgBMP loan funds, grants and/or incentives to update County SSTS.
- Provide an annual report of SSTS activity through the Natural Resource Block Grant requirements.

Priority Concern: Groundwater/Rural Water/Wellhead Protection

Goal: To provide good quality water supply to County cities and rural residents

Objective: Assist with Wellhead Protection Planning

Actions:

- Participate on wellhead/source water protection teams when invited by the local water suppliers. Provide available assistance with advice and technical land use and resource information when wellhead protection plans are developed.
- Create GIS shape files identifying wellhead protection areas when completed.
- Identify wellhead protection areas as priority areas for BMP incentive programs.

- Provide a variety of education on both public wellhead protection areas and the protection and management of private wells and well areas to city residents, farms and businesses regarding specific actions they can take to protect drinking water.
- Continue countywide well testing and/or educate landowners on how to test their own well.
- Continue to provide cost-share to properly seal 10 wells per year (pay up to 50% with a $300 maximum).
- Encourage water conservation through use of low-pressure irrigation systems to conserve groundwater in the county.
- Continue to monitor DNR observation wells (11 in total).
- Continue promotion and collection of household hazardous wastes. Conduct four collections in the county annually.
- Contact the Minnesota Department of Health for an updated list of priority wells in the county.

Priority Concern: Erosion and sediment control concentrating on identified areas of agricultural lands for gully erosion and concentrated flows

Goal: Protect the County's soil resources and restore surface water quality

Objective: Reduce erosion and sedimentation by applying best management practices on identified agricultural lands. Priority watersheds will be the Pomme de Terre, Chippewa, Mustinka.

Actions:

- Seek a 10% increase in fields meeting crop residue targets countywide based on tillage transect results (Current five year average 2002 - 2007 was 22%).
- Complete a tillage transect survey bi-annually to show county residue data and inform the public of the results.
- Continue to fund a CCRP position at SWCD to promote and target sensitive areas for filter strips and wetland restorations in watersheds with TMDL Implementation Plans.
- Establish 2,000 new acres of filter/buffer strips along ditches and streams to capture sediment as it leaves agricultural fields. Enforce the minimum one-rod grassed area as it applies to MN Statute §103E, drainage law, and a 50-foot buffer around protected waters. TMDL impaired watersheds will be a priority.
- Establish 20 acres of grass waterways.
- Construct 50 water and sediment control basins.
- Continue to promote and provide tree and grass planting services through the SWCD at a competitive price to landowners. Establish 25,000 feet of field windbreaks and 3,000 acres of native grass plantings.
- Encourage five participants to install rock inlet/French drains for field draintile.
- Continue to promote and administer the Ag BMP low interest loan program to help fund eligible conservation tillage equipment through the MN Department of Agriculture.

- Utilize LIDAR elevation information to identify gully erosion and prioritize the promotion of new inlet locations.
- Control gully erosion through the use of side inlet pipes on drainage systems. Target 15 or more (depending upon available funding).
- Seed 500 acres of the most highly erodible cropland to appropriate vegetative cover through existing programs (i.e., CRP & RIM). Focus efforts in the Muddy Creek/Dry Wood Creek Sub-Watersheds. and Mustinka Watershed.
- Utilize Working Lands Initiative funds to provide cash incentive for enrollment of land into CRP or land retirement programs in the high priority areas.

Objective: Reduce run-off pollutants, focusing on sediment, pathogens, nitrogen, and phosphorus

Actions:

- Work with the Minnesota Pollution Control Agency to complete TMDL studies of the impaired waters on the 303d list. Develop implementation plans to restore the impaired waters to their designated use.
- Work cooperatively with the MPCA and Pomme de Terre Watershed Association Joint Powers Board in applying strategies and management measures identified in the Pomme de Terre Watershed TMDL Fecal Coliform Implementation Plan. The Implementation Plan can be found at: http://www.pca.state.mn.us/publications/wq-iw7-08c.pdf.
- Seek CWP 319 or other grant funding to focus on reduction of non-point source loading of the impaired stretches of the Pomme de Terre, Chippewa and Mustinka River Watersheds in Stevens County.
- Promote nutrient management throughout the County and target 500 acres per year. Work cooperatively with the MPCA and Pomme de Terre Watershed Association Joint
- Powers Board in applying strategies and management measures identified in the Pomme de Terre Watershed TMDL Fecal Coliform Implementation Plan. The Implementation Plan can be found at: http://www.pca.state.mn.us/publications/wq-iw7-08c.pdf.
- Seek CWP 319 or other grant funding to focus on reduction of non-point source loading of the impaired stretches of the Pomme de Terre, Chippewa and Mustinka River Watersheds in Stevens County.
- Promote nutrient management throughout the County and target 500 acres per year.

Priority Concern: Stormwater and drainage management focusing on wetland and restorations and flood control

Goal: Improve surface water management by decreasing runoff, flooding and erosion while maintaining the drainage systems already in place to sustain agricultural productivity.

Objective: Improve stormwater runoff quality by increased utilization of stormwater management practices throughout the County.

Actions:

- Assist the MPCA on identifying construction sites in need of a NPDES permit and provide educational materials to builders on the Stormwater Program.
- Promote the use of erosion and sediment control and other best management practices to reduce the amount of sediment and nutrients entering watercourses from commercial and residential areas.

Objective: Apply watershed–based principles in properly managing the drainage system.

Actions:

- Coordinate with the Bois de Sioux Watershed District to seek water retention/storage in the East Branch Twelve Mile Creek. Goal is to create an additional 30,000 acre-feet of storage.
- Cooperate and assist the Bois de Sioux Watershed District resolve the Stevens/Traverse county line dispute.
- Participate in project team in the Stevens County portion of the Bois de Sioux.
- Work countywide in each watershed to implement best management practices to reduce flooding, erosion and sedimentation.
- Work countywide in each watershed to promote the Wetland Reserve Program (WRP) and restore 2,000 acres per year.
- Increase the number of cropland acres into CCRP by 1% per year along the County Ditch Systems. Enroll landowners in the CCRP in which the landowner would receive a CRP payment for the minimum buffer required and the additional buffer required for the CRP.
- Continue to administer and enforce the Wetland Conservation Act and submit an annual report to BWSR.
- Restore high priority wetlands identified in TMDL Implementation Plans and preserve existing wetlands to improve water quality, flood retention and fish and wildlife habitat.
- Eligible wetlands in Stevens County may be considered high priority. Landowner enrollment in a Wetland Preservation Area (WPA) is voluntary and as an incentive the wetland is exempt from property tax in accordance with MN Statutes, Sect. 272.02, Subd. 11, clause (iii). If the County chooses to accept applications, all local taxing authorities will be reimbursed by the Minnesota Department of Revenue for the actual lost tax revenue, according to MN Statutes, Sect. 275.295.
- Apply for record modernization grants as they become available. Gather data for each drainage system and create a GIS database (include the following: name, size, outlets, date established, system type, repair history, flow data, demonstration capacity, monitoring data available, digitized benefit area, etc.). Regularly update the database as needed. Assess the database to identify highly erodible areas, flooding problem areas, storage potential, etc.
- Investigate developing a GIS layer for public drainage systems showing watershed boundaries, open ditches, tile lines, etc.

- Educate landowners/operators of the importance of keeping buffer strips in place to protect the drainage ditch systems and concerns about farming right next to the ditch system in Stevens County.

Priority Concern: Land use/development issues – develop a comprehensive plan including updating the County Zoning Ordinance

Goal: Prepare and adopt a countywide comprehensive plan to emphasize the importance of proper planning and ensure decisions are best for the citizens of Stevens County as well as the environment.

Objective: Coordinate with the County Board to seek a process for developing a comprehensive plan that includes updating the County Zoning Ordinance and Shoreland Standards.

Actions:

- Seek grant funding sources to assist the County in promotion and development of a County comprehensive plan.
- Persuade the County Board to appoint a task force to undertake a strategy in developing a comprehensive plan. The task force should include representatives from County cities, townships, state and local resource agencies, organizations and private citizens.
- Develop a process and engage people in the County to participate throughout the planning process.
    - Establish a shared understanding of the most important issues about economics, environmental and social implications.
    - Identify future needs and desires, and develop the vision, goals, policies and progress indicators that reflect them.
    - Develop alternative strategies for addressing the County's vision, goals and policies.
    - Understand relationships between possible plan strategies, accounting for their long-term costs and benefits, and choosing those that best fit a community.
- Select plan monitoring indicators, and complete and adopt the plan.
- Implement the plan, tracking the progress and changing the plan in future years as needed.

Objective: Reduce erosion in shoreland areas

Actions:

- Continue to administer and enforce the County Shoreland Ordinance and submit an annual report to the DNR.
- Promote well designed shoreline protection practices along the shorelines of developed lakes in the county.
- Alert property owners about the consequences of vegetation removal in shoreland areas.
- Work with agricultural producers to buffer cropland within the shore impact zone.

- Meet with property owners who are planning shoreland projects to ensure sound stormwater construction practices at the point of permit application.

Swift County LWMP 2003-2012 amended 2008

Priority Concern: Reducing Priority Pollutants

Goal: To restore, protect, and maintain the water quality, biodiversity and natural beauty of Swift County's water resources

Objective: Work with the MPCA to get the following waters off the Clean Water Act's TMDL 303d list of impaired waters

Action:

- Work with the MPCA to develop an action plan for each water feature identified in the 303d listing. Assist with various implementation steps as needed

Objective: Ensure phosphorus and nitrogen concentrations are low enough to fully support aquatic life and aesthetic/recreational use

Actions:

- Establish a strategy to promote the use of phosphorus free fertilizers on lawns. Encourage municipalities to adopt an ordinance that limits or prevents the use of phosphorus-based fertilizers
- Provide nutrient management planning financial incentives to ten 40-acre parcels (different owners) in the Lower Shakopee Creek Sub-Watershed. Continue elsewhere if successful
- Establish five sites per year to experiment or demonstrate alternatives to open tile intakes (i.e. pattern tile design). Focus sites in the Lower Shakopee Creek Sub-Watershed.

Objective: Properly treat both human and animal waste

Actions:

- Implement the following strategy to address feedlot compliance:
- Develop a GIS layer of Level II feedlots registered under current MPCA registration guidelines
- Develop an informational packet to mail to registered feedlot operators to assist them with contacts for technical questions (compliance, design, manure management) and financial incentives
- Identify all noncompliant feedlot operators by 2008
- Assist three noncompliant feedlots with financial and technical assistance each year through EQIP, FWQ State Cost-Share or SRF Loan Funding
- Inspect ten percent of registered feedlots each year
- Assist feedlot operators with completing proper MPCA permits and Manure Management Plans on 100% of feedlots with 1000+ animal units

- Address two sites with livestock exclusions practices (fencing, alternative water source, rock crossing, and rotational grazing) in the East Branch Chippewa River Sub-Watershed
- Work with other resource partners to complete a rotational pasture grazing tour in the East Chippewa River Sub-Watershed
- Seek grants and other funding sources to develop feasibility studies for upgrading unsewered communities. Cost share feasibility studies for DeGraff and Clontarf
- Provide funding to the Chippewa River Watershed Project to develop a marketing plan for ISTS in the East Branch and Lower Shakopee Creek Sub-Watershed
- Continue to support the upgrading of ISTS with the use of SRF low interest loans (examine a 10-year payback instead of the current 5-year). Reimburse up to $250 in high priority areas for system design after the system has been installed and inspected (i.e. wellhead protection areas, the flood plain, sensitive groundwater areas, etc.). Target eight systems annually.

Objective: Address erosion and sediment concerns by ensuring that turbidity and total suspended solids levels are low enough to fully support aquatic life and aesthetic/recreational use

Actions:

- Target 5,000 feed of bank stabilization. Promote practices to reduce stream-bank and ditch-channel erosion through developing a strategy identifying priority sites for alternative practices such as willow plating or stream barbs in critical areas
- Maintain residue levels and seek a ten percent increase in fields meeting crop residue targets countywide based on tillage transect surveys using the 5-year average (1997-2001 average: 72% of corn/soybean fields met residue target). Focus efforts in the Lower Shakopee Creek, East Branch and Lower Main Stem Sub-Watersheds.
- Complete tillage transect survey annually to show county residue results
- Establish 20,000 feet of field windbreaks or grass strips
- Construct 50 sediment control basins
- Establish 35 acres of waterways
- Assist the Chippewa River Watershed Project in seeking grant funds for a technician to promote BMPs (primarily to address sediment) for the Lower Main Stem Sub-Watershed
- Seed 500 acres of the most highly erodible cropland to appropriate vegetative cover through existing programs (i.e. CRP, RIM). Focus efforts in the East Branch Sub-Watershed (located in the Chippewa River Watershed) and the northern part of the Pomme de Terre Watershed
- Seek 3,000 new acres of riparian filers/buffers along ditches and streams. Enforce a one-rod buffer as it applies to drainage policy (encourage 100-foot buffers through incentives)
- Accelerate filter strip implementation along country drainage systems with existing programs using a direct letter campaign, endorsement and information from the County Parks, Drainage and Wetlands Office and the County Board
- Accelerate continuous CRP and RIM riparian filter/buffer enrollment in the East Chippewa River Sub-Watershed with Chippewa River Watershed Project 319 incentive funds and in the Lower Shakopee Creek Sub-Watershed with local water plan incentive funds

- Seek riparian filter/buffer protection in the Pomme de Terre Watershed

Priority Concern: Surface Water Management/Drainage

Goal: Maintain the drainage system while sustaining agricultural productivity as well as recognizing that drainage is part of the larger tributary system

Objective: Apply watershed-based principles in properly managing drainage systems

Actions:

- Recognize drainage systems as tributaries (part of the larger surface water system). Commit to working with resource partners both up-and-down stream from Swift County
- Work with the Chippewa and Pomme de Terre Watersheds and the Upper Minnesota River Watershed District to implement BMPs
- Gather data for each drainage system and create a GIS database (include the following: name, size, outlets, date established, system type, repair history, flow data, demonstration capacity, monitoring data available, etc.). Regularly update the database as needed. Assess the database to assist with water planning activities (identify highly erodible areas, flooding problem areas, storage potential, etc.)
- Continue to develop a GIS later for public drainage systems showing watershed boundaries, open ditches and tile lines (one County ditch has been digitized)
- Work with various resource partners to seek water retention/storage opportunities with willing landowners on a watershed, sub-watershed, or ditch-shed basis. Drainage systems such as JD 5, 8, and 19 may be areas to initially inventory
- Seek a grant to create a water management plan (for drainage systems) identifying financial incentives for landowners to improve drainage management throughout the County. The plan would, among other items, assess water storage opportunities, erosion and sedimentation problems, drainage system enhancements, and win-win opportunities for improving the County's overall drainage system with an emphasis on reducing the County flooding potential
- Conduct an inventory of drained wetland basins to be used in conjunction with flood control and watershed restoration efforts (determine if the U.S. Fish and Wildlife Service's inventory will be completed and when approximately)
- Target the Lake Oliver Sub-Watershed for wetland restoration activities
- Be an active participant as the DNR develops a management plan for Marsh Lake
- Complete an inventory of land locked water basins that could provide additional recreation and wildlife opportunities. Seek funds to pursue projects, with an emphasis on finding money or incentives for willing landowners to cooperate
- The County may accept and process eligible applications for wetland preservation on a countywide basis. A wetland so enrolled is exempt from property tax, however, the State of Minnesota has a mandated fund to reimburse the tax loss to the County

Priority Concern: Groundwater Protection

Goal: Protect and improve the quality of groundwater in the County

Objective: Assist with the wellhead protection and planning

Actions:

- Participate on wellhead/source water protection teams when invited by the local public water suppliers. Participate in both the development and implementation of Wellhead Protection Plans
- Create a County Zoning Map showing Wellhead Protection Areas (excluding the exact wellhead location.) Periodically update the map as needed
- Establish the identified Wellhead Protection Areas a priority areas for cost-share and other land use incentive programs (i.e. sealing abandoned wells, upgrading septic, installing buffers, etc.)
- Establish the identified Wellhead Protection Areas as priority areas for cost-share and other land use incentive programs (i.e., sealing abandoned wells, upgrading septic systems, installing buffers, etc.)
- Continue the cost-share program to properly seal abandoned wells (pay up to 50% with a $250 maximum)

Objective: Support good land use decisions regarding groundwater protection

Actions:

- Examine ways to incorporate groundwater into the land use decision-making process. Invite state agencies to assist the County with learning how to interpret data and identify sensitive areas needing additional management and protection. Use the Upper Minnesota River Basin Regional Hydrogeologic Assessment and other groundwater information as information sources.
- Work with the Minnesota Geological Survey and the MDH on developing criteria to identify sensitive groundwater recharge areas. In addition, work with these agencies on developing land use incentives and possibly a protection strategy that can be incorporated in the County Zoning and Subdivision Ordinance
- Review County Drought Contingency Plans and decide if one should be developed for Swift County
- Do countywide well testing to establish baseline groundwater quality. Combine results with previous water testing data
- Develop a strategy to promote water conservation by using existing materials and resources (i.e. Minnesota Rural Water Association's handouts) Develop a strategy for both the urban (i.e. households) and rural (i.e. irrigation) levels. The rural strategy may examine rotational irrigation in key areas or during drought conditions

Priority Concern: Education and Outreach

Goal: Raise public awareness on a number of key water-planning issues

Objective: Raise public awareness on a number of key water-planning issues

Actions:

- Focus education and outreach efforts on two or three water planning issues each year. Integrate those efforts with watershed's educational goals. Identify the priority issues in November/December each year. Annual topics chosen will be promoted through the use of the following sources: Newspaper articles, radio ads, posters, displays, field days, speakers, classes, etc.
- Create a brochure to promote how to handle chemical, manure and fuel spills, listing contacts and phone numbers
- Raise public awareness on storm water pollution and ways to prevent and/or minimize it. In cooperation with cities, address common stormwater issues and assess the need to be more proactive in promoting stormwater management through the public education and improved land use ordinances
- Examine writing a Recreation and Wildlife Plan to systematically address current and future needs (i.e. tourism, hunting areas, trials, parks, equipment, etc.)

Objective: Continue to support the watershed monitoring and information gathering efforts in order to better understand, assess, and identify gaps related to the condition of the County's water resources

Actions:

- Continue to support watershed planning and implementation activities by providing financial and technical assistance. Annually review monitoring data and implementation accomplishments to coordinate future implementation steps
- Annually review MPCA's "State of the Minnesota River" report documenting annual monitoring results and long-term trends. Create a response to the report if necessary
- Use the County's Geographic Information System (GIS) to track water plan accomplishments and maintain current and part inventories