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# Le Sueur County, MN

Tuesday, March 22, 2016

Board Meeting

## Item 3

**9:35 a.m. Joshua Mankowski, Env. Resource Specialist (20 minutes)**

*RE: County Water Plan*

Staff Contact: Kathy Brockway - Environmental and P & Z Director

# Le Sueur County Local Water Management Plan 2016-2021

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**Adopted by Le Sueur County on  
XX/XX/XXXX**

**Prepared by Le Sueur County with assistance from the Le Sueur County Water Plan Task Force  
and the MN Board of Soil and Water Resources**

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## ACRONYMS

BMP	Best Management Practice
BWSR	Board of Water and Soil Resources
CB	County Board
CFO	County Feedlot Officer
CH	Community Health
Co	County
CREP	Conservation Reserve Enhancement Program
CRP	Conservation Reserve Program
CRWP	Cannon River Watershed Partnership
CSP	Conservation Security Program
CWI	County Well Index
CWL	Clean Water Legacy
CWP	Clean Water Partnership
DNR	Department of Natural Resources
EPA	Environmental Protection Agency
EQIP	Environmental Quality Incentives Program
ES	Environmental Services
FSA	Farm Service Agency
FEMA	Federal Emergency Management Agency
GIS	Geographical Information Systems
GJSSD	German-Jefferson Subordinate Service District
ITPH	Imminent Threat to Public Health
JGSIP	Jefferson German Septic Inventory Project
LA	Lake Associations
MDA	Minnesota Department of Agriculture
MDH	Minnesota Department of Health
MGS	Minnesota Geological Survey
MPCA	Minnesota Pollution Control Agency
MPDES	National Pollutant Discharge Elimination System
MSU-M WRC	Minnesota State University of Mankato – Water Resources Center
MVAC	Minnesota Valley Action Council
NRBG	Natural Resources Block Grant
NRCS	Natural Resource Conservation Service
PWS	Public Water Supply
SDS	State Disposal System
SSTS	Subsurface Sewage Treatment Systems
SULP	Septic Upgrade Loan Program
SWAG	Surface Water Assessment Grant
SWCD	Soil and Water Conservation District
TMDL	Total Maximum Daily Load
USFWS	United States Fish and Wildlife Service
USDA	United States Department of Agriculture
USGS	United States Geological Survey
UM Ext	University of Minnesota Extension

WHPP  
WRAPS  
1W1P

Wellhead Protection Plan  
Watershed Restoration and Protection Strategy  
One Watershed, One Plan

## **ACKNOWLEDGEMENTS**

A special thank you is extended to the following individuals who were involved in the preparation and development of this document. Le Sueur County appreciates their participation.

### **Le Sueur County Board of Commissioners**

David Gliszinski  
Joseph Connolly  
John King  
Lance Wetzel  
Steven Rohlfig

### **Le Sueur County Administrator**

Darrell Pettis

### **Local Water Management Staff**

Joshua Mankowski Le Sueur County Environmental Services

### **Water Plan Task Force**

Aaron Wills	Cannon River Watershed Partnership
Amy Beatty	Le Sueur County Environmental Services
Andrew Nicolin	Le Sueur County Public Health
Brian Barnett	Lake Francis Association
Dennis Byron	Lake Francis Association
Jeremy Geske	Farm Bureau/Ag Producer
Jill Steffen	Lake Volney Association
Joe Jirik	Le Sueur County SWCD
Jonathan Guentzel	Ag Producer
Michael Schultz	Le Sueur County SWCD
Pam Olson	Lake Washington Improvement Association
Ray Hewitt	Ag Producer
Steve Breaker	USDA
Sue Prchal	Le Sueur County SWCD

We also want to extend a thank you to the individuals who are not listed above but provided comments that helped shape the current plan. Thank you.

# EXECUTIVE SUMMARY

## Overview of the Le Sueur County Comprehensive Water Management Plan

- Le Sueur County's first plan approved by BWSR was adopted by the County Board of Commissioners on December 11, 1990, (Expired December 31, 1995).
- First Revision – second generation water plan – Le Sueur County Board approved resolution on December 27, 1994 to revise plan.
- County requested plan extensions. BWSR approved extension requests: November 14, 1995 and Sept. 24, 1996
- Second generation plan approved by BWSR and adopted by the County Board of Commissioners on January 13, 1998 (Expired on December 31, 2003).
- Second Revision – third generation water plan – County Board of Commissioners passed a resolution to begin the revision process on October 1, 2002.
- County requested a 2-year extension from the BWSR on August 5, 2003; request granted.
- Third generation plan approved by BWSR and adopted by the County Board on January 9, 2007. (Ten year plan with a five-year amendment required by December 31, 2010)
- Amendment to the third generation water plan began in December 2009.
- BWSR approval of plan amendment on December 15, 2010; County Board of Commissioners adopted on January 2011
- Second amendment to the third generation water plan began August 19, 2014.
- County requested a six month extension from BWSR on January 6<sup>th</sup> 2015, request granted.
- BWSR approval of plan amendment on [date], Count Board of Commissioners adopted on [date].

## Purpose of the Local Water Management Plan

The purpose of the Local Water Management Plan is the protection of water resources in the County from point and nonpoint sources of pollution. Coordination of these protection efforts between the various local, state, and federal agencies and organizations reduces duplication and eliminates gaps in implementation strategies aimed at a common goal of water protection.

The water plan meets the requirements set forth in M.S. 103B.311subd.4 as follows:

1. The plan covers the entire county.
2. The plan addresses problems in the context of watershed units and ground water systems.
3. The plan is based upon principles of sound hydrologic management of water, effective environmental protection, and efficient management.
4. The plan is consistent with local water management plans prepared by counties and watershed management organizations wholly or partially within a single watershed unit or ground water system.
5. The plan duration is for ten years with review and amendment to the plan as necessary in five years.

## Goals of the Focus Plan

Goal 1: Protected, restored and improved surface water quality in lakes, rivers and streams

Goal 2: All septic systems in Le Sueur County brought into compliance

Goal 3: Minimized impacts from runoff of development areas and agricultural land that alter surface water hydrology

Goal 4: Diminished issues caused by urban and development stormwater runoff

Goal 5: Achieved no net loss of existing natural shoreline

Goal 6: Achieved a net natural shoreline gain through shoreline restorations

Goal 7: Protected groundwater quality and quantity

Goal 8: Maintained drainage systems while sustaining agricultural productivity. Improved artificial drainage water quality, as well as understood that the system is part of a watershed

Goal 9: Reduced water quality issues from agricultural sources to surface water

### **Water Plan Accomplishments 2010-2015**

#### ***Priority Concern: Impaired Waters***

Le Sueur County worked with the MPCA on the TMDL process for Lake Volney and Jefferson German chain of lakes. The TMDLs for both were approved by the EPA on September, 2 2014.

Le Sueur County applied for and received a CWF Grant to do projects around Lake Volney to address water quality issues documented in the TMDL. Work on these projects commenced in 2016.

County staff worked with the CRWP as they work to complete the WRAPS for the Cannon River Watershed. The WRAPS for the Cannon River reflects a watershed based approach to improving water quality and protecting water resources.

Work was done to complete the WRAPS for the Middle Minnesota and Lower Minnesota River Watersheds. This is a joint effort by the Counties that border these sections of the Minnesota River, working in hand with the MPCA.

A SWAG was received by Le Sueur County from the MPCA to conduct sampling along tributaries to the Lower Minnesota River. Sampling was done for nutrient and bacterial levels at a number of sample sites. The data will be used to assess water quality issues within the Lower Minnesota River watershed.

#### ***Priority Concern: Wastewater Treatment***

Le Sueur County strengthened its SSTS program through the ordinance revision process beginning in 2008 with ordinance revision adoptions in 2010, 2013, and 2016.

The County's Zoning Ordinance requires a compliance inspection when the following conditions occur.

- In all non-shoreland Zoning Districts, a compliance inspection must be completed prior to any zoning permit application for the principle structure, Variance or Conditional Use Permit application.
- In all shoreland Zoning Districts, a compliance inspection must be completed prior to any zoning permit application, Variance or Conditional Use Permit application.
- When a construction permit is required to repair, modify, or upgrade an existing system.
- Any time there is a change in use of the property and/or expansion of the structure being served by an existing SSTS, which may impact the performance of the system.
- Prior to property sale or transfer (which the County has had in place since 1996).
- At any time as required by the County's Zoning Ordinance or the County deems appropriate such as upon receipt of a complaint or other notice of a system malfunction.

Le Sueur County is more restrictive than the State by requiring an SSTS deemed as failing to protect groundwater to be upgraded, repaired, replaced, or abandoned within one (1) year of the date of the Notice of Noncompliance. It is as restrictive as the State by requiring an SSTS deemed an imminent threat to public health or safety to be upgraded, repaired, replaced, or abandoned within ten (10) months of the date of the Notice of Noncompliance.

In 2010, 2012 and 2016, the County held septic contractor meetings. When a septic contractor meeting was not held, a newsletter was mailed to all septic contractors who did septic work within the County. The



newsletters and their attachments, contained information about the requirements for designing, installing, maintaining, inspecting and providing service to SSTS in Le Sueur County.

In 2011, Le Sueur County initiated the JGSIP with the help of a CWF grant from BWSR. The goal of the inventory was to determine the compliance status of SSTS serving the properties within the Subordinate Service District. The results from the inventory and input from the residents within the District were taken into account when the Sewer District Board decided on August 4, 2015 to forgo a sewer pipe around the chain of lakes and allow the use of individual SSTS as the means for meeting the sewage treatment needs of the District. All SSTS within the District will be required to be compliant by December 31, 2017. As part of the Sewer District Board's August 4, 2015 decision, all SSTS within the District are required to be kept in a constant state of compliance.

The number of inspections of upgraded and new systems during 2010-2015:

- 2010-15 new systems and 65 upgraded systems
- 2011-26 new systems and 84 upgraded systems
- 2012-21 new systems and 76 upgraded systems
- 2013-28 new systems and 67 upgraded systems
- 2014-24 new systems and 61 upgraded systems
- 2015-29 new systems and 80 upgraded systems

Le Sueur County utilized CWP funds to create a County wide, low interest loan program for septic upgrades (SULP) in 2007. Low interest loan funds were also available through the Middle Minnesota Watershed (CWP funds) and through the Le Sueur County SWCD. In the time from 2010-2015, 48 individuals have used SULP to upgrade their septic systems. News releases have been published promoting this program. In 2015, SULP funds became exhausted. Seeing the importance of such a program within the County and the number of SSTS that would need to be upgraded in the GJSSD alone, Le Sueur County bonded in order to continue to fund the program.

***Priority Concern: Surface Water Management***

Wetland restorations occurred and terraces, sediment basins and buffers were installed through the NRCS, SWCD cost share and Clean Water Partnership projects. The SWCD worked with several landowners on creating wetland banking projects.

Promotion of Best Management Practices for reducing stormwater runoff occurred through news releases and presentations at lake association meetings.

***Priority Concern: Protection of Undeveloped Shoreline***

In 2009, there were a total of 40 shoreland regulation inquiries. Through news releases, word of mouth and lake association newsletters/meetings, the number of shoreland inquiries rose to over 49 in just the last half of 2015. The increase in inquiries demonstrates that people are becoming more informed and concerned about the different requirements within the shoreland district. Many of the residents had interest in projects that they could do that would benefit water quality.

Repair of negatively altered shorelines occurs through conditional use permit and variance processes. CWP implementation and Gravel Tax funds have went towards improving shoreland areas.

***Priority Concern: Drinking Water Protection***

News releases on water quality come from the MDH. The Environmental Services Department and Tri-County Solid Waste Joint Powers conducted household hazardous waste and tire, appliance and electronic collections annually. Water testing is required on new wells.

**Priority Concern: County Drainage System Management**

Drainage issues and ditch repairs are ongoing in Le Sueur County. With the passing of the new buffer and soil loss legislation in 2015, work has begun to help property owners meet these new requirements ahead of the deadline for compliance. The new law has also sparked more interest in redetermination of benefits.

**Priority Concern: Minimize Environmental Risks of Agricultural Impacts to Water Resources**

Water quality assessment projects were completed in the Upper Cannon (CWP \$184,588), Forest Prairie Creek and Le Sueur Creek watersheds (SWAG \$54,383), and Gorman and Sabre Lakes Assessment (SWAG \$48,332).

The Le Sueur CFO continues to administer the animal feedlot program.

Animal feedlot work conducted from 2010-present include

- Investigation of a manure spill into Cherry Creek (2012)
- Continual updating of the County's animal feedlot inventory
- Animal feedlot facility and land application compliance inspections
- Revisions of the animal feedlot and manure management section of the County Zoning Ordinance (2010 and 2013)
- Discussion with animal feedlot owners about land application requirements and regulations as part of the animal feedlot facility compliance inspection

NRCS activities that occurred from 2010-2015:

- Restoration of Rare and Declining Habitat – 70 contracts for 980 ac
- Wetland Restorations (wetland & upland) – 50 contracts for 650 ac
- Reforestation Projects – 10 contracts for 156 acres
- Filter Strips – 220 contracts for 1,311 ac
- Upland Wildlife Habitat Acres (SAFE) – 60 contracts for 790 ac
- Prescribed Grazing – 236.5 ac
- Upland Wildlife Management – 2.1 ac
- Grade Stabilization Structures – 3
- Critical Area Planting – 43.5 ac
- Cover Crop – 333.6 ac
- Brush Management – 21.5 ac
- Nutrient Management – 21.5 ac
- Pest Management – 815.3 ac
- Animal Mortality Facilities – 5
- Water & Sediment Control Basins – 147
- Closures of Waste Impoundments – 6
- Well Decommissioning – 5
- Terraces – 8
- Season High Tunnels – 5
- Residue & Tillage Management – 206.8 ac
- Forest Stand Improvements – 30 ac
- Windbreak/Shelterbelt – 1

SWCD activities reported from 2010-2015:

- Re-Invest in Minnesota (RIM) – 39 contracts for 1,330 ac (includes RIM Buffers, Wetlands, Bonding and RIM-WRP)

- Terraces/Sediment Blocks – 42
- Grade Stabilization Projects – 3
- Stream Bank Projects – 2
- Waterways – 2
- Hayable buffers – 1
- Side Inlet – 1
- Wetland Restoration – 1
- WCA Administration

**Funding Sources Used For Local Water Management**

**2011**

LWM	\$13,274
Levy	\$8,187
NRBG Program	\$60,684
Total NRBG Program Contribution	\$111,339

**2012**

LWM	\$13,501
Levy	\$ 8,100
NRBG Program	\$70,281
Total NRBG Program Contribution	\$108,618

**2013**

LWM	\$13,501
Levy	\$ 8,145
NRBG Program	\$70,281
Total NRBG Program Contribution	\$89,677

**2014**

LWM	\$13,501
Levy	\$ 8,566
NRBG Program	\$70,094
Total NRBG Program Contribution	\$98,780

**2015**

LWM	\$13,501
Levy	\$8,145
NRBG Program n	\$70,814
Total NRBG Program Contribution	\$105,533

Le Sueur County allocated general funds along with the NRBG to go towards the full time position of an Environmental Resources Specialist. Other sources of funding to implement the Le Sueur County Water Management Plan include State Cost Share (SWCD), NRCS Federal conservation programs, CWP funding, Challenge Grants, SWAGs, 319 Grant and CWFs.

## **Ongoing Programs**

### **Animal Feedlots**

The County's animal feedlot program includes administration of Minnesota Rules, Chapter 7020 – Animal Feedlots and the Animal Feedlot and Manure Management section of the County's Zoning Ordinance.

The MPCA administers the construction and/or operation of an animal feedlot or manure storage area that is required to apply for permit coverage under:

- The NPDES permit for an animal feedlot that currently has capacity, or is proposing to have capacity, that meets or exceeds any one of the federal large confined animal feeding operation thresholds and discharges to waters of the United States; or
- The SDS permit for an animal feedlot that currently has capacity, or is proposing to have capacity, for a total of 1,000 or more animal units. An animal feedlot owner who meets the requirements to obtain an SDS permit may apply and be issued an NPDES permit.

Current staffing levels can be maintained as long as state funding through the MPCA Feedlot Base Grant is available to the County and regional technical assistance grants are continued to address emerging needs. This should ensure that program goals laid out in the water plan and in the annual animal feedlot work plan will be met.

### **Subsurface Sewage Treatment Systems**

Le Sueur County administers Minnesota Rules, Chapters 7080-7083 within the County's applicable jurisdiction.

The County adopted, by reference, Minnesota Rules, Chapters 7080 and 7081 in their entirety and as amended from time to time.

All new, upgraded, and repaired SSTS are reviewed and permitted through the County's Planning and Zoning Department.

Loans are available for upgrading qualifying, noncompliant existing systems. There are loans available through the SWCD's Ag BMP program, MVAC fix-it program, and the County's SULP.

The County's Zoning Ordinance requires a compliance inspection when the following conditions occur.

- In all non-shoreland Zoning Districts, a compliance inspection must be completed prior to any zoning permit application for the principle structure, Variance or Conditional Use Permit application.
- In all shoreland Zoning Districts, a compliance inspection must be completed prior to any zoning permit application, Variance or Conditional Use Permit application.
- When a construction permit is required to repair, modify, or upgrade an existing system.
- Any time there is a change in use of the property and/or expansion of the structure being served by an existing SSTS, which may impact the performance of the system.
- Prior to property sale or transfer (which the County has had in place since 1996).
- At any time as required by the County's Zoning Ordinance or the County deems appropriate such as upon receipt of a complaint or other notice of a system malfunction.

### **Municipal Wastewater Treatment**

The MPCA regulates and monitors activities related to municipal treatment facilities. The County has input if expansion or upgrading of a facility is proposed.

**Wetland Conservation Act**

Le Sueur County will continue to administer the Wetland Conservation Act for the entire county. Delegation for administration of the program will remain with the Le Sueur County SWCD.

**Floodplains**

Flooding events in recent years have highlighted the need for floodplain ordinances. The County and cities with ordinances are gradually working to eliminate those structures that are not flood worthy and introduce land uses in the floodplain that are least impacted by floods. The public is coming to accept the need for limits on development in the floodplain. The maps from the Federal Emergency Management Agency appear to be acceptable to all local units of government as a guide to the areas susceptible to flooding. All unincorporated areas of the County fall under the County's floodplain ordinance.

**Shoreland Management**

The County receives a small grant each year from the DNR for administration of the shoreland ordinance on all lands in the County within 1,000 feet landward from the ordinary high water level of all protected watercourses as identified on the Protected Waters and Wetlands map. Shoreland on protected streams are within 300 feet. An annual report is submitted to the DNR about the activities regulated in the shoreland district.

**Solid Waste**

The County's Zoning Ordinance, the County's Solid Waste Management Ordinance, and Tri-County Solid Waste Joint Power's Comprehensive Solid Waste Management Plan will be the primary mechanisms used to address solid waste issues.

## GOALS OBJECTIVES AND IMPLEMENTATION OF THE PRIORITY CONCERNS

The Priority Concerns listed below are not in order of priority. A goal is a desired end toward which the County's policies, ordinances, criteria and rules are directed. A policy is a governing principle, a means of achieving an established goal. Policies are methods or actions that lead toward achieving the goal. Objectives are similar; they are efforts that are directed: an aim toward a goal, or end of action.

The format of this section is in the order listed below:

- The Priority Concern: The priority concerns are not listed in any order of priority
- Discussion of the concern
- Goals: The goals are presented in past tense to give a vision of accomplishment.
- Objectives
- Implementation: actions, responsible agency, timeframe, cost, benefit and status

### *Priority Concern 1: Impaired Waters*

Water is a large part of the economy of Le Sueur County with its 128 lakes, many creeks, streams and rivers. There are approximately 250 miles of drainage ditches within the County. Appendix A presents Le Sueur County information on watersheds, lakes, municipalities, and topography. Appendix B shows maps of Le Sueur County surface water. The issue of impaired waters was brought to attention when Co lakes were first listed in the Inventory of Impaired Waters List. According to the current Proposed 2014 Inventory of Impaired Waters List, Le Sueur County has 12 recreational lakes that have been placed on the list for nutrients. There are segments of the Minnesota River and Sand Creek that are found on the 2014 draft list of impaired waters. Whitewater and Waterville Creeks and the Le Sueur River watersheds are listed along with 18 lakes. The 2016-2021 Le Sueur County Comprehensive Local Water Plan addresses these impairments through the use of the TMDL and WRAPS tools. These processes strive to correct, enhance and preserve the abundant surface water resources that are characteristic of Le Sueur County. Le Sueur County will participate in the TMDL and WRAPS processes for all impaired waters. Le Sueur County will participate in the process of drafting and implementing IWIP documents as work is done to understand and work to handle impairments on a watershed scale.

Impaired waters are a priority because:

1. These waters do not meet state water quality standards for their designated use.
2. It affects the growth and health of local communities and the economy.
3. The Clean Water Act has a mandate requiring all states to address the impairments.

Below is information on TMDLs taken from MPCA's website.

*Section 303(d) of the Clean Water Act requires states to publish and update a list of waters that are not meeting one or more water-quality standards. The list, known as the 303(d) Total Maximum Daily Load (TMDL) list, is updated every two years. Following [assessment](#) of water quality data and an extensive public participation process, the draft TMDL list is submitted to the U.S. EPA for final approval. Minnesota's 2014 draft TMDLs listed contains 2,452 impairments 2,306 rivers 803 lakes. Minnesota's 2010 draft TMDL list contains 1,774 impairments on 388 rivers and 647 lakes. Minnesota's 2008 list*

contained 1,475 impairments on 336 rivers and 510 lakes. The 2010 TMDL list contains target schedules to address listed waters through TMDL projects. Waters in the Inventory of impaired waters will remain there until they meet water quality standards.

Water quality data is available at:  
<https://www.pca.state.mn.us/water/water-quality-data>

The 2014 Draft Impaired Waters list can be found at this link:  
<https://www.pca.state.mn.us/water/minnesotas-impaired-waters-list>

**Goal 1: Protected, restored and improved surface water quality in lakes, rivers and streams**

**Objective 1: Work with the MPCA, Lake Associations, neighboring counties and other state and federal agencies on the TMDL process with the development of TMDL implementation plans that address impairments according to the MPCA schedule by 2021.**

**Implementation:**

<b>Objective 1: Work with the MPCA, Lake Associations, neighboring counties and other state and federal agencies on the TMDL process with the development of TMDL implementation plans that address impairments according to the MPCA schedule by 2021.</b>	<b>Responsible and Participating Agencies</b>	<b>Timeline</b>	<b>Cost Estimate</b>	<b>Benefit</b>	<b>Status</b>
<i>Action 1:</i> Determine annually, the local impairments from the 303(d) list and the timeline of the State to address these impairments.	ES	2016-2021	\$500	Cannon River Watershed, Minnesota River Watershed	Ongoing

<b>Action 2:</b> Develop TMDL Implementation Plans by coordinating and/or participation in meetings and providing input.	LA, ES, SWCD, CB, MPCA, MSU-M WRC, CRWP	2016-2021	\$20,000	Lake Volney, Jefferson German Lakes, Lake Tetonka, Upper Sakatah, Cannon River and Le Sueur River, Lower and Middle Minnesota River Watersheds	Ongoing
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TOTAL: \$20,500

<b>Objective 2: Execute WRAPS and TMDL Implementation Plans by Year 2021.</b>
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**Implementation:**

<b>Objective 2: Implement TMDL Implementation Plans by Year 2020.</b>	<b>Responsible and Participating Agencies</b>	<b>Timeline</b>	<b>Cost Estimate</b>	<b>Benefit</b>	<b>Status</b>
<b>Action 3:</b> Incorporate TMDL and WRAPS implementation actions into local plans.	ES, LA, SWCD, Ag Organizations	2016-2021	\$2,000	Lake Volney, Jefferson German Lakes, Minnesota River, Le Sueur River, Sand Creek, Cannon River	When TMDL and WRAPS plans are completed.



<b>Action 4:</b> Implement TMDL plans.	MPCA, ES, LA, SWCD, Ag Organizations	2016-2021	\$600,000	Lake Volney, Jefferson German Lakes, Minnesota River, Sand Creek, Cannon River	Ongoing
<b>Action 5:</b> Cooperate with partners on the development of local WRAPS.	MPCA, ES, LA, SWCD, Ag Organizations, Neighboring Counties	2016-2021	\$20,000	Middle Minnesota River and Lower Minnesota River	Ongoing
<b>Action 6:</b> Implement WRAPS	MPCA, ES, LA, SWCD, Ag Organizations, Neighboring Counties	2016-2021	\$2,000,000	Middle Minnesota River, Lower Minnesota River, Cannon River	Ongoing

TOTAL: \$2,622,000

**Objective 3: Collect useful scientific water quality data on area lakes, streams, rivers and wetlands within the in Middle Minnesota River, Lower Minnesota River and Cannon River.**

**Implementation:**

<b>Objective 3: Collect useful scientific water quality data on area lakes, streams, rivers and wetlands within the in Middle Minnesota River, Lower Minnesota River and Cannon River.</b>	<b>Responsible and Participating Agencies</b>	<b>Timeline</b>	<b>Cost Estimate</b>	<b>Benefit</b>	<b>Status</b>
<b>Action 7:</b> Locate funding sources to assess surface water in the Middle Minnesota, Lower Minnesota and Cannon River Watersheds.	ES, LA, CRWP, MPCA	2016-2021	\$30,000	Prioritize restoration efforts, develop local ordinances that improve water quality.	Annual
<b>Action 8:</b> Implement the monitoring project, which includes entering data into the State reporting program.	ES, LA, CRWP, MPCA, MSU-M WRC	Ongoing	\$150,000	Middle Minnesota, Lower Minnesota and Cannon River Basins	Dependent on funding received
<b>Action 9:</b> Implement a monitoring project to track water quality in County lakes	ES, LA, CRWP, MPCA, MSU-M WRC	Ongoing	\$100,000	Middle Minnesota, Lower Minnesota and Cannon River Basins	Dependent on funding received

TOTAL: \$280,000

**Objective 4: Work with the MPCA, Lake Associations, neighboring counties and other state and federal agencies on the creation of One Watershed One Plan documents for watersheds in Le Sueur County.**

**Implementation:**

<b>Objective 4: Work with the MPCA, Lake Associations, neighboring counties and other state and federal agencies on the creation of One Watershed One Plan documents for watersheds in the County.</b>	<b>Responsible and Participating Agencies</b>	<b>Timeline</b>	<b>Cost Estimate</b>	<b>Benefit</b>	<b>Status</b>
<i>Action 10:</i> Develop 1W1P documents by coordinating with local partners, participation in meetings, providing input and assist in the creation of the document as needed.	ES, LA, MPCA, BWSR, Nicollet Co, Sibley Co, Blue Earth Co, Waseca Co, Rice Co, Scott Co.	2016-2021	\$500,000	Align local water planning on major watershed boundaries with state strategies towards prioritized, targeted and measurable implementation plans	Ongoing

TOTAL: \$500,000

***Priority Concern 2: Wastewater Treatment***

An increase in the rate of growth in Le Sueur County has resulted in development around many of the County’s cities and lakeshore areas. With development comes the need for proactive management of new SSTS and compliance of existing systems. Identifying wastewater treatment as a priority in the water plan is considered a vital component for supporting existing state and local requirements, as well as to focus attention on strengthening and improving the SSTS program.

As development progresses, some of the small, seasonal cabins have been enlarged and converted to large, year round homes. With small lake lot sizes, sewage treatment options include advanced treatment systems, cluster systems, holding tanks, and piping waste to municipality wastewater treatment plants. It has been requested of the County to investigate and address the compliance status in and around county lake communities. German-Jefferson Subordinate Service District completed a Septic Inventory Project and Frances, Rays, Sakatah, and Tetonka Lakes have a grant to complete an inventory.

Le Sueur County is progressive with upgrading non-compliant septic systems in the County. It is mandatory to have a compliance inspection conducted at point of sale and with any shoreland zoning permit application, Variance or Conditional Use Permit application. As of 2010 in all non-shoreland Zoning Districts, a compliance inspection must be conducted prior to any zoning permit application for the principle structure, Variance or Conditional Use Permit application. Funding sources for updating non-compliant systems has been provided through the SWCD's Ag BMP loan program, the County's revolving loan program SULP and MVAC's Fix-It Program. There were prior loan programs through CWP for Jefferson German Lakes, Lake Volney and Lake Washington lakesheds. Since 2010, there have been over 550 new and upgraded SSTs servicing the dwellings in the County (this would include dwellings in and outside of shoreland).

As for cities within Le Sueur County, the following cities have upgraded their wastewater treatment plants since 2000: City of Montgomery – 2003, City of Le Sueur – 2009, City of New Prague – 2010, City of Kasota – 2004 (part of the city served by the city of St. Peter), City of Le Center – 2005 and 2014 – dechlorination unit and City of Waterville has started construction on its new wastewater treatment plant in 2015.

**Goal 2: All septic systems in Le Sueur County brought into compliance**

**Objective 5: Strengthen and improve the SSTs Local Program by December 2021.**

**Implementation:**

<b>Objective 5: Strengthen and improve the Le Sueur County SSTs Program by December 2021.</b>	<b>Responsible and Participating Agencies</b>	<b>Timeline</b>	<b>Cost Estimate</b>	<b>Benefit</b>	<b>Status</b>
<i>Action 11:</i> Conduct a septic inventory around lakes to protect water quality (see Priority List, Appendix C).	ES	2016-2021	700,000	Minnesota River Basin and Cannon River Basin, Aquifers	Ongoing
<i>Action 12:</i> Conduct a County wide septic system inventory.	ES	2016-2021	\$250,000	Minnesota River Basin and Cannon River Basin, Aquifers	Dependent upon funding received

<b>Action 13:</b> Enter data into a septic database. Utilize ArcMap using GPS as a mapping tool when applicable.	ES, Co GIS	2016-2021	50,000	Minnesota River Basin and Cannon River Basin, Aquifers	Ongoing
<b>Action 14:</b> Update septic system inventory on a regular basis.	ES	2016-2021	\$50,000	Minnesota River Basin and Cannon River Basin, Aquifers	Ongoing
<b>Action 15:</b> Employee a full time Septic Program Staff person.	CB, ES, BWSR, MPCA	2016-2021	\$240,000	Minnesota River Basin and Cannon River Basin, Aquifers	Ongoing
<b>Action 16:</b> Work on County Ordinances to strengthen SSTS enforcement.	ES, Co	2016-2021	\$15,000	Minnesota River Basin and Cannon River Basin, Aquifers	Ongoing

TOTAL: \$ 555,000

**Objective 6: Increase the number of SSTS upgrades to bring systems into compliance by 20% annually.**

**Implementation:**

<b>Objective 6: Increase the number of SSTS upgrades to bring systems into compliance by 20% annually.</b>	<b>Responsible and Participating Agencies</b>	<b>Timeline</b>	<b>Cost Estimate</b>	<b>Benefit</b>	<b>Status</b>
<b>Action 17:</b> Continue SULP	CB, ES, MDA	2016-2021	\$1,500,000	Minnesota River Basin and Cannon River Basin and Aquifers	Ongoing
<b>Action 18:</b> Develop incentive payment program for septic upgrades.	ES	2016-2021	\$5,000	Minnesota River Basin and Cannon River Basin and Aquifers	Will need planning and initial set up

<b>Action 19:</b> Locate grant-funding sources for incentive payment program for septic upgrades.	ES	2016-2021	\$5,000	Minnesota River Basin and Cannon River Basin and Aquifers	Set timeframe
<b>Action 20:</b> Implement program for incentive payment program for septic upgrades.	ES	2016-2021	\$10,000	Groundwater aquifers and Minnesota River and Cannon River Watersheds	Set timeframe
<b>Action 21:</b> Educate landowners about nonconforming septic systems and the relationship between these systems and water quality through news releases, workshops, brochures and mailings.	ES, UM Ext, CRWP	2016-2021	\$5,000	Minnesota River Basin and Cannon River Basin and Aquifers	Ongoing
<b>Action 22:</b> Promote local SSTS programs that offer education, financial assistance and alternative system research.	ES, CB, UM Ext, CRWP	2016-2021	\$5,000	Minnesota River Basin and Cannon River Basin and Aquifers	Ongoing
<b>Action 23:</b> Work with Lake Associations and municipalities on sewer options.	CB, ES, LA, CRWP, MPCA, MN Rural Water	2016-2021	\$5,000	All Lakes	Ongoing

TOTAL: \$1,535,000

**Priority Concern 3: Surface Water Management**

Stormwater quality refers to the amount of pollutants that are washed off the land and transferred by stormwater runoff to lakes, streams and wetlands. Concentrations of nutrients, pollutants, heavy metals and suspended solids typically found in runoff can significantly degrade downstream water bodies by increasing turbidity, water temperature and growth of algae.

This priority focuses on management of stormwater in both urban and rural settings. New development located adjacent to existing cities, near lakeshore or simply placed in a rural setting need to be regulated to prevent the associated nutrient and sediment runoff impacts to our water resources. With the State’s trend towards stronger regulations, the Water Plan Task Force identified this as an issue demanding immediate attention.

An increased quantity of stormwater over time has led to larger volumes and higher velocities which increases erosion and damage stream channels. Deposition of the sediment load occurs at lower velocities where the sediment carrying capacity of the water is reduced. An increase in water runoff typically brings with it a decrease in water quality. Though no local monitoring of stormwater has been conducted, visual impacts can be found. Le Center has a five-phase project that will increase stormwater capacity. The Cities of Montgomery and Elysian have begun collecting funds to construct infrastructure to handle stormwater. Waterville has flooding issues. The Cannon River flows through Tetonka and Sakatah Lakes. Waterville has 50% of their properties located within the floodplain. Two campgrounds and the city lagoon system are located below floodplain levels. In the 1990's, FEMA bought out several homes but many are still being lived in. There are reports available on research done with regards to stormwater discharge that can be applied to Le Sueur County. For example, stormwater research was conducted in the Le Sueur River Watershed and can be applied to municipalities in Le Sueur County. There is an industrial stormwater permitting process in place. Future watershed assessment projects should have a stormwater component.

Stormwater also needs to be addressed on a rural basis. Agricultural runoff is addressed in the County Drainage System Management Priority Concern. Rural runoff includes development, large yards, rural industry and impervious surfaces. Agricultural Stormwater will be addressed through the Drainage Code (MN Stat.103E) and through the WCA.

**Goal 3: Minimized impacts from runoff of development areas and agricultural land that alter surface water hydrology**

**Objective 7: Increase the number of agricultural water retention structures (see objective 8 for wetlands) on the landscape up to 30% annually by 2021.**

**Implementation:**

<b>Objective 7: Increase the number of water retention structures and practices (see objective 8 for wetlands) on the landscape by 30% annually by 2021.</b>	<b>Responsible and Participating Agencies</b>	<b>Timeline</b>	<b>Cost Estimate</b>	<b>Benefit</b>	<b>Status</b>
<i>Action 24 :</i> Actively promote programs that provide financial assistance to install water retention BMPs. See watershed implementation plans for priority projects.	SWCD, NRCS, ES	2016-2021	\$1,000,000	Cannon River and Minnesota River Basins	Ongoing

<b>Action 25 :</b> Continue funding cost share programs up to 75%.	ES, SWCD	2016-2021	\$50,000	Cannon River and Minnesota River Basins	Ongoing
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TOTAL: \$1,050,000

**Objective 8: Increase the number of wetland restoration contracts in the County up to 20% annually by 2021 based on NRCS, SWCD and FSA restoration reports.**

**Implementation:**

<b>Objective 8: Increase the number of wetland restoration contracts in the County up to 20% annually by 2021 based on NRCS, SWCD and FSA restoration reports.</b>	<b>Responsible and Participating Agencies</b>	<b>Timeline</b>	<b>Cost Estimate</b>	<b>Benefit</b>	<b>Status</b>
<b>Action 26:</b> Promote wetland restorations and programs in areas that will address surface water peak flow.	NRCS, SWCD, ES, CRWP, Pheasants Forever, DNR, USFWS, Waterfowl Associations, Conservation groups	2016-2021	\$200,000	Minnesota River and Cannon River Watersheds	Ongoing
<b>Action 27:</b> Utilize Co Terrain Analysis Data to identify priority areas for restoration.	NRCS, SWCD, FSA, ES,	2016-2021	\$20,000	Minnesota River and Cannon River Watersheds	Ongoing
<b>Action 28:</b> Locate funding sources for incentive for wetland restorations.	ES, SWCD	2016-2021	\$10,000	Minnesota River and Cannon River Watersheds	Ongoing
<b>Action 29:</b> Maintain GIS coverage of wetland restoration.	NRCS, SWCD, FSA, ES, BWSR	2016-2021	\$10,000	Minnesota River and Cannon River Watersheds	Ongoing

TOTAL: \$240,000



**Objective 9: Increase the number of municipal and shoreland water retention structures and practices on the landscape by 30% by 2021.**

**Implementation:**

<b>Objective 9: Increase the number of municipal and shoreland water retention structures and practices on the landscape by 30% by 2021.</b>	<b>Responsible and Participating Agencies</b>	<b>Timeline</b>	<b>Cost Estimate</b>	<b>Benefit</b>	<b>Status</b>
<i><b>Action 30:</b></i> Create an inventory of municipal stormwater systems and locate areas that flood.	ES, Municipalities	2016-2021	\$ 5,000	Municipalities, watershed health.	
<i><b>Action 31:</b></i> Actively promote programs that provide financial assistance to install water retention BMPs.	ES, LA	2016-2021	\$25,000	Cannon River and Minnesota River Basins	Ongoing
<i><b>Action 32:</b></i> Locate funding sources to continue to offers 75% cost share.	ES, CRWP	2016-2021	\$20,000	Cannon River and Minnesota River Basins	Ongoing
<i><b>Action 33:</b></i> Implement the rain garden/native plantings Cost Share Project by installing up to 20 shoreland BMP projects.	ES, LA	2016-2021	\$72,000	Le Center Le Sueur Cleveland Kasota Kilkenny Waterville Elysian Montgomery New Prague Heidelberg Rural development Shoreland	Ongoing

Total: \$122,000

**Objective 10: Increase the number of conservation easements such as RIM in the County by 20% to restore wetlands and provide vegetative cover for clean water the reduce sediment and nutrients in our water by 2021.**

**Implementation:**

<b>Objective 10: Increase the number of conservation easements such as RIM in the County by 20% to restore wetlands and provide vegetative cover for clean water the reduce sediment and nutrients in our water by 2021.</b>	<b>Responsible and Participating Agencies</b>	<b>Timeline</b>	<b>Cost Estimate</b>	<b>Benefit</b>	<b>Status</b>
<i>Action 34:</i> Actively promote conservation easement sign ups when available.	SWCD	2016-2021	\$20,000	Cannon River and Minnesota River Basins	Ongoing
<i>Action 35:</i> Educate landowners on the benefits of conservation easements.	SWCD	2016-2021	\$5,000	Cannon River and Minnesota River Basins	Ongoing

Total: \$25,000

**Goal 4: Diminished issues caused by urban and development stormwater runoff**

**Objective 11: Promote sound hydrologic storm water management to reduce runoff to 10 municipalities and unincorporated areas annually by 2021.**

**Implementation:**

<b>Objective 11: Promote sound hydrologic storm water management to reduce runoff to 10 municipalities and developers and unincorporated areas by 2021.</b>	<b>Responsible and Participating Agencies</b>	<b>Timeline</b>	<b>Cost Estimate</b>	<b>Benefit</b>	<b>Status</b>
<p><i>Action 36:</i> Provide information to all municipalities, residents and developers in the Co on Best Storm Water Management practices through letters, news releases and workshops.</p>	ES, MPCA	2016-2021	\$ 10,000	MN River and Cannon River Watersheds	Ongoing

TOTAL: \$10,000

**Objective 12: Promote storm water management to municipalities and all residents to reduce pollutants from reaching surface water annually by 2021.**

**Implementation:**

<b>Objective 12: Promote storm water management to municipalities and all residents to reduce pollutants from reaching surface water annually by 2021.</b>	<b>Responsible and Participating Agencies</b>	<b>Timeline</b>	<b>Cost Estimate</b>	<b>Benefit</b>	<b>Status</b>
<p><i>Action 37:</i> Provide information to all municipalities, their residents and to developers in Le Sueur County on Best Storm Water Management practices through letters, posters, news releases and workshops.</p>	ES, MPCA, CRWP, LA	2016-2021	\$ 10,000	Minnesota River and Cannon River Watersheds	Ongoing

<b>Action 38:</b> Develop 2 workshop projects and locate funding for the workshops on stormwater management.	ES, LA, Friends of the MN Valley, UM Ext, CRWP	2016-2021	\$ 6,000	Minnesota River and Cannon River Watersheds	2016-2021
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TOTAL: \$ 16,000

***Priority Concern 4: Protection of Undeveloped Shoreline***

As previously stated, urban sprawl in Le Sueur County is on the rise. It is evident that a significant percent of the population is drawn to living on or near our surface water resources. Areas once considered non-suitable for development have now become potential places for growth. These undisturbed areas are critical to maintaining and protecting hydrology, water storage, buffers and native species. In order to prevent the loss and destruction of these remaining natural habitats, the Water Plan Task Force strongly supports this as a priority issue.

This priority concern brings preservation and restoration together. Management and restoration of developed shorelines is just as important as preserving undeveloped shoreline. Undeveloped shoreland is a buffer zone for protection of lakes, rivers and streams. In the DNR publication: “Land Protection Options: Handbook for Minnesota Landowners” the author wrote:

Open space lands affirm life. In the best sense of the word, these are productive lands; they promote air and water quality, build soils (improve soil structure), reduce flooding, foster genetic diversity that gives our environment resiliency in the face of drought and disease, provide opportunity for recreation, offer scenic beauty to be enjoyed by a community’s residents and visitors, and enrich our lives in countless other ways. They merit our protection because of their intrinsic worth, and because—plain and simple—they are necessary to human health, our long-term economic vitality, and the quality of life in our communities. (5)

Le Sueur County is home to 128 named and unnamed lakes. The lakes range in size from ten to 2,290 acres. Le Sueur County has eight Lake Associations. Lakeshore management is an issue that needs to be addressed. Many lakes are under development pressure. These lakes include Jefferson, German, Francis, Tetonka, Sakatah, Washington, Emily, Volney, Gorman, Greenleaf and Pepin. Lakes not listed above may be added to this list as development continues. Development is also beginning to occur around Natural Environment Lakes and wetlands. Le Sueur County is more strict with development along Natural Environment Lakes than DNR regulations.

**Goal 5: Achieved no net loss of existing natural shoreline.**

**Objective 13: Respond to 100% shoreland regulation inquiries annually.**

**Implementation:**

<b>Objective 13: Respond to 100% shoreland regulation inquiries annually.</b>	<b>Responsible and Participating Agencies</b>	<b>Timeline</b>	<b>Cost Estimate</b>	<b>Benefit</b>	<b>Status</b>
<i><b>Action 39:</b></i> Respond to all shoreland regulation inquiries and ensure proper restitution if violations occur	ES, DNR	2016-2021	\$ 8,000	County Lakes and Natural Stream/Rivers	Ongoing
<i><b>Action 40:</b></i> Provide information and assistance to landowners and lake associations for the development and implementation of shoreline restoration plans and projects.	ES, LA, DNR	2016-2021	\$15,000	County Lakes and Natural Stream/Rivers	Ongoing
<i><b>Action 41:</b></i> Review other county ordinances that have a high number of lakes.	ES	2016-2021	\$3,000	County Lakes	Ongoing
<i><b>Action 42:</b></i> Review local shoreland ordinance looking for ways to improve the protection of shoreland and revise Co ordinances if necessary.	ES, MN DNR	2016-2017	\$5,000	County Lakes and Natural Stream/Rivers	Ongoing

TOTAL: \$ 31,000

**Goal 6: Achieved a net natural shoreline gain through shoreline restorations.**

**Objective 14: Complete up to 40 shoreland improvement projects by 2021.**

**Implementation:**

<b>Objective 14: Complete up to 40 shoreland improvement projects by 2021.</b>	<b>Responsible and Participating Agencies</b>	<b>Timeline</b>	<b>Cost Estimate</b>	<b>Benefit</b>	<b>Status</b>
<i><b>Action 43:</b></i> Educate shoreland owners on shoreland BMPs and the need to restore shoreline to a more natural state through news releases, workshops, presentation to organizations. Ag shoreland buffers are included in this.	ES, LA, DNR, UM Ext	2016-2021	\$10,000	County lakes, rivers and streams	Ongoing
<i><b>Action 44:</b></i> Locate funding for Lake Shoreland Restoration Projects and implement shoreland restoration projects.	LA, ES, SWCD, NRCS	2016-2021	\$4,000	County Lakes, Upper Cannon River and Minnesota River watersheds	Ongoing
<i><b>Action 45:</b></i> Promote shoreland protection through green space planning, Natural Resources Inventory, educational programs and research efforts through publications, presentations, workshop efforts of federal, state and local agencies.	LA, ES, DNR, UM Ext, SWCD, NRCS, USFWS	2016-2021	\$7,000	Lake, river and stream water quality improved	Ongoing
<i><b>Action 46:</b></i> Work to label shoreland projects is GIS.	ES, Co GIS, SWCD	2016-2021	\$5,000	Promotes project awareness	Ongoing

TOTAL: \$26,000

### ***Priority Concern 5: Drinking Water Protection***

It is the responsibility of the plan to promote public health, economic development and community infrastructure by insuring a potable drinking water supply for all residents of our small communities, as well as our individual rural residents. It is necessary that we provide education about the importance of drinking water protection for the general health and wellbeing of the population. Protection of the region's water supply is vital to the continued growth of Le Sueur County and its economic prosperity.

Le Sueur County will promote land use plans, policies, and controls that maintain a sustainable source of high quality groundwater. Land use requests should take in account groundwater vulnerability. Le Sueur County will encourage land uses and activities that do not have the potential to adversely impact the quality or supply of groundwater, or the natural areas that depend on groundwater. Groundwater issues arise in sensitive areas, gravel mining/quarries, wetlands, salvage yards, materials recycling, and turf management in recharge areas and through development and zoning.

The availability of groundwater in Le Sueur County is generally not a problem. In the addition to the sand and gravel aquifers in glacial deposits, there are three major bedrock aquifer systems underlying Le Sueur County. This aquifer system is known as the St Peter-Prairie du Chien system. Aquifer-wide, over 15,000 domestic, municipal, and commercial wells draw water from the Prairie du Chien Group and Jordan Sandstone (U of MN-2002). The metro area municipalities that draw their drinking water from aquifer systems draw from the St. Peter-Prairie du Chien, the Franconia-Ironton-Galesville system and the Mt. Simon-Hinckley system, all of which underlie Le Sueur County. Protection of groundwater from terrorist activity is a new national concern with this revision of the Le Sueur County Water Plan. Though the Public Health Security and Bioterrorism Preparedness and Response Act of 2002, cities greater than 3,300 people need to develop Emergency Response Plans, Le Sueur County understands the need to protect aquifer systems for their residents and to acknowledge that these aquifers supply drinking water to the metropolitan residents. Groundwater protection is of the utmost concern.

Le Sueur County groundwater appropriation permit uses include municipal water supplies, sand and gravel washing, golf courses, fish hatchery, food processing, crop irrigation and animal feedlots. Le Sueur County CH has a delegated well program with the MDH. CH is in charge of new well drillings and well sealings. In May of 2010, CH signed a delegation agreement with MDH Drinking Water Protection. This agreement gives CH the ability to enforce the safe drinking water act. Currently the County has 28 licensed establishments that get their water from a well (transient non community water supplies). These wells are tested annually for bacteria and nitrates.

Mining operations within Le Sueur County have the potential to have significant impacts on groundwater and surface water interconnections. Impacts to water resources, including the groundwater table may be lowered due to dewatering and groundwater exposed to the surface. Below is a map of 2010 groundwater withdrawals by State. Minnesota is one of the top mining states that withdraw a large amount of groundwater (USGS-PA).



**Mining withdrawals, top states, 2010**  
[percentages calculated from unrounded values]

State	Percentage of total withdrawals	Cumulative percentage of total withdrawals
Oklahoma	27%	27%
Texas	19%	46%
Nevada	7%	52%
Minnesota	5%	58%
California	5%	63%

Guidelines that should be considered with mining and extraction policies and the permitting process include water table mapping, spring survey, include provisions in plan to protect groundwater, consider a geologic site evaluation, deposit maps, reclamation plans and a well survey in and around the area of mining.

Groundwater has been monitored through the County well water-testing program, which previously monitored for coliform bacteria and nitrate-nitrogen. Contractors tested Arsenic on all new wells drilled in the County. There is a trend of high nitrate-nitrogen levels in well water on the sand plains on the western end of the County. Le Sueur Co CH is working closely with this issue. The County ensures



proper construction and location of new wells and the sealing of unused wells. Le Sueur County has two DNR Observation Wells that are currently being monitored. The Minnesota River Assessment Project, conducted in the mid 1990's, monitored three groundwater sites in Le Sueur County.

Minnesota Wellhead Protection Rule, Minnesota Rules, Parts 4720.5100 to 4720.5590; Municipalities work with the Minnesota Department of Health and the Wellhead Protection Program. The County provides technical assistance in the preparation of the Wellhead Protection Plan (WHPP) if needed. Cities work directly with the MN Department of Health. The list below was provided by the MDH. If a town is not listed, it has completed its groundwater assessment.

Below is the 2016 Current information received from the MDH.

*Public Water Suppliers are those entities that serve the public. Under the federal Safe Drinking Water Act these are defined as systems having at least 15 service connections or serve at least 25 people per day for 60 days of the year. These systems can further be divided into community and noncommunity. Community systems are those that serve the same people year round such as municipalities, subdivisions on their own wells, and mobile home parks. Noncommunity systems are split into two groups. Nontransient systems serve the same people more than six months per year, but not year-round, for example, a school or business with its own water supply. Transient systems serve the public but not the same individuals for more than six months, for example, a rest area or campground. In Le Sueur County there are eleven community systems, four nontransient public water suppliers, and forty-four transient systems.*

*The Minnesota Department of Health Drinking Water Protection Section implements the Safe Drinking Water in Minnesota. One part of this program is source water protection. MDH staff work with public water suppliers in protecting their source of drinking water whether that be lakes, rivers or groundwater. Specifically related to groundwater, Minnesota has a wellhead protection program where the source aquifers are assessed in regard to their vulnerability to contamination and management strategies are developed by the public water supplies to protect their wells and the groundwater aquifers from contamination. All 59 public water suppliers in Le Sueur County use groundwater for drinking water supplies. Detail for each system in terms of their wells, source aquifer, and source water vulnerability/susceptibility to contaminant from the land surface can be found in the source water assessments. See the MDH website at <http://www.health.state.mn.us/divs/eh/water/swp/swa/>.*

*MDH has been working with community systems for several years to develop detailed wellhead protection plans. Where Drinking Water Supply Management Areas have been delineated, these maps can also be accessed from the source water assessments.*

*This table indicates where the community systems are in the wellhead protection planning process.*

COMMUNITY PUBLIC WATER SUPPLIERS	WELLHEAD PROTECTION PLANNING
Cleveland	Amendment approved in 2015
Elysian	Plan will be completed in 2016
Kasota	Working on amendment to approved 2008 plan
Valley Mobile Home Park	Approved 2008
Kilkenny	Approved 2014
LeCenter	Amendment approved 2015
LeSueur	Plan will be completed in 2016
Montgomery	Approved 2007
New Prague	Approved 2008
Waterville	Approved 2014
Lakes and Links Homeowners Association	not yet phased into wellhead protection program

*The County's role is to review these plans and if needed utilize county authorities and programs to collaborate with the public water suppliers to protect their source aquifer.*

Most municipal wells in the County have had their WHPP completed and are considered non vulnerable. In the Kasota area, Kasota and Valley Mobile Home have multiple vulnerabilities. The County should look at Wellhead Protection Areas in relation to approving permits within these areas that may have an impact on groundwater. Other issues to look at in vulnerable groundwater areas include agricultural nutrient management, inventory septic systems, investigate feedlot sources of pollution, seal unused wells, develop regulations for hazardous waste generation, mining, mining reclamation and require industry transportation emergency plans within the groundwater management area.

Counties around Le Sueur County have had Arsenic-testing clinics and found areas that are high in Arsenic. Though Arsenic can be cyclical, residents should be aware of the quality of their drinking water.

**Goal 7: Protected groundwater quality and quantity.**

**Objective 15: Educate the public on proper construction, maintenance, protection and abandonment of wells and conservation of groundwater through two news releases and/or presentations annually.**

**Implementation:**

<b>Objective 15: Educate the public on proper construction, maintenance, protection and abandonment of wells and conservation of groundwater through two news releases and/or presentations annually</b>	<b>Responsible and Participating Agencies</b>	<b>Timeline</b>	<b>Cost Estimate</b>	<b>Benefit</b>	<b>Status</b>
<i>Action 47:</i> Inform the public on the importance of well construction, maintenance, protection and abandonment and water conservation annually through various media sources.	CH, MDH, NRCS	2016-2021	\$ 2,000	All aquifers	Annual

TOTAL: \$2,000

**Objective 16: Coordinate water-testing clinics for Co residents with wells that would include Nitrate and Arsenic by 2021.**

**Implementation:**

<b>Objective 16: Coordinate water-testing clinics for up to 200 county residents with wells that would include Nitrate and Arsenic by 2021.</b>	<b>Responsible and Participating Agencies</b>	<b>Timeline</b>	<b>Cost Estimate</b>	<b>Benefit</b>	<b>Status</b>
<i>Action 48:</i> Locate funding for a water-testing clinic that includes Nitrate and Arsenic testing throughout the County.	ES, CH, BWSR, MDH	2016-2021	\$8,000	Aquifers	Ongoing

<b>Action 49:</b> Locate funding to purchase well water testing equipment for Co use.	CH, ES	2016-2021	\$1,500	Public Health, CH	Ongoing
<b>Action 50:</b> If funding is not located to purchase equipment, locate equipment that can be utilized by The Co on an as-need basis.	CH, ES	2016-2021	\$500	Public Health	Ongoing
<b>Action 51:</b> Organize and implement the water testing clinics, provide information to residents on Arsenic and Nitrate at the clinics.	ES, CH, MDH, MDA	2016-2021	\$30,000	Aquifers/ Public Health	Ongoing
<b>Action 52:</b> Provide on-demand well water testing in The Co.	CH	2016-2021	\$500	Public Health	Ongoing
<b>Action 53:</b> Compile collected information and enter into GIS Mapping program.	CH, ES	2016-2021	\$5,000	Aquifers	Ongoing
<b>Action 54:</b> Provide outreach on Arsenic following the testing clinic to disseminate information on Arsenic in water supplies.	CH, ES	2016-2021	\$ 1,000	Aquifers/ Public Health	Ongoing date set

TOTAL: \$46,500

<p><b>Objective 17: Gather information about groundwater quantities and interconnection to surface water by 2021.</b></p>
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**Implementation:**

<b>Objective 17: Gather information about groundwater quantities and interconnection to surface water by 2021.</b>	<b>Responsible and Participating Agencies</b>	<b>Timeline</b>	<b>Cost Estimate</b>	<b>Benefit</b>	<b>Status</b>
<i><b>Action 55:</b></i> Continue to monitor existing Observation Wells through the DNR OBWELL Program.	SWCD, DNR, CH, ES	Annually	\$1,000	Aquifers	Ongoing
<i><b>Action 56:</b></i> Identify major groundwater usage within the County through appropriation permits.	DNR, CH, ES	Every 5 years	\$1,000	Aquifers	Ongoing
<i><b>Action 57:</b></i> Work with state agencies on stream flow data and interpretation to determine relationship to groundwater recharge.	ES, DNR, USGS	2013-2015	\$ 10,000	Aquifers	Yearly
<i><b>Action 58:</b></i> Investigate methods for obtaining a Class V Injection Well Inventory within groundwater management zones in wellhead protection areas.	CH, ES, MDH, EPA	2016-2021	\$1,000	Aquifers	Per EPA collected info
<i><b>Action 59:</b></i> Maintain and improve GIS files to assist Le Sueur County with water management efforts and decision making.	Co GIS, CH, ES	2016-2021	\$10,000	County decision making, Water Management	Ongoing
<i><b>Action 60:</b></i> Investigate water quality monitoring sites that are in the vicinity of landfills.	CH, ES, MPCA, DNR	2016-2021	\$8,000	Affected aquifers	Ongoing

***Priority Concern 6: County Drainage System Management***

Agriculture is an important aspect of the landscape in Le Sueur County. Improved drainage systems have enhanced agriculture production; however, unless drainage systems are properly designed, installed, and maintained, they have a real potential to increase sedimentation and nutrient loading to waters in the County. These improved drainage systems also allow water to flow more freely off the land, shortening retention time. By taking a proactive approach towards working with farmers and ranchers to promote continued adoption of conservation practices and improved soil and nutrient management practices, the County can support both productive agricultural lands and clean lakes and streams. Le Sueur County follows drainage law by Stature, Chapter 103 E.

Rural stormwater practices change the hydrology of a watershed. Changes in hydrology can decrease groundwater recharge and reduce retention times, which may result in an increase of overbank flooding, impacts on fish and wildlife habitat and increased rate of stormwater pollutant loads to water resources. Agriculture drainage also has an impact on surface waters that are impaired due to excess nutrients and increase turbidity. Different BMPs (such as buffer strips along drainage ditches, controlled drainage, water retention projects, wetland restorations and sedimentation basins) can be placed on the landscape to reduce these impacts.

**Goal 8: Maintained drainage systems while sustaining agricultural productivity. Improved artificial drainage water quality, as well as understood that the system is part of a watershed.**

**Objective 18: Apply watershed based principles to drainage system management.**

See Objectives 7 and 8 found in Priority Concern 3 “Surface Water Management” this applies to priority concern 6. Objective 7 is to increase the number of water retention BMPs and Objective 8 is to increase the number of wetland restoration contracts in the County to reduce peak flow.

**Implementation:**

<b>Objective 18: Apply watershed based principles to drainage system management.</b>	<b>Responsible and Participating Agencies</b>	<b>Timeline</b>	<b>Cost Estimate</b>	<b>Benefit</b>	<b>Status</b>
<i><b>Action 61:</b></i> Ensure that public drainage systems are operated and maintained in accordance with the State Drainage Law (M.S. Chapter 103D) and other applicable regulations.	CB, SWCD	2016-2021	\$60,000	Countywide	Ongoing
<i><b>Action 62:</b></i> Support drainage research and local demonstration projects that improve water quality.	ES, SWCD,	2016-2021	\$25,000	All Watersheds	Ongoing
<i><b>Action 63:</b></i> Work with County Ditch Authority, the County Highway Department and MNDOT on drainage outlets that drain directly to lakes and rivers that need repair.	ES, CB Ditch Authority, SWCD, Co Highway Department, MNDOT, LA	2016-2021	\$5,000	All Watersheds	Ongoing
<i><b>Action 64:</b></i> Continue work on modernization of Ditch Records.	Ditch Authority	2016-2021	\$50,000	Drainage authority decision making	Ongoing
<i><b>Action 65:</b></i> Educate the public about drainage issues, drainage options to improve water quality, and the request of redetermination of benefits.	ES, SWCD, CB, CRWP, Ag Organizations, Tiling Companies	2016-2021	\$10,000	Minnesota River and Cannon River Watersheds	Ongoing

<b>Action 66:</b> Promote programs that provide financial and technical assistance to install BMPs along drainage systems that will improve water quality.	SWCD, NRCS, ES	2016-2021	\$25,000	County - wide	Ongoing
<b>Action 67:</b> Continue to update GIS mapping of county ditches.	County Ditch Authority	2016-2021	\$5,000	County - wide	Ongoing

TOTAL: \$180,000

**Objective 19: Implement the Buffer and Soil Loss Legislation be working with residents that own land that will be affected from the new regulations.**

**Implementation:**

<b>Objective 19: Implement the Buffer and Soil Loss Legislation be working with residents that own land that will be affected from the new regulations.</b>	<b>Responsible and Participating Agencies</b>	<b>Timeline</b>	<b>Cost Estimate</b>	<b>Benefit</b>	<b>Status</b>
<b>Action 68:</b> Ensure that the Buffer and Soil Loss Legislation is enforced in accordance with State Law (M.S. Chapter 103F) and other applicable regulations	SWCD, NRCS, County Ditch Authority	2016-2021	\$200,000	County - wide	Ongoing
<b>Action 69:</b> Provide assistance to the public regarding new regulations.	SWCD, NRCS, County Ditch Authority	2016-2021	\$15,000	County - wide	Ongoing
<b>Action 70:</b> Provide financial and technical assistance as needed to install BMPs and CRP.	SWCD, NRCS, County Ditch Authority	2016-2021	\$200,000	County - wide	Ongoing



<b>Action 71:</b> Provide enforcement as needed or waive enforcement to the State.	SWCD, NRCS, County Ditch Authority	2016-2021	\$30,000	County - wide	Ongoing
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TOTAL: \$445,000

***Priority Concern 7: Minimize Environmental Risks of Agricultural Impacts to Water Resources.***

Cropland managers shall manage cropping systems to reduce non-point pollution sources. Animal feedlot operations shall manage manure through proper manure storage and land application. Erosion and sedimentation from these operations need to be closely monitored to reduce the levels of nutrients entering our surface water resources. It is a priority for the County to actively work with all producers through education and to utilize conservation programs to ensure proper care and management of these operations. The Feedlot Task Force and Water Plan staff will work together on this concern.

Results from monitoring surface water have shown that agricultural runoff has an impact on water quality. Working with impaired waters in the County also covers reduction of pollutants from reaching surface waters. The future addition of surface waters in Le Sueur County to the impaired waters list will keep the Local Water Plan a working document. Implementation of Priority Concern 7; “Minimize Environmental Risks of agricultural Impacts to Water Resources” will also be a section that will need to be updated and amended as TMDL and WRAPS projects evolve from the assessment stage.

**Goal 9: Reduced water quality issues from agricultural sources to surface water.**

**Objective 20: Secure funding for surface water protection and improvement projects on a watershed basis by 2021.**

**Implementation:**

<b>Objective 20: Secure funding for surface water protection and improvement projects on a watershed basis by 2021.</b>	<b>Responsible and Participating Agencies</b>	<b>Timeline</b>	<b>Cost Estimate</b>	<b>Benefit</b>	<b>Status</b>
<i><b>Action 72:</b></i> Prioritize watersheds, carry out project development for watershed improvement projects, locate funding, implement project.	ES, SWCD, NRCS, FSA, CRWP, LA, MDA,	2016-2021	\$850,000	Upper Cannon, Lower Minnesota, Middle Minnesota	Currently being done
<i><b>Action 73:</b></i> Work with Metropolitan Council, Scott and Rice Counties on a Sand Creek Watershed implementation project.	ES, SWCD, NRCS, FSA, Friends of MN Valley	2016-2021	\$10,000	Sand Creek Watershed	Ongoing
<i><b>Action 74:</b></i> Promote financial assistance programs as well as Federal, State and local cost share funds for conservation projects to agricultural producers.	SWCD, NRCS, ES, LA	2016-2021	\$7,500	All Watersheds	Ongoing
<i><b>Action 75:</b></i> Continue to provide funding cost share programs up to 75% cost share in priority watersheds.	ES, SWCD, NRCS	2016-2021	\$200,000	All Watersheds	Annual
<i><b>Action 76:</b></i> Provide Cost share funds through state and federal grant programs for installation of conservation practices.	ES, SWCD	2016-2021	\$1,000,000	All Watersheds	Ongoing
<i><b>Action 77:</b></i> Utilize local studies/documents to direct and prioritize conservation practices.	ES, SWCD	2016-2021	\$10,000	All Watersheds	Ongoing

TOTAL: \$2,077,500

**Objective 21: Provide education on nutrient management to residents by 2021.**

**Implementation:**

<b>Objective 21: Provide education on nutrient management to residents by 2021.</b>	<b>Responsible and Participating Agencies</b>	<b>Timeline</b>	<b>Cost Estimate</b>	<b>Benefit</b>	<b>Status</b>
<i><b>Action 78:</b></i> Support UM Ext Nutrient Management Projects through assisting with locating funds to provide incentive for following UM Ext guidelines.	UM Ext, ES, SWCD, NRCS	2016-2021	\$60,000	Minnesota River and Cannon River Watersheds, TMDL Lakes	Ongoing
<i><b>Action 79:</b></i> Address manure management issues through the County feedlot program in assessed priority watersheds and countywide.	ES, USDA, MPCA, SWCD, NRCS	2016-2021	\$50,000	Minnesota River and Cannon River Watersheds, TMDL Lakes	Ongoing

TOTAL: \$ 110,000

## ESTIMATED COST SUMMARY TO IMPLEMENT THE LE SUEUR COUNTY WATER MANAGEMENT PLAN

Priority Concern	Goal	Estimated Cost
Priority Concern 1	Goal 1: Protected, restored and improved surface water quality in lakes, rivers and streams	\$3,422,500
Priority Concern 2	Goal 2: All septic systems in Le Sueur County brought into compliance	\$2,090,000
Priority Concern 3	Goal 3: Minimized impacts from runoff of development areas and agricultural land that alter surface water hydrology	\$1,437,000
Priority Concern 3	Goal 4: Diminished runoff issues caused by urban and development stormwater runoff	\$26,000
Priority Concern 4	Goal 5: Achieved no net loss of existing natural shoreline	\$31,000
Priority Concern 4	Goal 6: Achieved a net natural shoreline gain through shoreline restorations	\$26,000
Priority Concern 5	Goal 7: Protected groundwater quality and quantity	\$79,500
Priority Concern 6	Goal 8: Maintained drainage systems while sustaining agricultural productivity as well as improving artificial drainage water quality, understanding the system is part of a larger tributary system	\$625,000
Priority Concern 7	Goal 9: Reduced water quality issues from agricultural sources to surface water	\$2,187,500
<b>Total estimate of funds</b>		<b>\$9,924,500</b>

## APPENDIX A:

### Le Sueur County Information

Le Sueur County is located in south central Minnesota, approximately 60 miles southwest of the Twin Cities and 30 miles northeast of Mankato. The county is 467 square miles or 298,880 acres. As of 2010, the population was estimated at 27,703 with predictions for a 24.1% increase by 2030. Significant development pressure is already occurring as the nearby urban areas exhibit a major influence on Le Sueur County's growth.

Agriculture continues to be the dominant land use. Cultivated land consumes 67% of the county's total land area, of which 84% is corn or soybeans. Harvested cropland acres are on the rise, as is hog production. However, the cattle and poultry industries continue to decline.

Of the County's total land area, 6% or nearly 18,000 acres is surface water. This significant feature is comprised of 75 named lakes, 46 unnamed bodies of water, more than 800 miles of streams and ditches and numerous wetlands. In the Minnesota River Basin, the Lower Minnesota River drains approximately 152,802 acres, while the Middle Minnesota drains 56,880 and the Le Sueur River drains 2,002 acres. In the Mississippi River Basin, the Cannon River drains the remaining 91,676 acres.

There are two designated trout streams within Le Sueur County:

Paul's Creek	TWP 110	R 26	Sections 14, 15
Unnamed Creek	TWP 110	R 26	Sections 10, 11

Adjacent counties:

- [Scott County](#) (north)
- [Rice County](#) (east)
- [Waseca County](#) (south)
- [Blue Earth County](#) (southwest)
- [Nicollet County](#) (west)
- [Sibley County](#) (northwest)

### Topography:

Le Sueur County lies in an area called the Minnesota River Lowland. This topographic trough is an area where several glaciers advanced and retreated during the Pleistocene. This period of glaciations began about 2 million years ago and ended about 10,000 years ago. The most recent glacial advance, the Des Moines lobe of the Late Wisconsin Glaciation, deposited yellowish gray, calcareous, medium textured material across the area that became Le Sueur County.

Recessional moraines in the eastern and southern parts of the county are rolling to steep. The landscape in the eastern part is generally one of circular, flat-topped hills separated by swales and bogs. In the southern moraine area, the hills are more irregular in shape; the knolls and ridges are separated by swales and drainage ways. The remainder of the upland area in the county is nearly level to rolling ground moraines.

The Minnesota River forms the western boundary of the county. The flood plain ranges from about one-eighth to two miles wide. Above the flood plain are well-defined terraces, which rise abruptly above the river. One terrace is about two miles wide and extends south from Kasota to beyond the county line. It is a structural bench of Jordan Sandstone capped with Oneota Dolomite over which lies a thin mantle of soil. This bedrock bench, which rises about 75 feet above the river, also crops out near Ottawa. Sandy terraces are at the higher elevations along the Minnesota River. Those terraces near Le Sueur are three to four miles wide. The result from the late and early post-glacial erosion and deposition associated with the melting of the Des Moines lobe.

Relief in the county is characteristic of that in a glaciated area. The elevation of the till plain ranges from 940 feet to 1,020 feet above sea level. In the moraine area, the hills and ridges rise 50 to 150 feet above the swales and drainage ways. The highest elevation in the county is about 1,180 feet and is located in the southern moraine region.

### **Le Sueur County Lakes:**

- Borer Lake: in [Montgomery Township](#)
- Bossuot Lake: in [Cordova Township](#)
- Clear Lake: in [Lexington Township](#)
- Diamond Lake: in [Kilkenny Township](#)
- Dietz Lake: in [Lanesburgh Township](#)
- Dog Lake: in [Cleveland Township](#)
- Dora Lake: in [Kilkenny Township](#)
- Eggert Lake: in [Lanesburgh Township](#)
- Ely Lake: in [Sharon Township](#)
- Emily Lake: mostly in [Cleveland Township](#), but the southern fifth is in [Washington Township](#)
- Fish Lake: in [Elysian Township](#)
- German Lake: mostly in [Elysian Township](#), but the northern shore extends into [Cordova Township](#)
- Goldsmith Lake: in [Cleveland Township](#)
- Goose Lake: in [Cordova Township](#)
- Goose Lake: there is another Goose Lake in [Waterville Township](#)
- Gorman Lake: in [Cordova Township](#)
- Greenleaf Lake: in [Montgomery Township](#)
- Harkridge Lake: in [Lexington Township](#)
- Huoy Lake: in [Cleveland Township](#)
- Horseshoe Lake: western two thirds is in [Waterville Township](#); the eastern two thirds is in [Rice County](#)
- Lake Emily: in [Kasota Township](#)
- Lake Frances: in [Elysian Township](#)
- Lake Henry: in [Cleveland Township](#)
- Lake Jefferson: the southwestern part is in [Washington Township](#); the northwestern part is in [Cleveland Township](#); the eastern part is in [Elysian Township](#) and the extreme northeastern part just barely reaches into in [Cordova Township](#)
- Lake Mabel: in [Kilkenny Township](#)
- Lake Pepin: in [Lanesburgh Township](#)

- Lake Tustin: in [Elysian Township](#)
- Lake Volney: mostly in [Kilkenny Township](#), but the northern part is in [Montgomery Township](#), the northwestern part is in [Lexington Township](#), and the southwestern part is in [Cordova Township](#)
- Lake Washington: the northeastern two thirds is in [Washington Township](#) and the southwestern third is in [Kasota Township](#)
- Mareks Lake: in [Lexington Township](#)
- Mary Lake: in [Lexington Township](#)
- Mud Lake: in [Cordova Township](#)
- Mud Lake: there is another Mud Lake in [Lanesburgh Township](#)
- Mud Lake: there is a third Mud Lake in [Lexington Township](#)
- North Goldsmith Lake: in [Cleveland Township](#)
- Perch Lake: in [Elysian Township](#)
- Rays Lake: in [Elysian Township](#)
- Rice Lake: in [Montgomery Township](#)
- Roemhildts Lake: in [Elysian Township](#)
- Round Lake: in [Elysian Township](#)
- Sabre Lake: in [Kilkenny Township](#)
- Sakatah Lake: western half is in [Waterville Township](#); the eastern half is in [Rice County](#)
- Sanborn Lake: in [Lanesburgh Township](#)
- Sasse Lake: in [Elysian Township](#)
- Savidge Lake: in [Cleveland Township](#)
- Scotch Lake: in [Cleveland Township](#)
- Shanghai Lake: in [Cordova Township](#)
- Sheas Lake: in [Derrynane Township](#)
- Silver Lake: in [Cleveland Township](#)
- Silver Lake: there is another Silver Lake in [Elysian Township](#)
- Sleepy Eye Lake: in [Cordova Township](#)
- Steele Lake: in [Elysian Township](#)
- Sunfish Lake" almost entirely in [Kilkenny Township](#), but the southern tip extends into [Waterville Township](#)
- Tetonka Lake (start of [Cannon River](#)): in [Waterville Township](#)
- Thomas Lake: in [Derrynane Township](#)
- Tyler Lake: in [Lexington Township](#)

### **Trout Streams (Information provided by DNR Fisheries):**

There are two designated trout streams that are both located in Kasota N Twp, immediately east of St Peter. Paul's Creek was the site of the DNR Fisheries headquarters prior to 1954, when the HQ was moved to its current location near Waterville. Three ponds were excavated in Paul's Creek at some time prior to 1954 as a hatchery initiative. These ponds, commonly called the St Peter trout ponds, are now stocked annually with 5000+ catchable trout. They look like ponds, they are ponds, but in terms of applicable fishing regulations, they are designated as a trout stream. Angling for the stocked fish is extremely popular in April and May. The unnamed stream is not managed for trout, meaning that trout are not stocked in it. There are several streams in Blue Earth and Le Sueur Counties that were designated years ago, possibly because of observed spring activity, that have never actually been

managed for trout. Suitability of these streams for trout stocking is questionable for several reasons. Historically speaking, an elderly fisherman recalled, as a child, catching brook trout from one or both of these streams. If that observation is correct, brook trout were present approximately 100 years ago.

**Cities**

- Cleveland
- Elysian †
- Heidelberg
- Kasota
- Kilkenny
- Le Center
- Le Sueur †
- Montgomery
- New Prague †
- Waterville

**Townships**

- Cleveland Township
- Cordova Township
- Derrynane Township
- Elysian Township
- Kasota Township
- Kilkenny Township
- Lanesburgh Township
- Lexington Township
- Montgomery Township
- Ottawa Township
- Sharon Township
- Tyrone Township
- Washington Township
- Waterville Township

† A small part of these cities extends into another county.

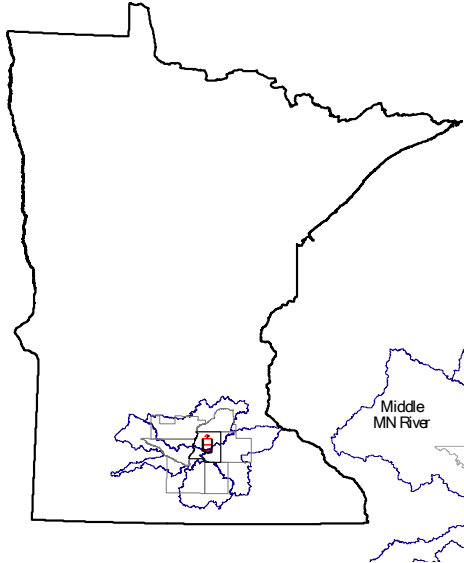
The City of Mankato, which is in Blue Earth County, owns land in Kasota Township and airport zoning for the Mankato Airport overlaps into Le Sueur County.



**APPENDIX B:**

**Maps**

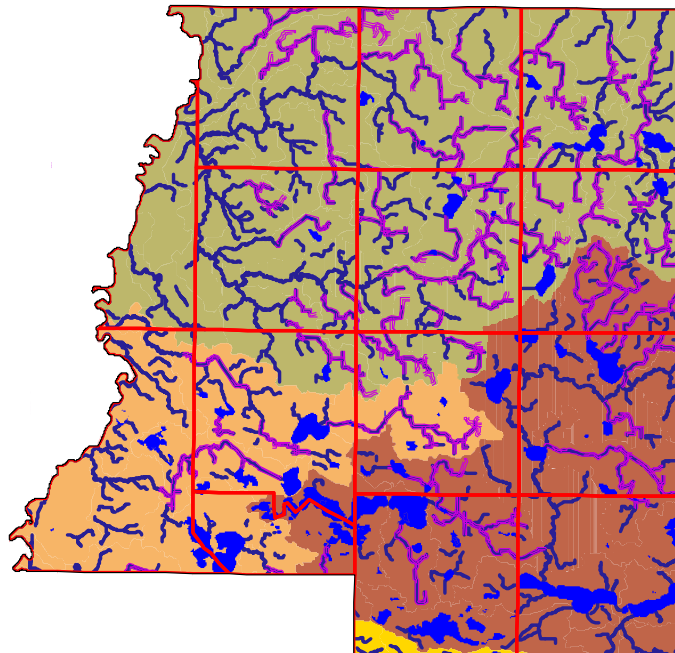
County Location and Major Watersheds



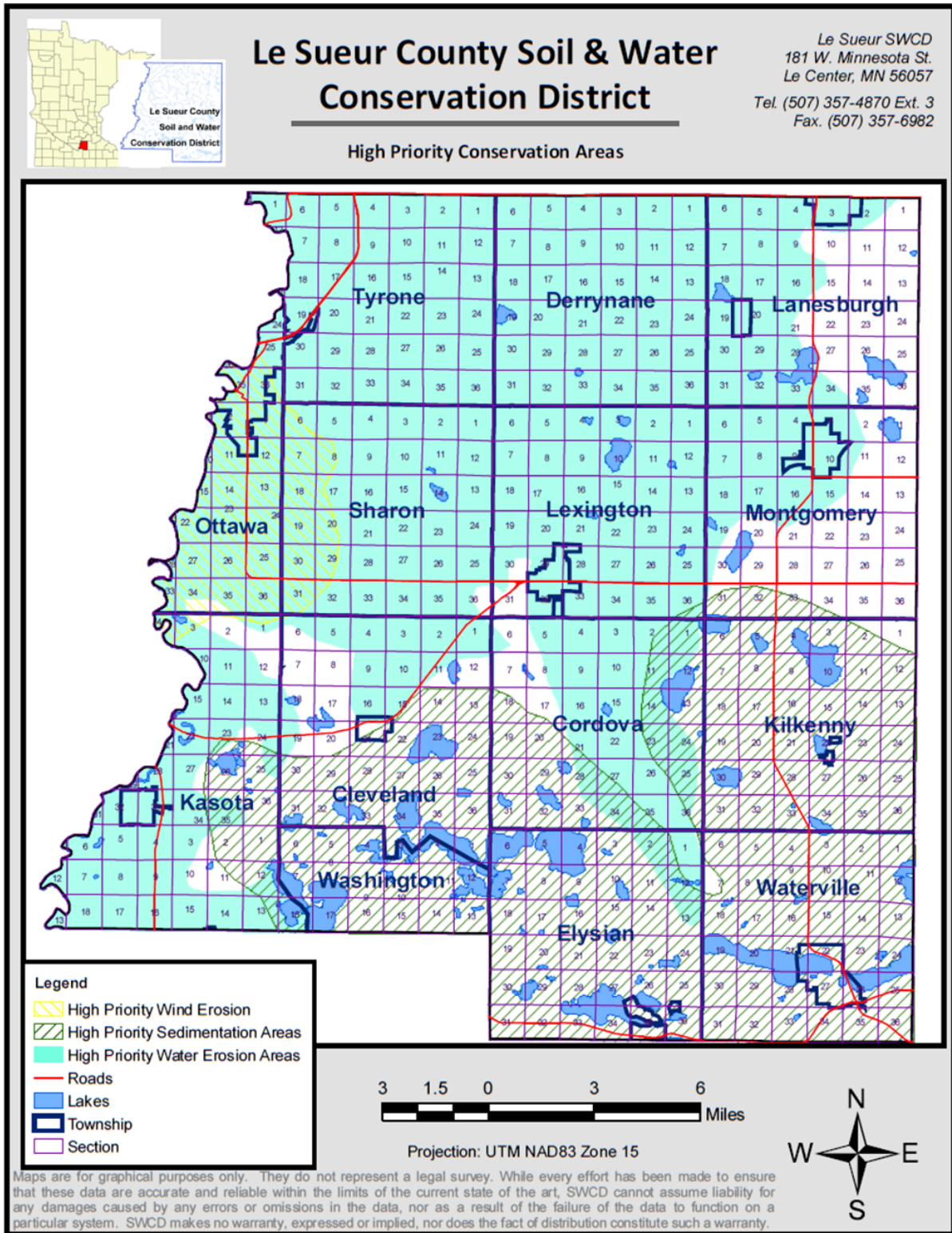
**LE SUEUR COUNTY,  
MINNESOTA**

Le  
County Lakes, Streams and Ditches

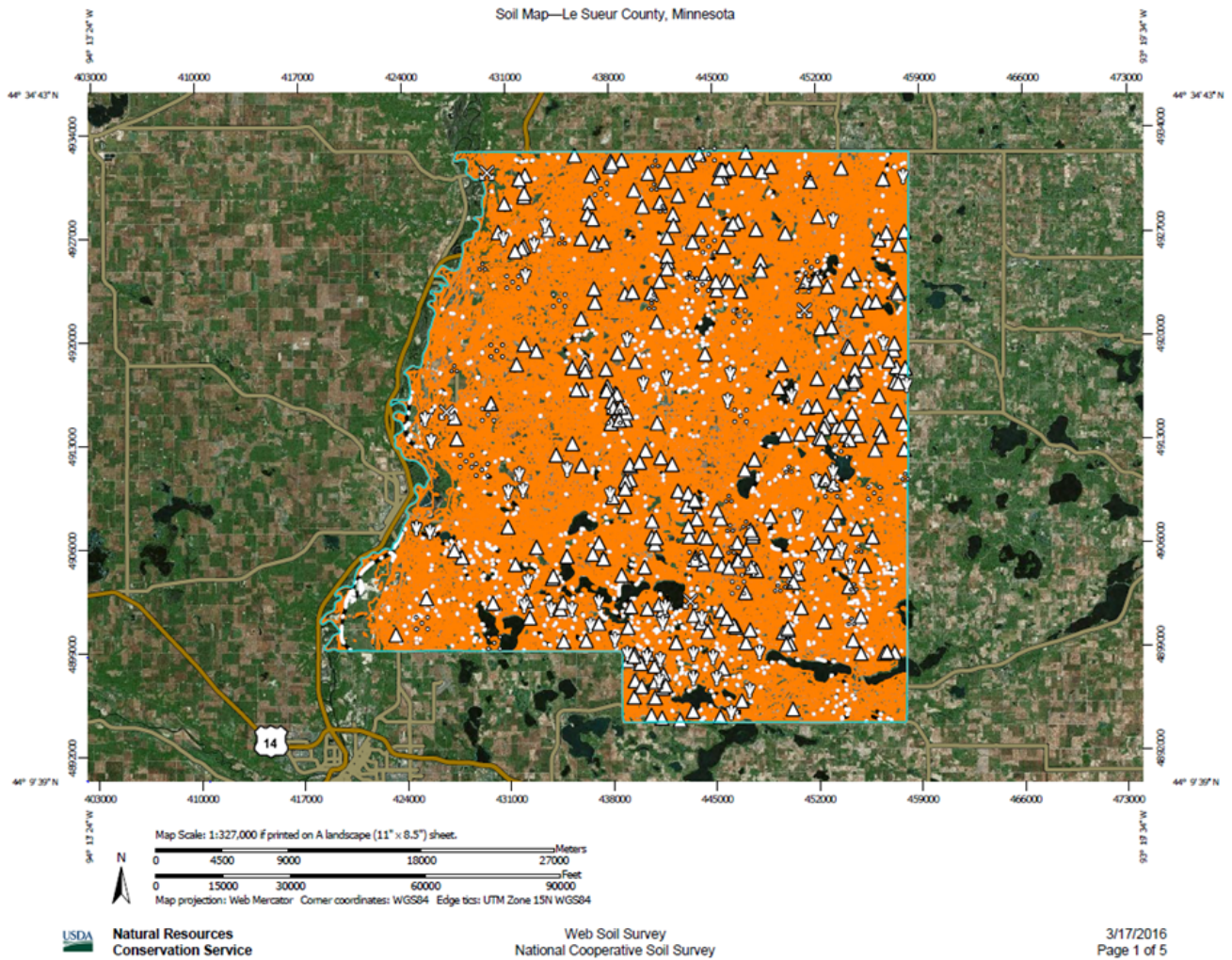
Sueur



Le Sueur County High Priority Conservation Areas



# Le Sueur County Soil Map







## Map Unit Legend

Le Sueur County, Minnesota (MN079)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
8B	Sparta loamy fine sand, 1 to 6 percent slopes	1,229.3	0.4%
8C	Sparta loamy fine sand, 6 to 12 percent slopes	261.7	0.1%
27A	Dickinson sandy loam, 0 to 2 percent slopes	1,157.1	0.4%
27B	Dickinson sandy loam, 2 to 6 percent slopes	1,210.2	0.4%
27C	Dickinson sandy loam, 6 to 12 percent slopes	271.1	0.1%
35	Blue Earth mucky silt loam, 0 to 1 percent slopes	1,037.6	0.3%
39A	Wadena loam, 0 to 2 percent slopes	328.3	0.1%
39B	Wadena loam, 2 to 6 percent slopes	978.5	0.3%
41B	Estherville sandy loam, 2 to 6 percent slopes	2,371.9	0.8%
86	Canisteo clay loam, 0 to 2 percent slopes	5,554.0	1.8%
94B	Terril loam, 2 to 6 percent slopes	1,924.9	0.6%
100B	Copaston loam, 1 to 6 percent slopes	3,619.6	1.2%
106B	Lester loam, 2 to 6 percent slopes	15,211.6	5.0%
106C2	Lester loam, 6 to 10 percent slopes, moderately eroded	21,617.2	7.1%
106D2	Lester loam, 10 to 16 percent slopes, moderately eroded	4,160.5	1.4%
106E	Lester loam, 16 to 22 percent slopes	449.6	0.1%
109	Cordova clay loam, 0 to 2 percent slopes	29,432.0	9.7%
114	Glencoe day loam, 0 to 1 percent slopes	13,095.9	4.3%
123	Dundas silt loam, 0 to 2 percent slopes	3,013.7	1.0%
129	Cylinder loam, 1 to 4 percent slopes	496.2	0.2%
138B	Lerdal clay loam, 2 to 6 percent slopes	11,441.6	3.8%
138C	Lerdal clay loam, 6 to 12 percent slopes	1,165.1	0.4%

Le Sueur County, Minnesota (MN079)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
156A	Fairhaven silt loam, 0 to 2 percent slopes	631.3	0.2%
156B	Fairhaven silt loam, 2 to 6 percent slopes	297.5	0.1%
183	Dassel loam	1,616.3	0.5%
206B	Kasota silt loam, 1 to 6 percent slopes	780.2	0.3%
238B	Kilkenny loam, 2 to 6 percent slopes	7,954.2	2.6%
238C2	Kilkenny clay loam, 6 to 12 percent slopes, eroded	11,020.3	3.6%
238D2	Kilkenny clay loam, 12 to 18 percent slopes, eroded	4,377.5	1.4%
238E	Kilkenny clay loam, 18 to 24 percent slopes	757.3	0.2%
239B	Le Sueur loam, 1 to 3 percent slopes	27,405.5	9.0%
256	Mazaska silty clay loam	8,463.3	2.8%
271	Minneiska fine sandy loam, frequently flooded	921.9	0.3%
317	Oshawa silt loam	1,763.6	0.6%
323	Shields silty clay loam	2,365.6	0.8%
327A	Dickman fine sandy loam, 0 to 2 percent slopes	298.1	0.1%
327B	Dickman fine sandy loam, 2 to 6 percent slopes	452.7	0.1%
329	Chaska silt loam	1,556.7	0.5%
392	Biscay clay loam, 0 to 2 percent slopes	1,073.8	0.4%
414	Hamel loam, 0 to 2 percent slopes	25,052.5	8.3%
463	Minneiska fine sandy loam, occasionally flooded	1,650.6	0.5%
468	Otter silt loam	1,425.9	0.5%
525	Muskego soils, 0 to 1 percent slopes	16,303.8	5.4%
539	Klossner muck, 0 to 1 percent slopes	3,566.4	1.2%
611C	Hawick sandy loam, 6 to 12 percent slopes	777.8	0.3%
611D	Hawick sandy loam, 12 to 18 percent slopes	336.1	0.1%
611F	Hawick sandy loam, 18 to 40 percent slopes	954.5	0.3%
944B	Lester-Estherville complex, 2 to 6 percent slopes	2,300.8	0.8%

Le Sueur County, Minnesota (MN079)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
944C	Lester-Hawick-Storden complex, 6 to 12 percent slopes	4,764.1	1.6%
944D	Lester-Hawick-Storden complex, 12 to 18 percent slopes	2,647.8	0.9%
944F	Lester-Hawick-Storden complex, 18 to 40 percent slopes	1,632.3	0.5%
945B	Lester-Storden loams, 2 to 6 percent slopes	453.0	0.1%
945C	Lester-Storden loams, 6 to 12 percent slopes	2,612.3	0.9%
945D	Lester-Storden loams, 12 to 18 percent slopes	1,633.6	0.5%
945F	Lester-Storden loams, 18 to 40 percent slopes	4,683.1	1.5%
978	Cordova-Rolfe complex, 0 to 2 percent slopes	3,478.4	1.1%
1013	Pits, quarry	364.7	0.1%
1030	Udorthents-Pits, gravel, complex	799.1	0.3%
1057	Caron, Blue Earth, and Palms soils, ponded	4,536.4	1.5%
1855B	Dickinson sandy loam, loamy substratum, 2 to 6 percent slopes	1,008.2	0.3%
1901B	Le Sueur-Lester complex, 1 to 6 percent slopes	13,311.3	4.4%
1962	Mazaska-Rolfe complex	784.1	0.3%
M-W	Water, miscellaneous	335.9	0.1%
W	Water	16,035.8	5.3%
<b>Totals for Area of Interest</b>		<b>303,211.7</b>	<b>100.0%</b>



## APPENDIX C:

### Priority List for Lake Septic Inventory

<u>Lake name/Chain</u>	<u>Status</u>
Lake Washington	Completed
Jefferson German Chain	In Progress
Francis, Rays, Tetonka, Sakatah	In Planning
Greenleaf, Volney, Gorman	Anticipated
Lake Emily	Anticipated
Clear Lake	Anticipated

Other lake inventories will be conducted as parts of township inventories, as development occurs or as deemed necessary by the Co.