Lac qui Parle River Watershed: Water Plans

The Lac qui Parle River Watershed encompasses Lac qui Parle, Lincoln and Yellow Medicine 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 from 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:
Lac qui Parle County LWMP 2003-2012
Lincoln County LWMP 2004-2014 amended 2009
Yellow Medicine County LWMP 2005-2015 amended 2010

Water Plan Evaluation

Concern	Lac qui Parle	Lincoln	Yellow Medicine
Drainage Management			
Education			
Erosion Control			
Groundwater			
Surface Water			
TMDL - Impaired Water			
Wellhead Protection			
Conservation BMPs			
Feedlot Compliance			
Monitoring			
Nonpoint Source Pollution			
Point Source Pollution			
Sediment			
Shoreland Management			
SSTS/ISTS			
Technical/Financial Assistance			
Watershed-based Approach			
Wetlands			
Coordination/Partnership			
Development Concerns			
Lake Management Plan			
Nutrient Management			
Priority Pollutants			
Seek Funding			
Stormwater Management			
Water Retention			

Concerns addressed in County Water Plan associated with nutrient issues

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

Lac qui Parle County LWMP 2003-2012

Priority Concern: Water Resource Education

Goal: Collect, analyze and provide important water planning information gathering efforts in order to better understand and assess water planning issues

Objective: Continue to support the various monitoring and information gathering efforts in order to better understand and assess water planning issues

Actions:

- Proactively work with various state agencies, watersheds and citizens to identify the condition of the County's water resources, find gaps in the County's knowledge and understanding of its water resources, find ways to fill those gaps and learn how to interpret and use the information in the decision-making process.
- Schedule training and workshops for proficiency in using data and for data creation needs.
- Continue Clean Water Partnership water quality monitoring and seek ways to effectively publicize the results, interpret and use them in planning efforts.
- Expand the Citizen Monitoring program in both numbers of monitors and in parameters tested.
- Continue and expand the volunteer Rain Gauge Monitor program and develop links from local websites to the data in the Office of Climatology.
- Monitor water levels in 11 wells in areas in the County near irrigation systems for the DNR. Add a link from the SWCD website to the data.
- Develop monitoring plans for waters that are not currently being tested so there is a more comprehensive assessment of waters in the County (for example, Emily Creek).
- Seek funding to hire technicians to work in local offices to promote existing programs on a one-to-one basis with the public.
- Use sub-watershed monitoring efforts to determine where financial and educational assistance is needed most each year. If possible, target these areas for a specific period of time or until the need is reduced to a satisfactory level.

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

Actions:

- Review the function of the Resource Commission and revitalize its membership and potential.
- Use the Resource Commission meetings for agencies to update each other on programs, issues and activities.
- Hold monthly meeting with SWCD, Environmental Office, Watershed and Clean Water Partnership.

- Annually develop a public awareness campaign (or implementation strategy) on the County's priority water planning issues using the County Fair, newsletters, news articles, displays, radio, posters, bulletins in city mailings, electronic info (websites, email alerts, etc.) intersection billboards (like used for VFW steak fry), workshops, tours, school events, and seminars.
- Create a list of places to display maps or handouts (i.e. libraries, banks, etc.) and randomly display information on water planning issues. Review and update the list annually.
- Partner to provide environmental education to students using events such as the Southwest Minnesota Environmental Fair, tours, presentations, field days and contests.

Priority Concern: Water Management

Goal: Protect and improve water quality and quantity through water management

Objective: Identify and properly address flooding and drainage issues and opportunities

Actions:

- Work with various agencies including the East Dakota Water Development District and other counties within the watershed to assess, prioritize and pursue funding to increase water retention in upstream reaches of the watershed such as retention dams, controlled drainage projects (see Action #5), and wetland restoration. Measured by: Installation of practices
- Enhance the existing drainage system GIS layer and continue to build a data base to assist with local water management decision-making and provide training and education to effectively use the data.
- Identify and promote best management practices for water entering ditches and other water bodies such as upland treatment practices, tile management, intakes, side inlets and other practices that will reduce sedimentation and pollution. Make that information available to contractors and producers in brochures, electronic means, radio, demonstrations and possible tours.
- Pursue funding and work with 1-2 demonstration sites featuring controlled drainage and blind intakes and provide cost-share for others interested in removing open intakes.
- Dedicate a Resource Commission meeting to review portions of the County's Disaster Plan on water-related items such as flooding and drought disaster.
- Manage necessary clearing of debris from water channels.

Objective: Identify priority wetlands for protection, enhancement and restoration activities

Actions:

- Provide up-to-date information on the value of wetlands, the need for wetland mitigation, available programs and funding for voluntary restoration and enhancement.
- Pursue funding for landowners who want to voluntarily restore or enhance wetlands. Work with 3-4 landowners each year.

- Seek out 1-2 landowners to work with to create Wetland Banking Credits for trade within the watershed.

Priority Concern: Groundwater Protection

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

Objective: Help all landowners act to protect the County's groundwater quality

Actions:

- Work to provide funding to help landowners seal abandoned wells. Seal at least 30 wells each year.
- Promote and conduct a collection of chemical containers annually. Investigate a means of storage containers between collections.
- Promote and conduct two pesticide collections.
- Provide well testing information and opportunities to private landowners to have the water quality of their wells tested. Pursue funding to provide incentives.
- Support the development of water quality data bases for private wells that are compatible with the County Well Index and can be used in a geographic information system (GIS) format.
- Work with owners of older wells in well pits to upgrade their water supply system. Target the floodplain areas first. (One estimate is that about 30% of older wells located in well pits can fill with surface water in the spring or during a flood event.)

Objective: Assist the wellhead protection

Actions:

- Assist the Minnesota Department of Health wellhead/source water protection teams for during the development and implementation of Wellhead Protection Plans when invited. Advise and assist with technical land use information and planning assistance to implement the Plans. As of February, 2008, there is one approved Drinking Water Supply Management Area, delineated for the City of
- Bellingham. The following website lists all public water suppliers and a copy of the Source Water
- Assessment for the public water suppliers in Lac qui Parle County: http://www.health.state.mn.us
- Provide education to create awareness that every well has a wellhead area that needs to be protected

Objective: Make good land use decisions regarding groundwater protection

Actions:

- Examine ways to incorporate groundwater information into the land use decision-making process.

- Invite state agencies to assist the County with learning how to interpret data such as the Upper Minnesota River Basin Regional Hydrogeologic Assessment and other key groundwater information, identify sensitive areas, and identify groundwater recharge areas.
- Develop an ordinance requiring a zoning permit to demolish vacant building sites to ensure abandoned wells are sealed, underground storage tanks are removed and hazardous waste is disposed of properly before demolition occurs.
- Work with municipalities to add their water testing data to their websites. Explore ways to make water testing data for municipalities who do not have websites more readily available to the public.
- Use public entity websites to establish links to sources of data such as the SWCD website link to
- DNR observation well data.

Priority Concern: Reducing priority pollutants

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

Objective: In cooperation with the MPCA, participate in the development of the TMDLs and subsequent implementation efforts that will help get the waters off the TMDL 303d list of impaired waters

Actions:

- Assist partners in prioritizing water bodies/minor watersheds and work with MPCA on which TMDLs will be addressed next locally. Educate citizens on impaired waters.
- Participate with partners in the development of the TMDL implementation plan(s) for the Lac qui Parle –
- Yellow Bank Watershed; help guide and direct BMP selection and placement; demonstrate and promote
- BMPs and educate citizens on BMPs. (See actions in other issues) Currently work is being done on the Lac qui Parle River Low Dissolved Oxygen TMDL from Dawson to Ten Mile Creek. In the near future, TMDLs worked on include the Lac qui Parle River Watershed Fecal Coliform TMDL and the Lac qui Parle River Watershed Turbidity TMDL.
- With partners, reference CWP Implementation Plan and current work plans and seek additional Clean Water Legacy implementation funds.

Objective: Reduce the impact of activities on surface water quality

Actions:

- Update the County's feedlot inventory to determine the status of feedlots and to better determine where corrective assistance needed.
- Work with existing 1-2 producers each year to bring their feedlots into compliance.

- Assist producers to develop, update and follow their manure management plans. Encourage producers (who currently are not required by law to have plans) to develop plans which will help them better manage their manure resources.
- Assist producers to manage manure application by working with them and with custom applicators to access the Ag BMP Loan program to upgrade their equipment.
- Develop feasibility studies for unsewered communities, including Rosen, Lac qui Parle Village (both unincorporated) and Louisburg (incorporated).
- Investigate requiring an inspection of SSTS location and condition whenever property transfers occur.
- Network with SSTS contractors in the County to share updates on requirements and financial assistance programs available.
- Use CWP funding and Ag BMP Loan funding to help upgrade 20 SSTS each year.
- Enhance the SSTS maintenance program by contacting all individuals who upgrade their SSTS on an established schedule with a reminder and information on their responsibility to properly maintain their systems.
- Provide current information on household waste management to reduce the amount of waste entering the landfill.
- Hold countywide hazardous waste collections 2 times each year.
- Review current and ongoing water quality monitoring and promote BMPs appropriate for specific conditions where surface water may be a concern for pollution by agricultural chemical use.

Priority Concern: Erosion

Goal: To protect the County's long-term soil resources

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

Actions:

- Set up tours in County to show land users current applied practices. Promote and share with all agencies
- Target absentee landowners to promote erosion control practices and enhance incentives by one newsletter/year to producers and owners and by a direct one-to-one contact with 10 individuals/year
- Work with contractors and others to educate the public on ditch and streambank management – buffers – side inlets – stabilization – and cause and effect of erosion.
- Repair and/or install side inlets where needed – 50 each year.
- Install 100 acres of buffers each year
- Promote benefits of appropriate setbacks on ditches.

- Work with land users to install engineered practices to control erosion in concentrated flow areas. 10 sediment control basins each year 1 acre waterway each year
- Conduct a tillage transect survey every other year
- Promote the EQIP tillage incentive and fund five applications each year.
- Work with operators to increase conservation tillage by 5% each year
- Work with land owners to install 1,300 feet of field windbreaks or grass strips each year to reduce wind erosion.
- Protect 150 acres of highly erodible cropland each year by getting them seeded to grasses. Work with operators to plan grazing systems on 200 acres of pastureland each year for 1,000 acres net.
- Work to get funding to stabilize stream and river banks on two projects a year promoting biological practices such as willow plantings, stream barbs, etc.
- Promote and install a demonstration rain garden to address soil loss and control water quality due to runoff from impervious surfaces.
- Install ditch checks (sediment control basins) and other erosion control practices in ditches as needed during road construction and repairs.
- Work with municipalities, contractors and zoning to reduce sedimentation on construction sites from reaching surface waters through stormwater drains. Use brochures, cable access channels, flyers through utility bills and ads in the yearly construction/remodeling special newspaper issues to inform the public about how to reduce sedimentation and why it is important.

Lincoln County LWMP 2004-2014 amended 2009

Priority Concern: Groundwater protection for the Verdi Well Field

Goal: Protect the public water supply from potential contaminant sources due to land use activities; and establish and maintain a Wellhead Protection Plan (WHP) continuing public education and information program

Objective: Encourage property owners to adopt tillage, chemical and nutrient BMPs for cropland within the Drinking Water Supply Management Area (DWSMA).

Actions:

- Continue to work with current feedlot owners/operators in the DWSMA area and contact any potential new operators to discuss feedlot operations. Develop an understanding of local drinking water issues and the benefits of implementing the wellhead protection plan.
- Encourage the development and adoption of tillage, pesticide and nutrient management plans on cropland within the DWSMA to reduce potential for contaminants entering the aquifer. LPRW will cost share with other local agencies for nutrient soil testing as a component of nutrient management plans. Through this process the application of commercial fertilizer will be applied at recommended agronomic rates and nitrogen management plans are implemented from cropland in the DWSMA.
- As a pilot project in the DWSMA, encourage a landowner to implement a drainage water management project (NRCS) using the new approach to controlled drainage to reduce the impacts of nitrate-nitrogen on both groundwater and surface waters and to reduce flooding potential.

Objective: Continue to upgrade septic systems in the DWSMA and encourage closing of abandoned wells.

Actions:

- Conduct inspections of septic systems in the DWSMA and implement full compliance with state and county SSTS requirements within the DWSMA to prevent the contamination of the water supply in the DWSMA by non-complying septic systems. Continue to upgrade 5 non-complying systems per year in the DWSMA.
- Provide cost-share assistance to landowners in the Verdi DWSMA and the entire Big Sioux Watershed to properly seal their abandoned wells. The Verdi DWSMA is a high priority for well sealing and sealing as funds allow.

Objective: Inventory and prioritize areas within the DWSMA for adoption of set-aside and buffer easement programs.

Actions:

- Continue to work with property owners in the DWSMA to encourage enrollment in easement and cost-share programs such as CRP/CCRP, RIM, WRP, WHIP and adoption of buffer strips. Increase the number of acres of easement programs by 10 acres per year. LPRW will offer a $15/acre incentive for land enrolled in the CRP in those areas identified as “high priority” in the Verdi Wellhead Protection Area (WHP).
- Increase conservation tillage practices in the DWSMA, reducing sedimentation in the surface waters recharging the ground water. Promote Ag BMP Loans for upgrading conservation tillage equipment to reduce erosion and runoff by targeting one landowner per year or as loan funds permit.

Objective: Protect the groundwater and the drinking water sources for the Verdi Well Field.

Actions:

- Pursue grant funds through the Clean Water, Land and Legacy Amendment for protection of the Verdi Well Field groundwater and drinking water sources.
- Lincoln-Pipestone Rural Water will be in contact with DNR annually (February) to review water appropriations. The LPRW will be in continuous contact with the DNR to find other water sources and any other concerns they have throughout the year.
- Educate and provide information to land owners/operators on the importance of protecting groundwater from pesticides, nutrients, etc. by providing information on:
    - Proper usage and rates of pesticides/herbicides through the Minnesota Department of Ag (MDA) product use requirements;
    - Sealing abandoned wells and septic system upgrades;
    - Feedlot pollution reduction, and the importance of proper manure management;
    - CRP/CCRP, RIM, WRP, WHIP and adoption of buffer strips; and
    - Conservation tillage, pesticide and nutrient management plans.
- This will be done through the SWCD fair booth and web site, newsletters/releases, and individual contacts.

Priority Concern: Surface Water Quality Deterioration focusing on MPCAs list of TMDLs and Impaired waters. TMDL-South Branch, Yellow Medicine River for Fecal Coliform. Impaired waters include various river reaches listed on Pages 2-3 and the following Lakes: Dead Coon, Benton, Perch, Shaokatan and Hendricks. TMDLs underway: Lac qui Parle River-Yellow Bank-Bacteria,

Turbidity, and Low Dissolved Oxygen; Lake Shaotakan-Excess Nutrients; Redwood River-Fecal Coliform and Turbidity; and Minnesota River-Turbidity.

Goal: To restore, protect and improve the deterioration of surface water quality entering Lincoln County's lakes, rivers, and streams

Objective: Protect surface water quality from contamination caused by point and non-point source pollution and properly treat both human and animal waste.

Actions:

- Bring into compliance approximately 30-50 septic systems/year in the Yellow Medicine River Watershed, Redwood River Watershed, and Lac qui Parle Watershed.
- Work with 4-5 producers/year with high priority feedlots. Priority based on size of the operation and their proximity to water. Work with engineers to survey problem feedlots and supply the producer with 2-3 options to fix pollution problems (cost-estimate included). Work with the SWCD/NRCS on possible cost-share availability.
- Reduce feedlot pollution by working with 3-feedlot producers on developing nutrient management plans on 750 acres. Priority will be given to feedlot producers with 300+ animal units and producers who spread manure in sensitive areas.

Objective: Protect and improve existing surface water quality by addressing nutrient loading, bacteria issues, fecal coliform, and turbidity.

Actions:

- Assist in pursuing grants through the Clean Water, Land and Legacy and Clean Water Partnerships for watershed based activities for the following watersheds: Yellow Medicine, Lac qui Parle-Yellow Bank, Redwood and Big Sioux. This is for current projects, TMDLs underway and for new TMDLs/Impaired waters projects as they are updated through MPCA in 2010 and beyond. Address pollutants/stressors in each of the affected water bodies. This would be done through the technician work groups for the Yellow Medicine and Lac qui Parle, the RCRCA joint powers and through neighboring SWCDs.

Objective: Educate property owners, land owners/operators on the importance of protecting our surface waters from deterioration.

Actions:

- Educate and provide BMP information to land owners/operators on water impairments and the importance of reducing nutrients and bacteria in surface water quality through newsletters, releases, SWCD web site, fair booth, and individual contacts for:
    - Feedlot pollution reduction, and the importance of proper manure management;
    - Upgraded SSTSs; and

    - Implementation of BMPs in order to reduce the nutrients and bacteria in surface water.
- Educate land owners/operators in the Lake Shaokatan Watershed and the South Branch of the Yellow Medicine River on the TMDL Study and implementation programs through newsletters and one on one contact.

Priority Concern: Erosion and Sediment Control on agricultural land primarily gully erosion and concentrated flow with several priority areas throughout Lincoln County including: TMDL-South Branch, Yellow Medicine River for Fecal Coliform. Impaired waters including various river reaches listed on Pages 2-3, and lakes including: Dead Coon, Benton, Perch, Shaokatan and Hendricks. TMDL/s underway: Lac qui Parle River-Yellow Bank-Bacteria, Turbidity and Low Dissolved Oxygen; Lake Shaotakan-Excess Nutrients; Redwood River-Fecal Coliform and Turbidity and Minnesota River-Turbidity.

Goal: To protect and preserve Lincoln County's long-term valuable soil and water resources

Objective: Protect and improve existing surface and ground water quality by addressing and reducing soil erosion, sedimentation and potential attached pollutants.

Actions:

- Reduce water erosion to 5-ton or less soil loss per acre on cropland. Implement BMPs such as but not limited to (approximate footage/year):
    - Terraces-2,000 feet,
    - Water & Sediment Control Basin's (WSCB'S)-70 each,
    - Waterways-6 acres,
    - Conservation Tillage, and,
    - Increase acres of buffers, filter strips and Critical Area Plantings by 20 new sites (125 acres) per year through CCRP. The entire county is a concern with priority given to areas deemed necessary by the Technical Groups in each of the watersheds.
- Reduce sediment loads to waters of the state throughout Lincoln County by replacing open tile intakes with alternative tile intakes. Depending on available funding approximately 25-50+ alternative tile intakes could be replaced per year.
- Reduce wind erosion to 5-ton or less soil loss per acre on cropland selling 35,000 trees per year by implementing the following (approximately footage – per year): 1 mile-Field Windbreaks/Living Snow Fences, 10 acres-Farmstead Shelterbelts, and 20 acres-Wildlife Tree Plantings, depending on programs available.
- Make the following contacts: 10-contacts in areas where MN-DOT and the County have identified for the Living Snow Fence Program/Field Windbreaks; 30-contacts to promote the

tree program. Follow-up contacts on all tree projects and keep townships informed on the available tree programs.

- Provide a Conserving Use Acres Contract to six landowners where the Water Management Task Force pays $599.00 for planting 10 acres or more of small grain for earthwork construction from August 10 to September 30. Providing funding is available.
- Provide cost-share to 5-15 landowners per year for sealing their abandoned well(s). Additional funding could provide for more wells to be sealed.

Objective: Reduce the volume of sedimentation reaching County lakes, streams, rivers and wetlands.

Actions:

- Increase conservation tillage on 1,500 acres with high residue and encourage landowners to plant 500 high residue acres with a No-Till Drill. Funding for conservation tillage equipment is available through the Ag BMP Loan Program, but is dependent on available funds. No-till drills are available at the Lincoln SWCD.
- Assist in pursuing grants/funding for implementation of conservation practices for watershed based activities through the Clean Water, Land and Legacy, Clean Water Partnership, Ag BMP, Watersheds, and BWSR. Funding based on current projects, TMDLs underway and for new TMDLs/Impaired waters projects as they are updated through MPCA in 2010 and beyond in the following watersheds: Yellow Medicine, Lac qui Parle, Redwood River and the Big Sioux. Address pollutants/stressors in each of the affected water bodies and areas deemed as high priority through the watershed project areas. This would be done through the technician work groups for the Yellow Medicine and Lac qui Parle, the RCRCA joint powers and through neighboring SWCDs.

Objective: Implement Best Management Practices in the Yellow Medicine Watershed project area. Future projects will be implemented based on future funding.

Actions:

- Implement BMPs such as sediment basins, waterways, alternative intakes, feedlots, etc. in the South Branch of the Yellow Medicine River located in Lincoln and Lyon Counties to help reduce Phosphorus loading. Funding is strictly through the Yellow Medicine River Watershed District 2007-South Branch TMDL Implementation Plan. Funding shows the remaining dollars currently available.
- Through the Lower Minnesota River TMDL; the 2006 Yellow Medicine River Dissolved Oxygen Project was approved. This project will implement WSCBs and encourage enrollment in the CRP/CCRP. CRP incentive payments are 35% of the eligible CRP/CCRP payment on 20 acres of 120 foot buffer strips which will provide additional water quality benefits. The project is through the Lincoln, Lyon and Yellow Medicine SWCDs with the Lyon SWCD administering the project. Amount of funding is for the entire Yellow Medicine River Watershed (3-counties). Dollars

include: WSCBs-$21,000; buffer incentives-$10,150. Grant period: February 1, 2007 thru June 30, 2011.

- Through the Lower Minnesota River TMDL, implementation of the 2009 Clean Water Legacy Grant funded for the Yellow Medicine Watershed will begin. This grant is through the Lincoln, Lyon and Yellow Medicine SWCDs with the Lyon SWCD administering the grant. Amount of funding is for the entire watershed (3-counties) which includes: $88,000-Structure practices; $12,000-Alternative Intakes.
- Implement alternative intakes and other projects deemed necessary through the Shaokatan Sportsmen Club dollars in the Lake Shaokatan Watershed. The amount of funding is dependent on the Sportsmen Club. Funding in 2009 consists of $30,000.
- Participate in the Yellow Medicine River Watershed technical team meetings to develop monitoring and implementation plans the team deems a priority in the watershed based on the TMDLs/impaired waters.
- In the entire Yellow Medicine Watershed accelerate the implementation of BMPs such as sediment basins, waterways, filter strip incentive program, alternative intakes, etc. Funding is dependent on future grants specific for current and future TMDL/impaired water projects.

Objective: Implement Best Management Practices in the Redwood River Watershed project area. Future projects will be implemented based on future funding.

Actions:

- Implement WSCBs and encourage enrollment of acres in the CRP/CCRP to reduce external loading from surface water runoff. Funding is for the Redwood/Cottonwood watersheds. Implementation of the CWL portion is administered through the Redwood SWCD and the 319 portion through RCRCA. Funding includes the current 2007 and 2008 CWL Grants.
- Participate in the RCRCA joint powers meetings and technical team meetings through the SWCDs for the Redwood River Watershed to develop monitoring and implementation plans the team deems a priority in the watershed based on the TMDLs/impaired waters.
- In the Redwood River Watershed accelerate the implementation of BMPs such as sediment basins, waterways, filter strips, etc. Funding is dependent on future grants specific current and future TMDL/impaired water projects in the watershed.
- Monitor sites to evaluate progress on Lake Benton, Coon Creek and its effect on the Redwood River. Monitoring depends on future grants.

Objective: Implement Best Management Practices in the Lac qui Parle Watershed project area. Future projects will be implemented based on future funding.

Actions:

- In the Lac qui Parle River implement BMPs from the headwaters, Lake
- Hendricks to Lazarus Creek through a 2006 TMDL grant addressing turbidity.

- Implementation includes: 20 WSCBs for $60,000; 50 acres of filter/buffer strips at $50/acre per year (15-years) for $37,500 and septic system upgrades through the SSTS low interest loan program for $100,000. Funding is for three counties with the grant period extending through 2011. Funding for this TMDL project is through the Lac qui Parle River Watershed-CWP.
- Participate in the Lac qui Parle River Watershed technical team meetings to develop monitoring and implementation plans the team deems a priority in the watershed based on the TMDLs/impaired waters.
- In the Lac qui Parle River Watershed, accelerate the implementation of BMPs such as sediment basins, waterways, filter strips, etc. Funding is dependent on future grants specific current and future TMDL/or impaired water projects in the watershed.
- In the Lac qui Parle River headwaters, Lake Hendricks 41-0110-00 to Lazarus Creek/Canby Creek #07020003-505, with the Aquatic Recreation being the impaired use and Fecal Coliform being the pollutant. Start/completion dates of 2012/2016 (sooner if funds permit). Accelerate the implementation of WSCBs, waterways, filter strips, etc. in the impaired area. Funding is dependent on future grants specific for TMDLs/impaired waters in the watershed. Impairment of Aquatic Life with Turbidity being the pollutant has a start/completion date from MPCA of 2014/2018.

Objective: Educate landowners/operators about erosion and sediment control, the importance of installing conservation practices and encourage conservation programs that help protect wildlife and recreational benefits in Lincoln County.

Actions:

- Provide BMP information and cost-share assistance to land owners/operators to reduce sediment and nutrient loading of surface and ground water and to enhance wildlife and recreation opportunities. BMPs include:
    - WSCB's, terraces, waterways, conservation tillage, restored wetlands,
    - Feedlots, nutrient/pesticide management;
    - Replacement of open tile intakes with alternative tile intakes;
    - Enhance and protect remnant native prairies, and wildlife habitat management areas;
    - Buffer programs: CCRP, RIM/WRP, Working Lands Initiative, critical area plantings, filter strips; and
    - Field windbreaks, living snow fences, farmstead shelterbelts, wildlife tree plantings.
- This will be done through newsletters, news releases, individual contacts, SWCD website, workshops, and SWCD fair booth.

Priority Concern: Lake Management Improvement (water quality) and Recreational Opportunities targeting Lake Benton, Lake Shaokatan and Lake Hendricks.

Goal: Increase recreational opportunities by improving the water quality and quantity of Lincoln County's lakes

Objective: Reduce the blue-green algae in Lake Shaokatan to improve the economic and recreational activities in the lake.

Action:

- Strive to reduce the blue-green algae in Lake Shaokatan by implement BMPs in the watershed above the lake. Promote landowner awareness around the lake in the watershed on the importance of protecting the lake.

Priority Concern: Surface Water Runoff and Drainage addressing runoff volume and water quality through drainage management.

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

Objective: Apply watershed-based principles in properly managing drainage systems and wetlands and repair small dams in the county.

Actions:

- Reduce flooding potential by restoring wetlands by 50 acres over five years and increasing the number of filter strips through CCRP, etc.
- Seek funding for establishing a list of dams throughout the County and their status as far as needing repairs.
- Repair existing small dams used for flood control and water storage that are located in the county (repair one dam every three years-or as funds are available).
- Administer the Wetland Conservation Act (WCA). Administration will come from the Local Governmental Unit-Lincoln Soil and Water Conservation District. Technical panel consists of a representative from BWSR, NRCS, and SWCD.

Objective: Improve the Drainage Ditch systems in Lincoln County through proper management and implementation of buffers.

Actions:

- Enroll landowners in the CCRP in which the landowner would receive a CRP payment for the one-rod buffer required and the additional buffer required for CRP. Approximately 1,000 acres of cropland are enrolled in various conservation land programs. Increase the number of cropland acres into CCRP by 1% per year.
- In 2008, the County Commissioners serving as the Lincoln County Ditch Authority directed the Environmental Office to issue administrative orders directing property owners to restore 16 ½

foot permanent grass buffers along open ditches where they are required. Landowners have one-year to get them restored or the County Commissioners may order the work done.

Objective: Educate landowners/operators in Lincoln County on the Drainage programs/issues.

Actions:

- Educate landowners/operators of the importance of keeping buffers in place to protect drainage ditch systems and all waters of the state. Educate landowners/operators of the negative environmental impacts associated with farming right next to ditch systems in Lincoln County.
- Educate land users on the Wetland Conservation Act (WCA) regulations, USDA Swampbuster and Army Corp. of Engineers wetland regulations. Accomplish this through newsletters, the SWCD web site and one-on-one contacts.

Yellow Medicine County LWMP 2005-2015 amended 2010

Priority Concern: Groundwater Protection – protect drinking water resources by providing assistance to help manage vulnerable area from potential contamination sources

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

Objective: Support the needs of public water suppliers and wellhead protection planning.

Actions:

- Participate in the preparation and implementation of wellhead protection plans for public water suppliers.
- Consider wellhead protection areas when making land use decisions, such as the permitting of feedlot, land use and sewer systems.
- Contact cities and the rural water system with available assistance. Advise and assist public water suppliers with technical land use information and planning assistance when wellhead protection plans are developed. The City of Canby is currently working on their wellhead protection plan and in the near future Lincoln Pipestone Rural Water's Burr well field will be working on a wellhead protection plan.
- Identify and contact landowners who own and operate land in the delineated wellhead protection areas and/or source water protection areas and encourage them to use practices that will aid in the protection of groundwater.
- Work with the City of Canby, and any other cities to encourage landowners in the Drinking Water Supply Management Area to use appropriate land use practices to protect the public water supply from potential contamination.
- Continue to have Wellhead Protection Areas as priority areas for cost-share and other land use incentive programs (i.e. sealing abandoned wells, upgrading septic systems, feedlot management, nutrient management, CRP, RIM, etc.) The Local Work Group, which is used for setting priorities in Yellow Medicine County for the Federal Environmental Quality Incentive Program, identified vulnerable well areas in Canby, Echo and Wood Lake as a high priority when ranking applications for funding.
- Continue to cooperate with Lincoln Pipestone Rural Water on the expansion of the rural water system and advise them about County programs that will help manage potential contamination sources.

Objective: Encourage good land use decisions to protect groundwater resources from contamination sources.

Actions:

- Annually educate landowners, both rural and urban on the proper applications and disposal of agriculture and lawn chemical /fertilizers.
- Provide financial assistance as available to seal 20 abandoned wells per year.
- Annually develop and distribute educational materials for homeowners and realtors on the importance of disclosing and sealing wells.
- Work with 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 informational sources.
- Annually 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, rural 15residents and businesses regarding specific actions they can take to protect drinking water.
- Create a map of the water testing data received from the free water testing program.
- Encourage well owners to get private wells tested on a regular basis and provide an incentive to homeowners to have their wells tested.
- Educate homeowners on the proper disposal of household hazardous waste and promote the use of the Household Hazardous Waste Facility in Clarkfield and any mobile collections held in the County.
- Develop an education program to promote water conservation.

Objective: Expand groundwater monitoring.

Actions:

- Monitor five (5) groundwater observation wells designated by DNR.
- Comment on DNR water permits.
- Participate in the state rainfall monitoring program with 15 rural rainfall monitors and city monitors to record daily precipitation.

Priority Concern: Erosion and sediment control – soil erosion and sedimentation on agricultural lands

Goal: To protect and improve surface and groundwater quality by addressing and reducing soil erosion and sedimentation

Objective: Reduce erosion and sediment problems to sustainable levels by promoting the use of Best Management Practices (BMPs).

Actions:

- Promote Best Management Practices in the County. Concentration will be on the following designated high priority areas as identified through the Stakeholder and Local
- Work Group Process:
    - Yellow Medicine Watershed – specifically the monitoring sites #4 (1 mile west of Hanley Falls, the outlet of Cottonwood Lake) and #12 (Mud Creek) having a high nitrate problem.
        - Sandnes – Sections 9-11, 13-17, 19 and 36
        - Norman – Sections 13-14, 22-24, 26-28 and 33-36
        - Wergeland – Sections 16-21 and 18-33
    - Yellow Medicine River to Spring Creek as listed as impaired waters (turbidity). This is the area from Hanley Falls to the Minnesota River.
    - Lac qui Parle Watershed – specifically the following areas:
        - Norman – Sections 1, 2, 11, 12 and 14
        - Omro – Sections 1-16, 22-24, 26-28 and 34
        - Oshkosh – Sections 1-12, 14-23 and 28-33
        - Tyro – Section 4-9, 16-19 and 30
        - Wergeland – Section 4-7
    - Canby Creek Watershed – specifically the following areas above Del Clark Lake:
        - Fortier – Sections 11, 13-16 and 20-34
        - Norman – Section 8, 9, 16-18, 19-20 and 30
    - Main channel of the Yellow Medicine River, Lac qui Parle River, Florida Creek and Lazarus Creek (1 mile on each side).
    - Vulnerable well areas (Canby, Echo, Wood Lake and the Burr well field)
    - Land adjacent to the lake of Wood Lake
    - Judicial Ditch #10 Watershed – HUC Code 702004560
- Reduce the amount of wind erosion to 5 ton or less soil loss per acre on the most severely erodible acres by designing and planting 15,000 feet of field windbreaks and/or living snow fences, 100 acres of farmstead windbreaks and 25 acres of wildlife habitat. Continue to promote the installation of plastic mulch for better weed control and/or soil moisture.
- Promote enrollment of 10,000 acres into the residue management practice incentive program offered through the Environmental Quality Incentive Program (EQIP) or any other funding sources.
- Reduce the amount of water erosion to 5-ton or less soil loss per acre on severely eroded acres by the installation of BMPs such as but not limited to:
    - Terraces and/or water & sediment control basins 25,000 feet
    - Grass waterways 40 acres following conservation practices.

  Funding will be obtained through various agencies and/or programs, such as Federal, Clean Water Funds, State Cost Share Program, etc. The Ag BMP Loan Program could be used to supplement cost share dollars or to fund projects. If successful in obtaining funds through the Clean Water Fund, the SWCD will be able to substantially increase the number of practices

established in this five year period. The district will be meeting with the adjacent SWCDs in the Yellow Medicine River Watershed, Lac qui Parle-Yellow Bank Watershed and the Redwood Watershed setting goals and objectives for the perspective watersheds.

- Continue to manage CREP, RIM, and CRP easements, monitor sites to see that conservation practices are installed and conduct approximately 100 status reviews each year.
- Establish 1,500 acres of filter strips/buffers along ditches and streams to capture sediment as it leaves the fields. Assist the FSA in promoting and processing the Continuous Conservation Reserve Program. Determine if buffer strips exist along the watercourses in the county. If not, make personal phone calls and/or personal visits with landowners promoting the CRP Program and/or any other easement programs. Maintain the minimum one-rod grassed areas as it applies to drainage policy. Continue to promote and work in the Yellow Medicine River Watershed, the Lac qui Parle River Watershed, and the Redwood River Watershed to accelerate the implementation of filter strips/buffers in these areas and promote filter strip incentive programs.
- Enroll 1,500 acres of cropland subject to severe erosion into existing programs (i.e. CRP, RIM, etc.)
- Enroll 500 acres of pasture into prescribed grazing systems.
- Conduct an annual meeting of stakeholders and/or Local Work Group to discuss resource concerns and set priority areas for the Environmental Quality Incentive Program (EQIP). Promote installation of best management practices utilizing the EQIP and/or the State Cost Share Program, and the Ag BMP Loan Program for financial support. Convene Local Work Group Meetings for EQIP to discuss priority practices and priority areas. Assist with taking applications and planning for EQIP contracts.
- Educate landowners/operators about erosion and sediment control, the importance of installing conservation practices and encourage enrollment into conservation programs by providing information and options about BMP's through newsletters, news releases and individual contacts.
- Restore 150 acres of wetlands into conservation programs.
- Encourage landowners to utilize the Minnesota Department of Agriculture's on-line tool, "Minnesota Conservation Guide" which is a one-stop resource for information about agricultural and natural resource conservation practices, programs and payments.

Priority Concern: Reducing Priority Pollutants – priority pollutants, nutrients and bacteria, related to feedlots, non-conforming individual sewage treatment systems and other surface runoff

Goal: Reduce impairments by limiting nutrients and sediment from reaching the County's surface waters

Objective: Protect surface and ground water quality from contamination caused by point and non-point source pollution by reducing priority pollutants to sustainable levels.

Actions:

- Promote the timing, rate and placement of synthetic and/or organic fertilizers and pesticides using incentives (such as EQIP and others). Develop nutrient and pesticide management plans, targeting 12,000 acres countywide. Provide continual information and education to landowners regarding the need to follow the University of Minnesota's nutrient management recommendations.
- Upgrade 50 Subsurface Sewage Treatment Systems (SSTS) per year. Continue to seek funding, and administer the Ag BMP Loan program and Clean Water Partnership Low Interest Loan programs offering landowners a low interest loan to fix their nonconforming SSTS.
- Protect and enhance Del Clark Lake by encouraging landowners to install Best Management Practices. Seal two abandoned wells, bring two non-conforming sewer systems and one feedlot into compliance in the Canby Creek Watershed annually.
- Assist five feedlot operators per year with completing MPCA permits. Assist feedlot operators in seeking financial assistance through EQIP, State Cost-Share and/or the Ag BMP Low Interest Loan Program.
- Create a GIS layer of all septic systems installed in the County.
- Implement the following strategies to address feedlot compliance:
    - Continue to develop a GIS layer of feedlots registered under MPCA registration guidelines.
    - Inspect 10% of the County's feedlots annually.
    - Develop an informational packet for feedlot owners requesting to expand or modify their operation to assist them with permitting and operational questions.
- Work with 3-4 livestock producers per year in the Lac qui Parle River Watershed's high priority areas to fix pollution problems.
- Provide educational and technical assistance to homeowners on proper SSTS maintenance.
- Continue to provide inspection services as part of the County's SSTS program.
- Map cropland fields that have been identified as needed for manure application through manure management plans.
- Work with the residents of the City of Hazel Run to upgrade their non-conforming SSTS.
- Upgrade the camping and wastewater facilities at Timm Park, which is located on Wood Lake.

Objective: Target identified impaired (Total Maximum Daily Load (TMDL)) water bodies for implementation of practices to reduce pollutants.

Actions:

- Work with the Minnesota Pollution Control Agency and the watersheds to develop TMDL plans that will help meet the goal of getting the waters off the TMDL 303D list of impaired waters. The 2008 list of impaired waters in the County includes the waters listed at the beginning of this section.

- Cooperate with the Lac qui Parle-Yellow Bank Watershed District in completing the TMDL study and participate in the development of the TMDL implementation plan by serving on the Technical Advisory Committee and in other roles as necessary.
    - Assist in the development of the implementation plan for the fecal coliform and turbidity impairments in the Lac qui Parle River, Lazarus Creek and Florida Creek.
- The County should actively pursue grants and implementation dollars through the Clean Water Fund and other funding sources, for current projects, TMDL's underway and for new TMDL's/Impaired waters projects and work with State and local partners on addressing impaired waters.
- Educate landowners who own land around the County's surface waters about the importance of protecting our surface waters from deterioration.
- Update the County's Shoreland Ordinance to reflect changes made to the statewide program.
- Cooperate with the Yellow Medicine River Watershed District and participate in the development of TMDL Implementation plans by serving on the Technical Advisory Committee and in other roles as necessary.
- Cooperate with the Redwood Cottonwood Rivers Control Area (RCRCA) and participate in the development of TMDL studies and implementation plans for the impairments turbidity and fecal coliform.
- Cooperate with the Yellow Medicine River Watershed District in the monitoring and assessment of sites identified in the Surface Water Assessment Grant Program.

Priority Concern: Surface Water, Drainage Management and Flooding – managing flooding and its' effects minimizing losses associated with the flooding of agricultural lands. Address runoff volume and water quality deterioration through surface water and drainage management

Goal: To implement sound surface water and drainage management strategies

Objective: Minimize losses associated with the flooding of agricultural lands.

Actions:

- Address the smaller flood events such as 2 year and 5 year events by restoring 150 acres of wetlands through various conservation programs and increasing the number of filter strips through CCRP, etc. Target sites within the watershed to achieve strategic flood storage in conjunction with water quality and wildlife benefits
- Take flood prone land along rivers, streams and waterways out of crop production by encouraging enrollment into land retirement programs, such as CRP, RIM, WRP, etc., and applying best management practices to those areas (also see Priority Issue #2, Actions 6 and 7).

- Work with Area II, RCRCA, watershed, surrounding counties and the East Dakota Water Development District to assess, prioritize and pursue funding through various agencies for water storage opportunities.
- Use the FEMA Floodplain maps to assess agricultural flooding problems and promote local, state and federal BMP programs.
- Update the County Floodplain Ordinance to reflect changes made to the program and the official maps.
- Cooperate with the Lac qui Parle-Yellow Bank Watershed District and the Yellow Medicine River Watershed District on the construction of flood control structures and other structures that benefit water quality.

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

Actions:

- Promote the use of alternative intakes, such as blind intakes, that promote efficient trapping of sediments and nutrients that enter drainage systems. Through various sources of funding, the SWCD hopes to install 25 intakes per year.
- Seek funding for establishing a list of small dams/ponds throughout the County and their status as far as needing repair.
- Seek funds to repair two or three small dams in the county that were previously constructed by landowners (Area II, SWCD, NRCS).
- Promote upland treatment (encouraging landowners to install best management practices, seal abandoned wells and bringing non-conforming sewer systems and feedlots into compliance in the Lazarus Creek Watershed), protecting the Lazarus Creek Project.
- Encourage completion and utilize the US Fish and Wildlife Service Drained Wetland Basin Inventory, to help address current and future water quality and surface water management goals and issues.
- Yellow Medicine SWCD will provide information to the public and administer the Wetland Conservation Act (WCA).

Objective: Manage drainage systems to provide both conveyance and ecological benefits.

Actions:

- Work with contractors and others to educate the public on ditch and streambank management – buffers, side inlets, stabilizations and cause/effect of erosion.
- Increase awareness of homeowners/businesses concerning the impact of stormwater runoff on water quality. Assist Yellow Medicine County communities in reducing storm water runoff and decreasing movement of sediment and nutrients through bio-retention and rain garden BMPs. Seek funds to assist with the installation of rain gardens.
- On targeted sites reduce turbidity using natural channel management in the Yellow Medicine River and its tributaries.

- Provide educational, technical and financial assistance, as available, to landowners for pilot conservation drainage projects.
- Target watersheds of priority county ditch systems for soil saving BMPs, buffer strips, side inlets, and water control structures.