

LAKE OF THE WOODS COUNTY
LOCAL WATER MANAGEMENT PLAN
2010 – 2020 UPDATE



Prepared by:

**Lake of the Woods Soil and Water Conservation District
And
Lake of the Woods County Water Plan Task Force Committee**

LAKE OF THE WOODS COUNTY WATER PLAN

2010-2020

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ACKNOWLEDGEMENTS
LAKE OF THE WOODS COUNTY WATER PLAN COMMITTEE

The Lake of the Woods County Water Plan Committee (WPC), a standing committee of local and state agency representatives and private citizens concerned about natural resources, is responsible for overseeing the implementation of the Lake of the Woods County Comprehensive Local Water Management Plan. The WPC was primarily responsible for providing input for the 2010-2020 Lake of the Woods County Water Plan Update. They will meet on an annual basis to review issues and progress of staff activities.

The 2009 committee members are listed below.

Members:

Todd Beckel
Tom Hanson
Marshall Nelson
Russell Hansen
Joel Hanson
City Council Member
Bruce Hasbargen
Chad Severts
Cary Hernandez
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Affiliation

LOW County Commissioner
LOW County Commissioner
SWCD Supervisor
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Baudette City Council
Williams City Council
LOW County Public Works Dept.
Board of Water and Soil Resources
MN Pollution Control Agency
DNR Waters
DNR Fisheries
MN Extension Service
Natural Resources Conservation Service
Tourism Board / Member at Large
Resort Owner / Member at Large
Realtor / Member at Large
Animal Ag Producer / Member at Large
Educator / Member at Large

**LAKE OF THE WOODS COUNTY SOIL AND WATER CONSERVATION
DISTRICT**

The Lake of the Woods Soil and Water Conservation District (SWCD) is the Local Government Unit (LGU) responsible for the local water management plan/program. The SWCD has administered the local water plan and coordinated water plan activities since 2004. Prior to 2004 the Land and Water Planning Office had the responsibility since the plan's beginning in 1992. Many individual volunteers, local, state and federal groups have been active participants during the past couple of decades. Below is a list of current SWCD supervisors, staff and NRCS Staff.

Lake of the Woods SWCD Board Members:

John Sonstegard, Secretary District 1
Russel Hansen, Treasurer District 2
Marshall Nelson, Chair District 3
Roger Krause, Vice-Chair District 4
Scott Pieper, Public Relations District 5

Lake of the Woods SWCD and NRCS Staff:

Josh Stromlund, District Manager
Mike Hirst, Resource Technician
Corryn Trask, Resource Technician
Kelly Voigt, NRCS District Conservationist

I. EXECUTIVE SUMMARY

The purpose of this plan is to address the water related issues across the entire county, regardless of jurisdictional, political, municipal or watershed boundaries. This plan should provide a means of consistency across the county and is consistent with other state, regional or local planning processes. It will look at ground and surface water and those activities that may influence water quality or quantity.

The plan will look specifically at the top five priority concerns that were developed through the scoping process. The concerns identified are on a county-wide basis, however, when necessary or applicable, will be implemented on a watershed level.

This plan was written under the delegated authority of the Lake of the Woods County Board of Commissioners and is designed to cover the period from January, 2010 to January, 2020, with a review and update of the goals and implementation strategy scheduled for 2015. Much progress has been made over the last two decades to protect and restore water resources, and it is the intent of the county water planners to actively continue these efforts.

County Background

Lake of the Woods County is the youngest county in the state of Minnesota. The county was organized on November 28, 1922, when a vote by area residents separated the northern townships from Beltrami County. On January 1, 1923, the county officially began operations at its county seat in Baudette. The county contains the Northwest Angle, the northernmost point of the Lower 48 States. The county also includes the U.S. portions of Lake of the Woods. The county is bordered by two Canadian provinces, Manitoba and Ontario, and three Minnesota counties, Roseau, Beltrami, and Koochiching.

The land area the county occupies was created largely by several periods of glaciation, and was once covered by glacial Lake Agassiz. The county is on the southern edge of the Canadian Shield, is generally flat, sloping very gradually toward the Rainy River and Lake of the Woods, with scattered bedrock outcrops and glacial lake beach deposits. Lake of the Woods is the dominant water related feature, covering 1,679 square miles in Minnesota and Canada. The Lake contains over 14,000 islands.

The county is sparsely populated. With a total land area of approximately 1,297 square miles and a population of 4,095, the county averages only 3.2 people per square mile. Most of the population is concentrated in relatively small areas of the county, mainly near the shoreline of the Rainy River and Lake of the Woods, in Baudette (pop. 952) and Williams (pop. 184), and to a lesser degree along major thoroughfares.

The county has a total area of approximately 1,136,918 acres. The area breakdown is as follows: Lake of the Woods comprises 306,393 acres (27%), wetlands 708,591 (62%) and upland 121,934 (11%). The land ownership within the county is: State or Federally owned 489,820 (59%), Reservation Lands 110,003 (13%), private lands 227,534 (27.5%), and the remaining amount (.5%) is comprised of publicly owned land through the City of Baudette or Lake of the Woods County.

Land use in many instances has been dictated by land suitability and public water access considerations. The number of tourists in the area can range anywhere from 500 to over 1200 people on any given day. In addition to the county's permanent residents, seasonal residences are increasing in number and contribute to development pressures along Lake of the Woods, the Rainy River, and its tributaries. In some areas in the county, land use has shifted from marginally productive agricultural to recreational. Even the vast acreage of wetlands, peat bogs, and areas of non-merchantable timber are utilized for a varied number of recreational uses including hunting and snowmobiling. Wetlands and other undeveloped areas also protect water quality in the County's many streams and rivers, as well as Lake of the Woods.

The main industries of the area are tourism, forestry and agriculture. Tourism revolves around the Lake of the Woods fishery, hence Lake of the Woods County has a vested interest in water quality. The forested lands of the County are a major supplier of pulp wood to several local sawmills of economic importance to county residents and the Boise Inc paper mill in International Falls, MN, 70 miles to the east. Agricultural lands contribute substantially to the economic stability of the County. Currently there are less than 40 registered feedlots in the county. Small grains, soybeans, grass seed, and oil seed are the main agricultural products for this area.

Water Plan Strategies

The primary focus for the Lake of the Woods County Water Plan is to identify existing and potential problems, and then utilize opportunities for the protection, management, and development of land and water resources. The plan, through the planning process, develops objectives to carry out action plans to promote sound natural resource management. The original water plan was adopted in 1992, revised in 1997 and again in 2002. This revision will be the forth generation and will be completed by 2010.

The major strategic goals of this water plan will be to assist local units of government, landowners and other interested groups with making wise land and water resource decisions regarding potential impacts to water quality as a result of land use changes. In conjunction with the priorities of the water plan, many of the strategies include the use of new technologies like geographical information systems and LIDAR to assist in making better natural resource management decisions. This additional information will provide a means to refine the focus of future priorities to answer questions regarding the impact to surface waters from land and water use changes.

Lake of the Woods County Water Plan Accomplishments, 2003-2010

1. Installation of more than a dozen shoreline stabilization and protection projects utilizing the State Cost Share Program and other funds.
2. Establishment of a water level monitoring gauge at Morris Point.
3. Active participation with the Rainy River Basin Planning Process.
4. Revision of the County Drainage Inventory Book.
5. Creation of a County Ditch Maintenance Policy.
6. Over 10,000 acres enrolled in EQIP for the following practices:
field borders, buffer strips, riparian CRP, and residue management.
7. Creation of Wheeler's Point Sanitary District.
8. Completion of SE LOW TMDL and continuation of monitoring activities.
9. Completion of the Baudette River TMDL and continuation of monitoring activities.
10. Creation of a River Watch Program in cooperation with Lake of the Woods School.
11. Completion of 7 Feedlot Water Quality Management Grants.
12. Completion of 4 Drought Disaster Assistance Projects.
13. Completion of a level 2 feedlot inventory, containing information including: location, animal numbers, open lots, manure storage pits, and distance to waters.
14. Administration of countywide low-interest (AgBMP) septic upgrade loan program.
15. Support and utilization of the Joint Powers Board Engineering Assistance Program.
16. Assist the University of MN in a cooperative study of paleolimnology on Zippel Bay.
17. Administration of the Wetland Conservation Act.
18. Participated as a Delegated Feedlot County through MPCA's Feedlot Program.
19. Collection of culvert inventory data to assist with a county-wide stormwater management plan.
20. Development of an annual well water testing clinic.
21. Completed 21 abandoned well sealing contracts.
22. Administration of the abandoned well sealing program.
23. Development of the Bostic Watershed Protection Project.

II. IMPLEMENTATION PLAN

The development of the Lake of the Wood County Water Plan addresses the local priority concerns. Actions outlined in the implementation plan will be accomplished by utilizing multiple funding sources. These funding sources include, but are not limited to: Water Plan Funding, the newly enacted Clean Water Legacy Act, the 2008 Constitutional Amendment, grants and partnerships. These newly available funding sources recognize the importance of Minnesota's water resources and will provide opportunities for water quality/quantity related enhancement, protection, and prevention projects. The WPC is committed to help define the role of the Clean Water Legacy and the Constitutional Amendment with the protection of Lake of the Woods County's natural resources.

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1. Erosion and Sedimentation:

Erosion and sedimentation in ditches, watercourses, and wetlands has been a major concern for Lake of the Woods County. The county has an extremely flat landscape that was ditched extensively in the early 1900's for agricultural production. Many of the ditch systems within the county have had little or no maintenance or Best Management Practices installed. Only two ditches in the county assess benefits. In the Rapid River Watershed, historical straightening of the river and several abandoned ditches contribute to increased flashiness of the watershed resulting in increased erosion of streambanks.

Recently, in 2002, a major flood event eroded ditches, drainages, and shoreline while depositing sediment in watercourses, impeding both drainage and navigability of waterways. Many of the resorts located on tributaries to Lake of the Woods continually dredge to gain access to the channel.

Lake of the Woods is a reservoir. Dams in International Falls and Kenora control the inflow and outflow of water. Since 1916 the lake has been controlled at approximately 3 to 2.5 feet higher than natural levels. Rainfall events, spring runoff, and controlled higher water levels may significantly impact the erosion on lakeshore. The southern shore of Lake of the Woods including Pine and Curry Islands has endured extensive erosion and loss of shoreline.

Factors to Gauge Erosion and Sedimentation:

Loss of shoreline / Historic aerial photos
Navigability of waterways / Bathymetry
Continuous dredging and ditch maintenance projects
Flood events
Water clarity

Objective A: Lakeshore

Reduce shoreline erosion on Lake of the Woods. Protect water quality, the Lake of the Woods fishery, and the local economy.

Actions to be taken:

1. Protect and/or restore Pine and Currys Islands by addressing the erosion problems with cooperation with the DNR, Lake of the Woods Sustainability Foundation, NRCS Watershed staff, and the Erosion Control Work Group.
2. Protect Garden Island from additional shoreline erosion.
3. SWCD and County will request that the DNR address the problems on Pine, Currys, and Garden Islands, by initiating conversations with DNR staff.
4. SWCD will inventory and prioritize shoreline erosion problems on public and private land on the Minnesota portion of Lake of the Woods utilizing GPS equipment.
5. SWCD will educate landowners by promoting proper shoreline protection methods via implementation projects and workshops. The SWCD will provide technical and engineering assistance for lakeshore protection projects.
6. SWCD will utilize existing cost-share programs to assist landowners in completing high priority lakeshore protection projects, and attempt to secure additional cost-share funding from special project grants, other grants, and other government sources.

7. DNR Fisheries will complete groin mapping on southern shore and SHOAL mapping at Morris Point area and monitor changes over time.
8. Ensure the harbors constructed by the USACE are maintained through the USACE Operational and Maintenance Plans for the following harbors: Warroad, Zippel Bay, Baudette, and Angle Inlet.

Potential Funding Sources: SWCD Cost-Share and Special Project Funding, MN Legislature, 319 Grant, Clean Water Legacy, 2008 Constitutional Amendment.

Implementation Responsibility: *Lead:* SWCD, DNR, USACE
Supporting: LWPO, JPB

Objective B: Lake Level Management

Advocate a change in the management plan of Lake of the Woods, taking into consideration local priorities and the effects of sustained high water levels on the south end of the lake.

Actions to be taken:

1. Establish a real time updated permanent water level monitoring gauge in the Morris Point area to quantify lake level variation on Lake of the Woods.
2. Form a local interest group to provide input to the Lake of the Woods Control Board.
3. Enhance communications and promote improved coordination with dam operators, IJC, and FERC by attending meetings.
4. Explore other options for lowering water levels and reducing erosion by compiling and reviewing existing data.
5. Continue to actively participate in the Rainy River Basin Planning process, coordination, and forecasting.
6. Review the effectiveness, fairness and efficiency of the “1925 Lake of the Woods Convention and Protocol,” which set up the LOW Control Board in its present form.

Potential Funding Sources: USACE, IJC, NRBG, DNR, MPCA, Challenge Grant.

Implementation Responsibility: *Lead:* SWCD, LWPO
Supporting: LOW County Board, DNR, MPCA

Objective C: Rivers

Reduce erosion and sedimentation through education and project implementation. Continue sedimentation investigation and implementation of corrective measures on Zippel Bay, Bostic Bay and other tributaries to the Rainy River and Lake of the Woods.

Actions to be taken:

1. NRCS will increase EQIP projects by 50% or 5,000 acres that implement filter strips, use exclusion, buffer strips, and residue management to reduce sedimentation from agricultural lands.
2. NRCS will administer federal programs utilizing local priorities through the EQIP Local Work Group.
3. SWCD and NRCS will provide education, workshops, and cost-share programs to assist landowners in completing stream bank stabilization projects.

4. SWCD will implement their stream bank bioengineering/buffer workshops and demonstration projects.
5. SWCD will inventory and prioritize shoreline erosion problems on public and private land utilizing GPS equipment.
6. SWCD will utilize the University of Minnesota's *Multi-core investigation of a lotic bay of Lake of the Woods impacted by cultural development* study conducted on Zippel Bay to implement solutions for watershed erosion and sedimentation problems outline in the study.
7. SWCD will implement restoration projects on bays that have received increased sedimentation after upstream erosion problems have been corrected.

Potential Funding Sources: SWCD Cost Share, Challenge Grant, LOW County, NRBG, EQIP, 319 Grant, Clean Water Legacy, 2008 Constitutional Amendment.

Implementation Responsibility: *Lead:* SWCD, NRCS

Supporting: LOW MIS-GIS, LOW Public Works Dept.

Objective D: Ditch Systems

Reduce erosion and sedimentation in ditches, watercourses, and wetlands to decrease drainage maintenance costs and frequency.

Actions to be taken:

1. PWD will complete an inventory of other public and select private ditch systems and incorporate with previously completed inventory of legal ditch systems. The inventory will assist in determining watershed areas and in developing a county wide stormwater management plan.
2. PWD and SWCD will complete a culvert inventory which will be used in sizing new and replacement culverts to help determine watershed boundaries, and in developing a county wide stormwater management plan.
3. PWD will develop a stormwater management plan that will utilize previously completed inventories. The stormwater management plan will incorporate a maintenance program, BMP's, and funding mechanisms to ensure efficient drainage and addressing flood, water quality, and erosion control.
4. SWCD and NRCS will educate landowners and government officials on BMP's for maintenance of ditches.
5. PWD will utilize BMP's within Ditch Maintenance Policies and Procedures.
6. PWD will educate landowners and agriculture producers on the existence and extents of right-of-ways to assist in limiting disturbance of vegetation.
7. SWCD and NRCS will educate landowners and government officials on conservation practices that can be used along ditches, watercourses and wetlands.
8. SWCD, NRCS, and the PWD will encourage landowners to utilize sidewater inlet controls, buffer strips and other BMP's along county and legal ditch systems.
9. SWCD will monitor priority watersheds to document the need for erosion control measures to prevent sedimentation in rivers and bays
10. PWD will work to maintain funding for local beaver control efforts to prevent road damage and erosion, to prevent damages to timber and farming industries, and maintain fish migration connectivity.
11. SWCD and LWPO will complete the Bostic Creek Challenge Grant addressing concerns in the Bostic Watershed, and implement the recommendations outlined in the final report.

12. Reconstruct JD 28 using a two stage ditch design developed by the JPB engineer, acquire additional easement, and establish cattle exclusion fencing.
13. Execute the Bostic / Zippel Watershed Assessment Project Work Plan developed by the NRCS Water Resource Staff.

Potential Funding Sources: Challenge Grant, LOW County, NRBG, EQIP, 319 Grant, Clean Water Legacy, MPCA, 2008 Constitutional Amendment.

Implementation Responsibility: *Lead:* LOW Public Works Dept., SWCD, NRCS
Supporting: LWPO, LOW MIS-GIS, DNR, MPCA, JPB

Objective E: Flood Damage Reduction

Reduce economic and environmental damages caused by high precipitation events and overland flooding. Inventory flooding problems, research and summarize hydrologic data, and determine corrective actions.

Actions to be taken:

1. PWD will re-determine watershed boundaries utilizing culvert and ditch inventories. The re-determination will assist in sizing culverts and in developing a County wide stormwater management plan.
2. PWD will develop a stormwater management plan that will utilize previously completed inventories. The stormwater management plan will incorporate a maintenance program, BMP's, and funding mechanisms to ensure efficient drainage and addressing flood, water quality, and erosion control.
3. PWD will identify specific locations and sub-watersheds with a history or potential for flooding and related damage.
4. SWCD will review and organize existing site data to perform hydrologic/hydraulic modeling for specific rainfall events to assist PWD with drainage management.
5. PWD will identify and implement necessary improvements in drainage infrastructure.
6. SWCD will identify locations in the following watersheds for potential flood-water retention project areas.
 - a. Zippel Watershed
 - b. Bostic Creek / Canfield Creek Watershed
 - c. All other tributaries to the Rainy River and Lake of the Woods
 - d. Ditches on public lands
7. SWCD will promote land retirement programs where applicable.
8. LWPO will review and update applicable zoning ordinances taking into consideration areas with known flooding problems.
9. LWPO will acquire LIDAR of the entire county to assist in locating areas prone to flooding and to help assist with remediation projects.

Potential Funding Sources: LOW County, Challenge Grant, 319 Grant, Clean Water Legacy, DNR Waters FDR Grant, 2008 Constitutional Amendment.

Implementation Responsibility: *Lead:* LOW Public Works Dept., SWCD, LWPO
Supporting: HRDC, LOW MIS-GIS, MPCA

Objective F: Buffers and Riparian Corridors

Utilize buffers and riparian corridors to reduce erosion and provide wildlife benefit.

Actions to be taken:

1. NRCS will inventory areas eligible for filter strips, field borders or riparian buffers utilizing GIS to target priority watersheds identified by the local work group.
2. NRCS will prioritize sites with highest erosion rates (using RUSLE2 Soil Loss Equation), water quality improvement potential, and public value.
3. NRCS will contact landowners to inform them on the importance of buffers, their functions, and the availability of CRP and other possible funding sources.
4. SWCD and NRCS will identify alternative buffer strip options, including vegetation that may provide a cash crop.
5. SWCD and NRCS will develop a local buffer strip program emphasizing permanent buffer strips and including the option of subsidizing CRP payment rates in an effort to attract more landowners to the program.
6. SWCD and NRCS will identify and contact qualifying landowners to encourage buffer installation.
7. Re-establish a riparian corridor along the south shore of Lake of the Woods from Long Point west.
8. Establish riparian corridors and buffers along intermittent or continuous flow rivers and streams.
9. Restore a channelized portion of Bostic Creek to a natural channel.

Potential Funding Sources: WRP, EQIP, CRP, RIM, LCCMR, USACE Section 206 Grant, NRBG, LOW County, 2008 Constitutional Amendment.

Implementation Responsibility: *Lead:* NRCS

Supporting: SWCD, Extension, DNR, MPCA, LOW
MIS-GIS

2. Land Use Management:

Lake of the Woods County has started to experience more development pressures from recreational and seasonal residents. Current patterns of development are shifting further north in the state. Lake of the Woods County, having Lake of the Woods, Rainy River and all of their tributaries, is definitely experiencing this development pressure. Most of the developable property along the Rainy River and Lake of the Woods has been developed. Shoreland and non-shoreland property that was deemed marginal in the past is now being sought after for potential future development. Large tracts of land that have been held by various private entities are now being subdivided and sold into much smaller land holdings. This action increases the difficulty of conducting sound land management practices.

The water level management on Lake of the Woods is of great importance to the natural resources of the area. Recent management of the dams at Kenora may be a major contributing factor to increased shoreline erosion and loss of endangered species habitat on Lake of the Woods.

This section identifies some of the most pressing land use and development concerns and outlines various actions that can be taken to address them. The overall goal of this priority concern is to work with local, state, provincial, and federal government officials, the public, and staff to plan for future land use pressures while preserving and enhancing water quality and natural resources.

Factors impacting local water resources:

Development pressures

Wetlands

Managed lake levels

Degradation of high valued natural resources

Objective A: Development Pressures & Shoreland Impacts

Improve land use planning efforts in order to reduce future economic and environmental impacts from high water events, failing septic systems, and shoreline erosion.

Actions to be taken:

1. LWPO will review shoreland development patterns and current shoreland zoning requirements, including building and septic system setbacks, minimum lot size, floodplain requirements, etc.
2. LWPO will encourage increased setbacks and other alternatives for new developments in an effort to reduce impacts that lead to shoreline erosion.
3. LWPO will develop strategies to assist the Planning Commission, Board of Adjustment, and County Board with making sound resource decisions.

Potential Funding Sources: LOW County, NW MN Foundation, HRDC.

Implementation Responsibility: *Lead:* LWPO

Supporting: DNR, SWCD, HRDC, LOW County

Objective B: Ordinance Updates and Revisions

Implement programs that expand site inspections, identify areas weak in enforcement, and implement common interest community regulations to achieve better regulatory compliance.

Actions to be taken:

1. LWPO will expand on-site inspections for compliance with zoning ordinances and shoreland regulations.
2. LWPO will amend existing ordinances to regulate common interest communities.
3. LWPO will identify areas of concern where noncompliance may be threatening water resources.
4. LWPO will review and update existing local ordinances where needed.
5. LWPO and SWCD will assess the need for a county feedlot ordinance. If needed an ordinance will be developed for the County to adopt.
6. LWPO will revise ordinances to increase the size of newly created lots to accommodate for adequate development space for landowners and two standard septic sites.
7. LWPO will encourage the county board to adopt ordinance language that supports septic inspections mandatory upon sale or transfer of property.

Funding Sources: NRBG, Inspection fees, LOW County, NW MN Foundation.

Implementation Responsibility: *Lead:* LWPO

Supporting: DNR, SWCD, HRDC, MPCA

Objective C: Increased Utilization of GIS as a Resource Management Tool

Expand existing GIS capabilities and utilization of GIS data in Lake of the Woods County.

Actions to be taken:

1. Continue shoreland monumentation and parcel mapping.
2. Conduct a culvert inventory and reassessment of minor watersheds.
3. Determine additional data needs and collect/acquire data layers.
4. Make data layers available for all resource management professionals in LOW County.
5. LWPO will utilize GIS to record permit and project locations and data.
6. Utilize GIS in making land use planning decisions.
7. Preserving historical photography with GIS.
8. SWCD and NRCS will utilize GIS for Cost Share Projects.

Funding Sources: LOW County, NRBG, 319 Grant, Clean Water Legacy, 2008 Constitutional Amendment.

Implementation Responsibility: *Lead:* LOW MIS-GIS, LWPO
Supporting: HRDC, SWCD, NRCS, PWD

Objective D: Protect Unique Features and Areas of High Public Value to Enhance the County's Natural Resources and Economic Viability

Purchase permanent conservation easements in riparian and other high priority areas.

Actions to be taken:

1. SWCD and NRCS will inventory and prioritize areas eligible for easements.
2. SWCD will advocate for funding from the state in order to utilize existing programs such as RIM, WRP, and other easement programs in Lake of the Woods County.
3. SWCD will develop a local program, complimenting existing programs where possible, and administer with the local buffer strip program.
4. Prevent outside interests from regulating/utilizing the water flowing into and out of Lake of the Woods County if deemed detrimental to the natural resources of the county.

Potential Funding Sources: LOW County, NRBG, RIM, WRP, State Wetland Banking Program, Clean Water Legacy, 2008 Constitutional Amendment.

Implementation Responsibility: *Lead:* LWPO
Supporting: NRCS, SWCD, DNR, HRDC

Objective E: Recreational Management Plan

To improve management of the natural resources of Lake of the Woods County and increase recreational opportunities.

Actions to be taken:

1. Organize a stakeholder group.
2. Develop plan and acquire funding.
3. Develop additional public landings and recreation areas within the county according to the recreational management plan.
4. Utilize the Highway 11 Committee to enhance the natural resources along the Rainy River corridor.

5. Organize an ATV Stakeholder Group to assist with trail mapping, inventories, and maintenance.

Potential Funding Sources: DNR, Challenge Grant, 2008 Constitutional Amendment.

Implementation Responsibility: *Lead:* DNR Trails and Waterways,
Supporting: LWPO, Extension, SWCD, Tourism
Office, Drifters, ATV clubs

3. Sewage Treatment Systems and Other Potential Sources of Water Contamination:

This priority concern will seek to improve sewage treatment, protect surface and groundwater, protect public health, and promote planned development. Septic systems can have a major influence on surface and ground water quality. Properly functioning systems can prevent degradation of surrounding water resources. Conversely, improperly installed, inadequate, non compliant systems pose health and environmental risks. Excess nutrients in surface water can lead to the promotion of algae growth, poorer water quality, and can pose a health risk to recreational users. Groundwater can also be affected, specifically in areas where shallow wells are present.

Lake of the Woods was placed on the Impaired Waters List in 2008 due to nutrient overenrichment with the primary stressor being phosphorus. The Total Maximum Daily Load (TMDL) process is scheduled to start in 2010 with the final report scheduled for 2016. This priority will also seek to prevent new phosphorus loading and reduction of current phosphorus loading to the lake in order to prevent further degradation of the lake's water quality prior to completion of the TMDL.

Factors to Consider:

Excess nutrients and bacteria
Impacts to ground and surface water quality

Objective A: Wheeler's Point Community System

Utilize Wheeler's Point Sanitary District (WPSD) to develop a community sewer system for the Wheeler's Point area.

Actions to be taken:

1. Conduct median household income survey in the Wheeler's Point Area to assist in project development and feasibility.
2. Utilize the conducted feasibility study of established WPSD to move to implementation.
3. Expand the boundaries of the Wheeler's Point Sanitary District.
4. Wheeler's Point Sanitary District will seek to obtain funding.
5. Wheeler's Point Sanitary District will install the system.

Potential Funding Sources: USDA Rural Development Grant, WIF, ACOE 569, PFA, AgBMP.

Implementation Responsibility: *Lead:* Wheeler's Point Sanitary District

Supporting: LWPO, Midwest Assistance Program,
MPCA, SWCD

Objective B: Areas of Concern (Rocky Point, Birch Beach, Sandy Shores, Bostic Creek, & the Islands)

Research need and potential for community sewer systems at Rocky Point, Bostic Creek, and other areas of concern, including future developments.

Actions to be taken:

1. LWPO will identify other areas of the county currently in need of community sewer systems through required site inspections for permits through the LWPO.
2. LWPO will hold informational meetings with landowners in the areas that have been identified as possible areas for a community system.
3. LWPO will improve land use planning efforts to identify future development patterns and promote community system in areas that would be appropriate.
4. Conduct feasibility studies, obtain funding, and develop community systems where applicable.
5. LWPO will research and promote cluster/community system designs that may be applicable to future or current developments/plats in the county.
6. LWPO will actively promote utilization of these systems where a surface or ground water pollution potential exists.
7. LWPO will research feasibility of performance septic systems.

Potential Funding Sources: USDA Rural Development Grant, WIF, ACOE 569, PFA, AgBMP.

Implementation Responsibility: *Lead:* LWPO

Supporting: Midwest Assistance Program, MPCA,
Extension, SWCD

Objective C: Other Pollution Risks

Continue comprehensive program to inventory substandard on-site sewage treatment systems that can pollute ground and surface water.

Actions to be taken:

1. LWPO will implement education program on ordinance updates and new rules.
2. LWPO will complete and maintain inventory of non-conforming on-site sewage systems.
3. LWPO will investigate funding mechanisms that may aid in upgrading systems and continue to utilize the SWCD's AgBMP loans as a funding source.
4. LWPO will select enforcement procedures.

Potential Funding Sources: LOW County general fund or permit and inspection fees, AgBMP, MPCA, Clean Water Legacy, 2008 Constitutional Amendment, AgBMP.

Implementation Responsibility: *Lead:* LWPO

Supporting: SWCD

4. Water Quality:

Water Quality for Lake of the Woods County is very important. Surface water quality relates to both lakes and streams and varies by watershed conditions. Watershed conditions are negatively affected by excess storm water, loss of wetlands, erosion, sedimentation, poor agriculture practices, and detrimental land use practices. The effects of climate change on water quality are still to be determined. Determining how climate change effects streams and lakes within the county will likely be a priority throughout the 10 year cycle of this plan.

The Lake of the Woods SWCD has been monitoring priority streams in the county and has also assisted the MPCA with monitoring on Lake of the Woods. The data collected is utilized to prioritize projects and priority areas within the county. Recently water monitoring data was used to place Lake of the Woods on the 2008 impaired waters list under Section 303(d) of the Clean Water Act for excess nutrients.

Maintaining and protecting the quality of Lake of the Woods County's groundwater resources is essential to provide long term potable water for human and livestock consumption as well as providing for a healthy natural environment.

Lake of the Woods County maintains 80% of its pre-settlement wetlands. The county's wetlands are important to water quality and quantity. Over 85% of the land in the county is inventoried as wetland. Maintaining and enhancing wetlands, while balancing development pressures, is extremely difficult. Utilizing local values in maintaining and enhancing wetlands is important.

Combating the spread of invasive species through education and action has become increasingly vital as the county continues to witness the arrival of new terrestrial and aquatic invaders. The Spiny Water Flea, Purple Loosestrife, European Buckthorn, and Spotted Knapweed are just a handful of species that threaten the area. Although invasives are nothing new to the area, there has been an increase in concern as individuals become more aware of the harm they cause. Invasive species have far reaching impacts that are both ecological and economical, and pose threats to the three main industries of the area: agriculture, tourism and forestry.

Factors to Gauge Water Quality:

- Water chemistry and clarity
- Nutrient levels
- Erosion / Sedimentation
- Public health
- Invasive species

Objective A: Surface Water

Continue to monitor water quality within the county to help prioritize areas for conservation programs, education efforts, and/or other implementation projects to maintain or improve water quality in the county.

Actions to be taken:

1. SWCD will continue to assist MPCA on the Baudette Estuary TMDL Study.

2. SWCD will continue to assist MPCA on the Williams Creek TMDL with data collection for the delisting process.
3. SWCD will assist other agencies with TMDL studies and implementation projects, including the Lake of the Woods TMDL.
4. SWCD will continue coordination with the International Joint Commission and its Rainy River Basin Boards, Lake of the Woods Sustainability Foundation, Environment Canada, Ontario Ministry of Environment, and other Canadian agencies to address multinational water quality concerns.
5. SWCD will continue to implement the Lake of the Woods County Water Quality Monitoring Plan and produce an annual monitoring report and publish the results for the public on the SWCD Website.
6. SWCD will coordinate with MPCA to enter all SWCD water monitoring data into STORET or the new H₂info system.
7. SWCD will encourage the IJC to establish a pollution board on Lake of the Woods.
8. SWCD will continue to work with feedlot owners utilizing the MPCA's Delegated Feedlot Program and available state cost share programs to assist livestock producers into becoming compliant with MN State Water Quality Standards.
9. SWCD will monitor down stream of feedlot cost share sites to determine effectiveness of feedlot projects.
10. SWCD will initiate water quality investigations on the north and south branches of the Rapid River, and the Bostic and Baudette minor watersheds.
11. Determine if human waste (feces and urine) from anglers during peak use times (summer fishing and winter fishing) is a major concern for water quality for Lake of the Woods. Utilize existing agencies to implement strategies to educate and regulate these activities.

Potential Funding Sources: NRBG, Challenge Grant, CWP Grant, 319 Grant, Clean Water Legacy, BWSR Feedlot Water Quality Management Grant Cost Share, AgBMP, MPCA, 2008 Constitutional Amendment.

Implementation Responsibility: *Lead:* SWCD, LWPO

Supporting: MPCA, Extension, DNR

Objective B: Groundwater

Protect the quality of the County's groundwater resources by preventing contamination of groundwater aquifers. Identify and protect public water supply aquifers by developing wellhead protection plans for all public water supply systems in the County.

Actions to be taken:

1. SWCD and NRCS will continue their abandoned well sealing cost-share programs, with wellhead and source water protection areas receiving a higher priority.
2. SWCD will hold and sponsor an annual well water testing clinic.
3. SWCD will educate landowners of the proper procedures and importance of sealing abandoned wells.
4. PWD and SWCD will provide education to County residents on the proper disposal of household hazardous wastes (i.e. waste oil, batteries, antifreeze, solvents, etc.)
5. Assist candidates with Well Head Protection guidelines and developing a wellhead protection plan.
6. Promote source water protection for public and private water consumption.

Potential Funding Sources: City of Baudette, LOW County, 319 Grant, Clean Water Legacy, PFA, NRBG, BWSR Cost Share, EQIP, 2008 Constitutional Amendment.

Implementation Responsibility: *Lead:* LWPO, SWCD, MN Dept. of Health
Supporting: LOW Public Works Dept., City of Baudette, Anchor Bay Park, NRCS

Objective C: Wetlands

Incorporate local values in protecting and enhancing the wetland resources of the county while improving administration and public awareness of wetland regulations, characteristics and functions. Take advantage of the opportunity to modify current state wetland regulations to better reflect the areas unique natural resources and the local values of wetlands and their functions.

Actions to be taken:

1. LWPO and SWCD will utilize the County's Wetland Management Plan to implement WCA and make wetland management decisions for Lake of the Woods County.
2. LWPO and SWCD will work with the US Army Corp of Engineers to accept the Lake of the Woods County Wetland Management Plan to simplify wetland regulations for the public.
3. LWPO and SWCD will continue coordination between wetland regulatory entities by holding monthly TAC meetings.
4. LWPO and SWCD will promote wetland regulatory simplification.
5. LWPO and SWCD will publish articles in the local newspapers to improve public awareness on WCA rule changes.
6. LWPO and SWCD will post local wetland regulatory information on the County and SWCD website.
7. LWPO and SWCD will implement restorations on abandoned county gravel pits for wetland banking.

Funding Sources: LOW County, NRBG, 2008 Constitutional Amendment.

Implementation Responsibility: *Lead:* LWPO, SWCD
Supporting: HRDC, BWSR

Objective D: Stormwater

Support and encourage the county and the cities of Baudette and Williams in efforts to identify and correct problems associated with stormwater runoff. Inventory locations and correct problems associated with stormwater runoff.

Actions to be taken:

1. LWPO and SWCD will work with city officials for improvement of municipal stormwater management.
2. Baudette and Williams will develop a long term plan for the development of stormwater treatment systems, taking into consideration future development patterns and pressures.
3. Support efforts by these cities to obtain state or federal funding.
4. Cooperate with any programs initiated by these cities, or encourage programs to be developed, to monitor stormwater quality.
5. Promote and educate individuals, developers, commissioners, and general public on properly treated stormwater.

6. PWD will develop a stormwater management plan that will utilize previously completed inventories. The stormwater management plan will incorporate a maintenance program, BMP's, and funding mechanisms to ensure efficient drainage and addressing flood, water quality, and erosion control.

Funding Sources: MPCA, EPA, 319 Grant, Clean Water Legacy, 2008 Constitutional Amendment.

Implementation Responsibility: *Lead:* Cities of Baudette and Williams, LOW Public Works Dept.
Supporting: LWPO, MPCA, SWCD

Objective E: Invasive and Exotic Species

Prevent the spread of aquatic and terrestrial exotic species in the Lake of the Woods County.

Actions to be taken:

1. Increase educational efforts to inform resident and non-resident fishermen of aquatic invasive species.
2. Establish boat washing stations and "stop aquatic hitchhikers" signs at main accesses throughout the county.
3. Educate local resorts to inspect their clients' boats and trailers as well as used boats purchased outside the County, especially those originating in the Great Lakes area.
4. Start an aquatic exotic species awareness month promotion.
5. Utilize the Rainy Basin Planning process to promote increased efforts to prevent the spread of exotic species into/out of the basin.
6. Combat new and existing terrestrial invasive species through education efforts.
7. Hold a stakeholders forum to collaborate on ways to reduce spread of invasive species, namely terrestrial, within the county.
8. Consider adoption of a Weed Management Area to target efforts for combating terrestrial invasive species.

Potential Funding Sources: MPCA, DNR, EQIP, Challenge Grant, 319 Grant, Clean Water Legacy, 2008 Constitutional Amendment.

Implementation Responsibility: *Lead:* DNR, LWPO
Supporting: Extension, SWCD

5. Education:

Education is a major component of all of the previous priority concerns. In order to raise the awareness of the role that environmental education plays in maintaining and improving water resources and other associated natural resources, it is warranted to have education as a priority of its own. The Lake of the Woods County Water Plan Committee has identified and targeted audiences for the information contained in the plan. These audiences include landowners and contractors to policy and ordinance developers. In all cases, education pertaining to the cause and effects of actions to the surrounding environment is essential to maintaining or improving the quality of Lake of the Woods County's water and water related environments. This section further identifies some of audiences that will benefit from additional information, education, and regulation awareness.

Target Audiences:

Permanent and seasonal residents
New property owners
Recreational users
Lake and river associations
Contractors
Realtors
Students and Staff at Lake of the Woods Schools

Objective A: Local Natural Resources Education

Educate students, landowners, and government officials on conservation practices, water quality, erosion and sedimentation, land use management, ISTS, Best Management Practices, invasive species, and wetland resources.

Actions to be taken:

1. SWCD will continue to establish and assist the Lake of the Woods School Rainy River Basin River-Watch Program.
2. SWCD will continue to support and expand local student involvement in the Envirothon.
3. Continue to assist in Take-A-Kid-Fishing, Senior Fishing, and MinnAqua programs.
4. Continue SWCD and DNR involvement in LOW High School environmental education projects.
5. SWCD will continue to exhibit educational conservation displays at the Lake of the Woods County Fair.
6. SWCD will support the establishment of the Water Resources Center at Rainy River Community College.
7. SWCD will develop and work with the school to develop a school grounds educational program.
8. SWCD will continue to develop and implement educational programs concerning wetlands, zoning, drainage, nutrient management, shoreline protection, BMPs for water quality, etc.
9. SWCD will continue to publish and distribute a biannual newsletter.
10. Partner with the UMN Extension and Continuing Education Program at the LOW School for trainings and workshops.
11. SWCD will continue to provide livestock producers with informational workshops and trainings
12. SWCD will develop and maintain a Lake of the Woods County Soil and Water Conservation District Website.
13. SWCD will partner with DNR and other agencies to increase invasive species education in the County.
14. SWCD will work with the Woodland Advisor Program to offer local trainings.
15. SWCD will work with Giziibii RC&D to continue conservation education including the Private Woodlands Management Project.
16. LWPO, SWCD, and DNR will educate landowners about MN DNR Shoreland rules.

Potential Funding Sources: NRBG, DNR, MPCA, 2008 Constitutional Amendment.

Implementation Responsibility: *Lead:* DNR, SWCD

Supporting: LWPO, LOW School, MPCA, Extension

Table 2.
Implementation Schedule
of Priority Concerns Actions

Lake of the Woods County Implementation Schedule						Priority Concerns
Priority 1 - Erosion and Sedimentation						
Objective A: Lakeshore						
Timeline	Actions	Watershed	Lead Agency	Partners	Expenses	Fund
Ongoing	1. Protect and/or restore Pine and Currys Islands.	Lake of the Woods		SWCD, DNR, LWPO	\$3,500,000	Special Project Funding, MN Legislature, 319 Grant, CWL, CA
Ongoing	2. Protect Garden Island from additional shoreline erosion.	Lake of the Woods		SWCD, DNR, LWPO	1,500,000	Special Project Funding, MN Legislature, 319 Grant, CWL, CA
2009	3. Address the problems on Pine, Currys, and Garden Islands, by initiating conversations with the DNR	Lake of the Woods	SWCD, PWD	DNR		
2008 - 2009	4. Inventory and prioritize shoreline erosion problems on Lake of the Woods.	Lake of the Woods	SWCD	DNR, LWPO	\$1,500	Special Project Funding, MN Legislature, 319 Grant, CWL, CA
Ongoing	5. Educate landowners by promoting proper shoreline protection methods.	Lake of the Woods	SWCD	DNR, LWPO, JPB	\$1,000 yr.	Special Project Funding, MN Legislature, 319 Grant, CWL, CA
Ongoing	6. Utilize existing cost-share programs to assist landowners with lakeshore protection projects.	Lake of the Woods	SWCD		\$16,000 yr.	SWCD Cost-Share
2008-2010	7. Complete groin mapping on southern shore and SHOAL mapping at Morris Point.	Lake of the Woods	DNR			
Ongoing	8. Ensure the harbors constructed by the USACE are maintained through the USACE Operational and Maintenance Plans.	Lake of the Woods, Lower Rainy	USACE		See USACE "LOW, MN Small Harbor Economic Analysis Report"	USACE
Priority 1 - Erosion and Sedimentation						
Objective B: Lake Level Management						
Timeline	Actions	Watershed	Lead Agency	Partners	Expenses	Fund
2010	1. Establish a permanent, real time, water level monitoring gauge in the Morris Point area.	Lake of the Woods	DNR	LOW County Board, MPCA, SWCD, LWPO, USGS		USACE, IJC, NRBG, DNR, MPCA, Challenge Grant
2012	2. Formation of a local interest group to provide input to the Lake of the Woods Control Board.	Lake of the Woods	SWCD, LWPO	LOW County Board, DNR, MPCA		USACE, IJC, NRBG, DNR, MPCA, Challenge Grant
Ongoing	3. Enhance communications and promote improved coordination with dam operators, IJC, and FERC by attending meetings.	Lake of the Woods	SWCD, LWPO	LOW County Board, DNR, MPCA		USACE, IJC, NRBG, DNR, MPCA, Challenge Grant
Ongoing	4. Explore other options for lowering water levels and reducing erosion.	Lake of the Woods	SWCD, LWPO	LOW County Board, DNR, MPCA		USACE, IJC, NRBG, DNR, MPCA, Challenge Grant
Ongoing	5. Actively participate in the Rainy River Basin Planning process.	Lake of the Woods	SWCD, LWPO	LOW County Board, DNR, MPCA		USACE, IJC, NRBG, DNR, MPCA, Challenge Grant
Ongoing	6. Review the effectiveness, fairness and efficiency of the "1925 Lake of the Woods Convention and Protocol."	Lake of the Woods	SWCD, LWPO	LOW County Board, DNR, MPCA		USACE, IJC, NRBG, DNR, MPCA, Challenge Grant
Priority 1 - Erosion and Sedimentation						
Objective C: Rivers						
Timeline	Actions	Watershed	Lead Agency	Partners	Expenses	Fund
Ongoing	1. NRCS will increase EQIP projects that implement sedimentation reduction projects on agricultural lands.	Lake of the Woods, Lower Rainy, Rapid	NRCS	SWCD	\$100,000 yr.	EQIP
Ongoing	2. Utilize federal programs in conjunction with local priority areas.	Lake of the Woods, Lower Rainy, Rapid	NRCS	SWCD		EQIP

Table 2.
Implementation Schedule
of Priority Concerns Actions

Timeline	Actions	Watershed	Lead Agency	Partners	Expenses	Fund
Ongoing	3. Provide education, workshops, and cost-share programs to assist landowners in completing stream bank stabilization projects.	Lake of the Woods, Lower Rainy, Rapid	NRCS, SWCD		\$20,000 yr.	SWCD Cost Share, Challenge Grant, LOW County, NRBG, CWL, CA
Ongoing	4. Implement stream bank bioengineering/buffer workshops and demonstration projects.	Lake of the Woods, Lower Rainy, Rapid	SWCD		\$1,000 yr.	SWCD Cost Share, Challenge Grant, LOW County, NRBG, CWL, CA
2008-2012	5. Inventory and prioritize shoreline erosion problems.	Lake of the Woods, Lower Rainy, Rapid	SWCD		\$1,500	Challenge Grant, LOW County, NRBG, CWL, CA
2012	6. Utilize the U of M's study conducted on Zippel Bay (2006) to implement solutions for watershed erosion and sedimentation problems.	Lake of the Woods	SWCD			Challenge Grant, LOW County, NRBG, CWL, CA
Ongoing	7. Implement restoration projects on bays that have recieved increased sedimentation.	Lake of the Woods, Lower Rainy, Rapid	SWCD	PWD	\$750,000	SWCD Cost Share, Challenge Grant, LOW County, NRBG, CWL, CA

Priority 1 - Erosion and Sedimentation

Objective D: Ditch Systems

Timeline	Actions	Watershed	Lead Agency	Partners	Expenses	Fund
2010	1. Complete an inventory of other public and select private ditch systems.	Lake of the Woods, Lower Rainy, Rapid	PWD	SWCD, LWPO, LOW MIS-GIS	\$20,000	Challenge Grant, LOW County, 319 Grant, CWL, CA
2008-2010	2. Complete a culvert inventory.	Lake of the Woods, Lower Rainy, Rapid	PWD	SWCD, LWPO, LOW MIS-GIS	\$100,000	Challenge Grant, LOW County, NRBG, 319 Grant, CWL, CA
2013-2015	3. Develop a county wide stormwater management plan.	Lake of the Woods, Lower Rainy, Rapid	PWD	SWCD, LWPO, LOW MIS-GIS	\$150,000	Challenge Grant, LOW County, NRBG, 319 Grant, CWL, CA
Ongoing	4. Educate landowners and government officials on BMP's for maintenance of ditches.	Lake of the Woods, Lower Rainy, Rapid	SWCD, NRCS	LWPO	\$500 yr.	Challenge Grant, LOW County, NRBG, EQIP, 319 Grant, CWL, CA
Ongoing	5. Utilize BMP's within it's Ditch Maintenance Policies and Procedures.	Lake of the Woods, Lower Rainy, Rapid	PWD			LOW County
Ongoing	6. Educate landowners and agriculture producers on the existence and extents of right-of-ways to assist in limiting disturbance of vegetation.	Lake of the Woods, Lower Rainy, Rapid	PWD	SWCD, NRCS, LWPO	\$500 yr.	Challenge Grant, LOW County, NRBG, 319 Grant, CWL, CA
Ongoing	7. Educate landowners and government officials on conservation practices that can be used along ditches, watercourses and wetlands.	Lake of the Woods, Lower Rainy, Rapid	NRCS, SWCD	LWPO	\$500 yr.	Challenge Grant, LOW County, NRBG, EQIP, 319 Grant, CWL, CA
Ongoing	8. Encourage landowners to utilize side water inlet controls, buffer strips and other BMP's.	Lake of the Woods, Lower Rainy, Rapid	SWCD, NRCS, PWD	LWPO		LOW County
Ongoing	9. Monitor priority watersheds to document the need for erosion control measures to prevent sedimentation in rivers and bays.	Lake of the Woods, Lower Rainy, Rapid	SWCD		\$2,000 yr.	Challenge Grant, LOW County, NRBG, 319 Grant, CWL, MPCA, CA
Ongoing	10. Work to maintain funding for local beaver control efforts to prevent road damage and erosion.	Lake of the Woods, Lower Rainy, Rapid	PWD		\$15,000/yr	Challenge Grant, LOW County, 319 Grant, CWL, CA
2010	11. Complete the Bostic Creek Challenge Grant addressing concerns in the Bostic Watershed.	Lake of the Woods	SWCD, LWPO	PWD	\$50,000	Challenge Grant, LOW County, NRBG, EQIP, 319 Grant, CWL, CA
2009	12. Reconstruct JD 28 using a two stage ditch design developed by the JPB engineer, acquire additional easement, and establish cattle exclusion fencing.	Lake of the Woods	PWD, SWCD	LWPO	\$160,000	Challenge Grant, LOW County, NRBG, EQIP, 319 Grant, CWL, CA
2012	13. Execute the Bostic / Zippel Watershed Assessment Project Work Plan developed by the NRCS Water Resource Staff.	Lake of the Woods	NRCS, SWCD	LWPO, DNR, MPCA, JPB, PWD	TBD	Challenge Grant, LOW County, NRBG, EQIP, 319 Grant, CWL, CA

Table 2.
Implementation Schedule
of Priority Concerns Actions

Timeline	Actions	Watershed	Lead Agency	Partners	Expenses	Fund
Priority 1 - Erosion and Sedimentation						
Objective E: Flood Damage Reduction						
Timeline	Actions	Watershed	Lead Agency	Partners	Expenses	Fund
2010-2012	1. Re-determine watershed boundaries utilizing culvert and ditch inventories.	Lake of the Woods, Lower Rainy, Rapid	PWD	SWCD, LOW MIS-GIS, LWPO, HRDC	\$100,000	LOW County, Challenge Grant, 319 Grant, CWL, DNR Waters FDR Grant, CA
2013-2015	2. Develop a stormwater management plan that will utilize previously completed inventories.	Lake of the Woods, Lower Rainy, Rapid	PWD	LOW MIS-GIS, LWPO, HRDC	\$150,000	LOW County, Challenge Grant, 319 Grant, CWL, DNR Waters FDR Grant, CA
Ongoing	3. Identify specific locations and sub-watersheds with a history or potential for flooding and related damage.	Lake of the Woods, Lower Rainy, Rapid	PWD	SWCD, LOW MIS-GIS, LWPO, HRDC		LOW County, Challenge Grant, 319 Grant, CWL, DNR Waters FDR Grant, CA
Ongoing	4. Review and organize existing site data to perform hydrologic modeling for rainfall events.	Lake of the Woods, Lower Rainy, Rapid	SWCD	MPCA	\$5,000	LOW County, Challenge Grant, 319 Grant, CWL, DNR Waters FDR Grant, CA
Ongoing	5. Identify and implement necessary improvements in drainage infrastructure.	Lake of the Woods, Lower Rainy, Rapid	PWD	SWCD, LOW MIS-GIS, LWPO, HRDC	\$150,000/yr	LOW County, Challenge Grant, 319 Grant, CWL, DNR Waters FDR Grant, CA
2012	6. Identify locations with the potential to be used as flood-water retention areas.	Lake of the Woods, Lower Rainy, Rapid	SWCD	SWCD, LOW MIS-GIS, LWPO, HRDC, PWD		LOW County, Challenge Grant, 319 Grant, CWL, DNR Waters FDR Grant, CA
Ongoing	7. Promote land retirement programs where applicable.	Lake of the Woods, Lower Rainy, Rapid	SWCD	LWPO		LOW County, Challenge Grant, 319 Grant, CWL, DNR Waters FDR Grant, CA
Ongoing	8. Review and update applicable zoning ordinances taking into consideration areas with known flooding problems.	Lake of the Woods, Lower Rainy, Rapid	LWPO	LOW MIS-GIS		LOW County, Challenge Grant, 319 Grant, CWL, DNR Waters FDR Grant, CA
2018	9. Acquire LIDAR of the entire county to assist in locating areas prone to flooding and to help assist with remediation projects.	Lake of the Woods, Lower Rainy, Rapid	SWCD, LWPO	LOW MIS-GIS	\$175,000	LOW County, Challenge Grant, 319 Grant, CWL, DNR Waters FDR Grant, CA
Priority 1 - Erosion and Sedimentation						
Objective F: Buffers and Riparian Corridors						
Timeline	Actions	Watershed	Lead Agency	Partners	Expenses	Fund
Ongoing	1. Inventory areas eligible for filter strips, field borders or riparian buffers utilizing GIS.	Lake of the Woods, Lower Rainy, Rapid	NRCS	SWCD	\$1,000	WRP, EQIP, CRP, RIM, LCCMR, USACE Section 206 Grant, NRBG, LOW County, CWL, CA
Ongoing	2. Prioritize sites with on erosion, water quality, and public value.	Lake of the Woods, Lower Rainy, Rapid	NRCS	SWCD, Extension		WRP, EQIP, CRP, RIM, LCCMR, USACE Section 206 Grant, NRBG, LOW County, CWL, CA
Ongoing	3. Contact landowners to inform them on the importance of buffers and funding opportunities.	Lake of the Woods, Lower Rainy, Rapid	NRCS	SWCD	\$1,000	WRP, EQIP, CRP, RIM, LCCMR, USACE Section 206 Grant, NRBG, LOW County, CWL, CA
Ongoing	4. Identify alternative buffer strip options for landowners.	Lake of the Woods, Lower Rainy, Rapid	NRCS	SWCD	\$500	WRP, EQIP, CRP, RIM, LCCMR, USACE Section 206 Grant, NRBG, LOW County, CWL, CA

Table 2.
Implementation Schedule
of Priority Concerns Actions

Timeline	Actions	Watershed	Lead Agency	Partners	Expenses	Fund
Ongoing	5. Develop a local buffer strip program.	Lake of the Woods, Lower Rainy, Rapid	NRCS, SWCD	Extension	\$1,000	WRP, EQUIP, CRP, RIM, LCCMR, USACE Section 206 Grant, NRBG, LOW County, CWL, CA
Ongoing	6. Identify and contact qualifying landowners to encourage buffer installation.	Lake of the Woods, Lower Rainy, Rapid	NRCS, SWCD		\$1,000	WRP, EQUIP, CRP, RIM, LCCMR, USACE Section 206 Grant, NRBG, LOW County, CWL, CA
Ongoing	7. Re-establish a riparian corridor along the south shore of Lake of the Woods from Long Point west.	Lake of the Woods	NRCS, SWCD	DNR	750,000	WRP, EQUIP, CRP, RIM, LCCMR, USACE Section 206 Grant, NRBG, LOW County, CWL, CA
Ongoing	8. Establish riparian corridors and buffers along intermittent or continuous flow rivers and streams.	Lake of the Woods, Lower Rainy, Rapid	NRCS, SWCD	DNR		WRP, EQUIP, CRP, RIM, LCCMR, USACE Section 206 Grant, NRBG, LOW County, CWL, CA
Ongoing	9. Restore a channelized portion of Bostic Creek to a natural channel.	Lake of the Woods	SWCD, NRCS	DNR	TBD	WRP, EQUIP, CRP, RIM, LCCMR, USACE Section 206 Grant, NRBG, LOW County, CWL, CA

Priority 2 - Land Use Management

Objective A: Development Pressures & Shoreland Impacts

Timeline	Actions	Watershed	Lead Agency	Partners	Expenses	Fund
Ongoing	1. Review shoreland development patterns and current shoreland zoning requirements.	Lake of the Woods, Lower Rainy, Rapid	LWPO	LOW County, HRDC, SWCD		LOW County, NW MN Foundation, HRDC
Ongoing	2. Encourage increased setbacks and other alternatives for new developments.	Lake of the Woods, Lower Rainy, Rapid	LWPO	LOW County, HRDC, DNR		LOW County, NW MN Foundation, HRDC
Ongoing	3. Develop strategies to assist the Planning Commission, Board of Adjustment, and County Board with making sound resource decisions.	Lake of the Woods, Lower Rainy, Rapid	LWPO	HRDC		LOW County, NW MN Foundation, HRDC

Priority 2 - Land Use Management

Objective B: Ordinance Updates and Revisions

Timeline	Actions	Watershed	Lead Agency	Partners	Expenses	Fund
Ongoing	1. Expand on-site inspections for compliance with zoning ordinances and shoreland regulations.	Lake of the Woods, Lower Rainy, Rapid	LWPO			NRBG, Inspection fees, LOW County, NW MN Foundation
Ongoing	2. Amend existing ordinances to regulate common interest communities.	Lake of the Woods, Lower Rainy, Rapid	LWPO	HRDC, MPCA		NRBG, Inspection fees, LOW County, NW MN Foundation
Ongoing	3. Identify areas of concern where noncompliance may be threatening water resources.	Lake of the Woods, Lower Rainy, Rapid	LWPO	DNR, SWCD, HRDC		NRBG, Inspection fees, LOW County, NW MN Foundation
Ongoing	4. Review and update existing local ordinances where needed.	Lake of the Woods, Lower Rainy, Rapid	LWPO	DNR, HRDC, MPCA		NRBG, Inspection fees, LOW County, NW MN Foundation
2010	5. Assess the need for a county feedlot ordinance, develop if deemed necessary.	Lake of the Woods, Lower Rainy, Rapid	LWPO, SWCD	HRDC, MPCA		NRBG, Inspection fees, LOW County, NW MN Foundation
Ongoing	6. Revise ordinances to increase the size of newly created lots.	Lake of the Woods, Lower Rainy, Rapid	LWPO	DNR, SWCD, HRDC		NRBG, Inspection fees, LOW County, NW MN Foundation
Ongoing	7. Encourage the county board to adopt ordinance language that supports septic inspections mandatory upon sale or transfer of property.	Lake of the Woods, Lower Rainy, Rapid	LWPO	DNR, SWCD, HRDC		NRBG, Inspection fees, LOW County, NW MN Foundation

Table 2.
Implementation Schedule
of Priority Concerns Actions

Timeline	Actions	Watershed	Lead Agency	Partners	Expenses	Fund
Priority 2 - Land Use Management						
Objective C: Increased Utilization of GIS as a Resource Management Tool						
Timeline	Actions	Watershed	Lead Agency	Partners	Expenses	Fund
Ongoing	1. Continue shoreland monumentation and parcel mapping.	Lake of the Woods, Lower Rainy, Rapid	LOW MIS-GIS	LWPO		LOW County, NRBG, 319 Grant, CWL, CA
2012	2. Conduct a culvert inventory and reassessment of minor watersheds.	Lake of the Woods, Lower Rainy, Rapid	PWD, SWCD, LOW MIS-GIS		\$50,000	LOW County, NRBG, 319 Grant, CWL, CA
Ongoing	3. Determine additional data needs and collect/acquire data layers.	Lake of the Woods, Lower Rainy, Rapid	LOW MIS-GIS	LWPO, SWCD		LOW County, NRBG, 319 Grant, CWL, CA
Ongoing	4. Make data layers available for all resource management professionals in LOW County.	Lake of the Woods, Lower Rainy, Rapid	LOW MIS-GIS			LOW County, NRBG, 319 Grant, CWL, CA
2012	5. Utilize GIS to record permit and project locations and data.	Lake of the Woods, Lower Rainy, Rapid	LWPO			LOW County, NRBG, 319 Grant, CWL, CA
Ongoing	6. Utilize GIS in making land use planning decisions.	Lake of the Woods, Lower Rainy, Rapid	LWPO	HRDC		LOW County, NRBG, 319 Grant, CWL, CA
2010	7. Preserving historical photography with GIS.	Lake of the Woods, Lower Rainy, Rapid	NRCS	SWCD, LWPO	\$30,000	LOW County, NRBG, 319 Grant, CWL, CA
Ongoing	8. Utilize GIS for Cost Share Projects.	Lake of the Woods, Lower Rainy, Rapid	SWCD, NRCS			LOW County, NRBG, 319 Grant, CWL, CA
Priority 2 - Land Use Management						
Objective D: Protect Unique Features and Areas of High Public Value						
Timeline	Actions	Watershed	Lead Agency	Partners	Expenses	Fund
Ongoing	1. Inventory and prioritize areas eligible for easements.	Lake of the Woods, Lower Rainy, Rapid	LWPO			NRBG, CWL, CA
Ongoing	2. Seek ways to better utilize existing programs.	Lake of the Woods, Lower Rainy, Rapid	LWPO	HRDC		LOW County
2012	3. Develop a local program, complementing existing programs where possible, and administer with the local buffer strip program.	Lake of the Woods, Lower Rainy, Rapid	LWPO	DNR, SWCD, HRDC	\$100,000	LOW County, NRBG, RIM, WRP, State Wetland Banking Program, CWL, CA
Ongoing	4. Prevent outside interests from regulating/utilizing the water flowing into and out of Lake of the Woods County that would be detrimental to the natural resources of the county.	Lake of the Woods, Lower Rainy, Rapid	LWPO	DNR, HRDC		LOW County, NRBG
Priority 2 - Land Use Management						
Objective E: Recreational Management Plan:						
Timeline	Actions	Watershed	Lead Agency	Partners	Expenses	Fund
2011	1. Organize a stakeholder group.	Lake of the Woods, Lower Rainy, Rapid		LWPO, SWCD, Extension, DNR, Tourism Office, CAT-Y/R		DNR, Challenge Grant, CA
2015	2. Develop plan and acquire funding.	Lake of the Woods, Lower Rainy, Rapid		LWPO, SWCD, Extension, DNR, Tourism Office,		DNR, Challenge Grant, CA
Ongoing	3. Develop additional public landings and recreation areas within the county.	Lake of the Woods, Lower Rainy, Rapid	DNR	LWPO, SWCD, Tourism Office		DNR, Challenge Grant, CA

Table 2.
Implementation Schedule
of Priority Concerns Actions

Timeline	Actions	Watershed	Lead Agency	Partners	Expenses	Fund
Ongoing	4. Utilize the Highway 11 Committee to enhance the natural resources along the Rainy River corridor.	Lake of the Woods, Lower Rainy, Rapid		SWCD, LWPO, Extension, DNR		DNR, Challenge Grant, CA
2013	5. Organize an ATV Stakeholder Group to assist with trail mapping, inventories, and maintenance.	Lake of the Woods, Lower Rainy, Rapid	DNR	Tourism Office, Drifters, ATV Clubs		DNR, Challenge Grant, CA
Priority 3 - Sewage Treatment Systems and Other Potential Sources of Water Contamination						
Objective A: Wheeler's Point Community System						
Timeline	Actions	Watershed	Lead Agency	Partners	Expenses	Fund
2013	1. Conduct median household income survey.	Lake of the Woods, Lower Rainy, Rapid		LWPO, MAP, MPCA	\$5,000	USDA Rural Development Grant, WIF, ACOE 569, PFA
2020	2. Utilize the conducted feasibility study of established WPSD to move to implementation.	Lake of the Woods, Lower Rainy	WPSD	LWPO, MAP, MPCA		USDA Rural Development Grant, WIF, ACOE 569, PFA
2012	3. Expand the boundaries of the Wheelers Point Sanitary District.	Lake of the Woods, Lower Rainy	WPSD	LWPO, MAP, MPCA, SWCD		USDA Rural Development Grant, WIF, ACOE 569, PFA, AgBMP
2008	4. Wheelers Point Sanitary District will seek to obtain funding.	Lake of the Woods, Lower Rainy	WPSD	LWPO, MAP, MPCA, SWCD		USDA Rural Development Grant, WIF, ACOE 569, PFA, AgBMP
2020	5. Wheelers Point Sanitary District will install the system.	Lake of the Woods, Lower Rainy	WPSD	LWPO, MAP, MPCA, SWCD	TBD	USDA Rural Development Grant, WIF, ACOE 569, PFA, AgBMP
Priority 3 - Sewage Treatment Systems and Other Potential Sources of Water Contamination						
Objective B: Areas of Concern (Rocky Point, Birch Beach, Sandy Shores, Bostic Creek, & the Islands)						
Timeline	Actions	Watershed	Lead Agency	Partners	Expenses	Fund
Ongoing	1. Identify other areas of the county currently in need of community sewer systems.	Lake of the Woods, Lower Rainy, Rapid	LWPO	MPCA, Extension, MAP		USDA Rural Development Grant, WIF, ACOE 569, PFA
Ongoing	2. Hold informational meetings.	Lake of the Woods, Lower Rainy, Rapid	LWPO	MPCA, Extension, MAP		USDA Rural Development Grant, WIF, ACOE 569, PFA
2012	3. Improve land use planning efforts.	Lake of the Woods, Lower Rainy, Rapid	LWPO	MPCA, Extension, MAP		USDA Rural Development Grant, WIF, ACOE 569, PFA
Ongoing	4. Conduct feasibility studies, obtain funding, and develop community systems where applicable.	Lake of the Woods, Lower Rainy, Rapid	LWPO	MPCA, Extension, MAP	TBD	USDA Rural Development Grant, WIF, ACOE 569, PFA
Ongoing	5. Research and promote cluster/community system designs in the county.	Lake of the Woods, Lower Rainy, Rapid	LWPO	MPCA, Extension, MAP		USDA Rural Development Grant, WIF, ACOE 569, PFA
Ongoing	6. Promote utilization of these systems where a surface or ground water pollution potential exists.	Lake of the Woods, Lower Rainy, Rapid	LWPO	MPCA, Extension, MAP, SWCD		USDA Rural Development Grant, WIF, ACOE 569, PFA, AgBMP
Ongoing	7. Research feasibility of performance septic systems.	Lake of the Woods, Lower Rainy, Rapid	LWPO	MPCA, Extension, MAP		USDA Rural Development Grant, WIF, ACOE 569, PFA
Priority 3 - Sewage Treatment Systems and Other Potential Sources of Water Contamination						
Objective C: Other Pollution Risks						
Timeline	Actions	Watershed	Lead Agency	Partners	Expenses	Fund
2010	1. Implement education program on ordinance updates and new rules.	Lake of the Woods, Lower Rainy, Rapid	LWPO	SWCD		LOW County general fund or permit and inspection fees, AgBMP, MPCA, CWL, CA
2015	2. Complete and maintain inventory of non-conforming on-site sewage systems.	Lake of the Woods, Lower Rainy, Rapid	LWPO	SWCD	TBD	LOW County general fund or permit and inspection fees, AgBMP, MPCA, CWL, CA

Table 2.
Implementation Schedule
of Priority Concerns Actions

Timeline	Actions	Watershed	Lead Agency	Partners	Expenses	Fund
Ongoing	3. Investigate funding mechanisms that may exist to aid in upgrading systems and continue with Ag BMP loans as a funding source.	Lake of the Woods, Lower Rainy, Rapid	LWPO	SWCD		LOW County general fund or permit and inspection fees, AgBMP, MPCA, CWL, CA
2010	4. Select enforcement procedures.	Lake of the Woods, Lower Rainy, Rapid	LWPO			LOW County general fund or permit and inspection fees, AgBMP, MPCA, CWL, CA
Priority 4 - Water Quality						
Objective A: Surface Water						
Timeline	Actions	Watershed	Lead Agency	Partners	Expenses	Fund
2008-2010	1. Continue to assist MPCA on the Baudette Estuary TMDL Study.	Lower Rainy	SWCD	MPCA	\$106,000	MPCA, CWL, CA
2008-2010	2. Continue to assist MPCA on the Williams Creek TMDL with data collection with the delisting process.	Lake of the Woods	SWCD	MPCA	\$20,000	NRBG, CWL, MPCA Agreement, CA
Ongoing	3. Assist other agencies with TMDL studies and implementation projects, including the Lake of the Woods TMDL.	Lake of the Woods, Lower Rainy	SWCD	MPCA		NRBG, Challenge Grant, CWP Grant, 319 Grant, AgBMP, MPCA, CWL, CA
Ongoing	4. Continue coordination with Canadian agencies to address multinational water quality concerns.	Lake of the Woods, Lower Rainy, Rapid	SWCD	MPCA		NRBG, Challenge Grant, CWP Grant, 319 Grant, CWL, CA
Ongoing	5. Continue to implement the Lake of the Woods County Water Quality Monitoring Plan.	Lake of the Woods, Lower Rainy, Rapid	SWCD	MPCA, DNR		NRBG, Challenge Grant, CWP Grant, 319 Grant, CWL, CA
2010	6. Coordinate with MPCA to enter all SWCD water monitoring data into STORET or the H2info system.	Lake of the Woods, Lower Rainy, Rapid	SWCD	MPCA	\$750	NRBG, Challenge Grant, CWP Grant, 319 Grant, CWL, CA
Ongoing	7. Encourage the IJC to establish a pollution board on Lake of the Woods.	Lake of the Woods	SWCD	MPCA, LWPO		
Ongoing	8. Continue to work with Feedlot owners assisting them into compliance.	Lake of the Woods, Lower Rainy, Rapid	SWCD	MPCA		NRBG, Challenge Grant, CWP Grant, 319 Grant, CWL, BWSR C-S, CA
2009	9. Monitor down stream of feedlot cost share sites to determine effectiveness of feedlot projects.	Lake of the Woods, Lower Rainy	SWCD	MPCA	\$1,500	NRBG, Challenge Grant, CWP Grant, 319 Grant, CWL, MPCA, CA
2011	10. Initiate water quality investigations on the north and south branches of the Rapid River, and the Bostic and Baudette minor watersheds.	Lake of the Woods, Lower Rainy, Rapid	SWCD	MPCA, DNR, LWPO	TBD	NRBG, Challenge Grant, CWP Grant, 319 Grant, CWL, CA
Ongoing	11. Determine if human waste from anglers is a concern for water quality and implement strategies to educate and regulate.	Lake of the Woods, Lower Rainy	LWPO	MPCA, LWPO Extension, MAP		USDA Rural Development Grant, WIF, ACOE 569, PFA
Priority 4 - Water Quality						
Objective B: Groundwater						
Timeline	Actions	Watershed	Lead Agency	Partners	Expenses	Fund
Ongoing	1. Continue abandoned well sealing cost-share programs.	Lake of the Woods, Lower Rainy, Rapid	SWCD, NRCS		\$2,500 yr.	BWSR C-S, EQIP, NRBG
Ongoing	2. Hold and sponsor an annual well water testing clinic.	Lake of the Woods, Lower Rainy, Rapid	SWCD	MDH, LWPO	\$1,000 yr.	NRBG

Table 2.
Implementation Schedule
of Priority Concerns Actions

Timeline	Actions	Watershed	Lead Agency	Partners	Expenses	Fund
Ongoing	3. Educate landowners of the proper procedures and importance of sealing abandoned wells.	Lake of the Woods, Lower Rainy, Rapid	SWCD	NRCS, MDH		NRBG
Ongoing	4. Provide education to County residents on the proper disposal of household hazardous wastes.	Lake of the Woods, Lower Rainy, Rapid	PWD, SWCD	MDH, LWPO	\$500/yr	City of Baudette, LOW County, NRBG
Ongoing	5. Assist candidates with Well Head Protection guidelines and developing a wellhead protection plan.	Lake of the Woods, Lower Rainy, Rapid	MDH, LWPO	City of Baudette, Anchor Bay Park,		City of Baudette, LOW County, 319 Grant, CWL, PFA, NRBG, CA
Ongoing	6. Promote source water protection for public and private water consumption.	Lake of the Woods, Lower Rainy, Rapid	MDH, LWPO	City of Baudette, Anchor Bay Park,		City of Baudette, LOW County, 319 Grant, CWL, PFA, NRBG, CA
Priority 4 - Water Quality						
Objective C: Wetlands						
Timeline	Actions	Watershed	Lead Agency	Partners	Expenses	Fund
2008	1. Utilize the County's Wetland Management Plan to implement WCA.	Lake of the Woods, Lower Rainy, Rapid	LWPO, SWCD	HRDC, BWSR		LOW County, NRBG
Ongoing	2. Encourage the US Army Corp of Engineers to accept the Lake of the Woods County Wetland Management.	Lake of the Woods, Lower Rainy, Rapid	LWPO, SWCD	HRDC, BWSR		LOW County, NRBG
Ongoing	3. Continue coordination between wetland regulatory entities by holding monthly TAC meetings.	Lake of the Woods, Lower Rainy, Rapid	LWPO, SWCD	HRDC, BWSR		LOW County, NRBG
Ongoing	4. Promote wetland regulatory simplification.	Lake of the Woods, Lower Rainy, Rapid	LWPO, SWCD	HRDC, BWSR		LOW County, NRBG
Ongoing	5. Publish articles in the local newspapers to improve public awareness on WCA rule changes.	Lake of the Woods, Lower Rainy, Rapid	LWPO, SWCD	HRDC, BWSR		LOW County, NRBG
Ongoing	6. Post local wetland regulatory information on the County and SWCD website.	Lake of the Woods, Lower Rainy, Rapid	LWPO, SWCD	HRDC, BWSR		LOW County, NRBG
2013-2015	7. Implement restorations on abandon county gravel pits for wetland banking.	Lake of the Woods, Lower Rainy, Rapid	LWPO, SWCD	HRDC, BWSR	\$150,000	LOW County, NRBG, CA
Priority 4 - Water Quality						
Objective D: Stormwater						
Timeline	Actions	Watershed	Lead Agency	Partners	Expenses	Fund
Ongoing	1. Work with city officials for improvement of municipal stormwater management.	Lake of the Woods, Lower Rainy	Cities of Baudette and Williams, PWD	LWPO, MPCA, SWCD		MPCA, EPA, 319 Grant, CWL, CA
2012	2. Develop a long term plan for development of stormwater treatment systems for the cities of Baudette and Williams.	Lake of the Woods, Lower Rainy	Cities of Baudette and Williams, PWD	LWPO, MPCA, SWCD		MPCA, EPA, 319 Grant, CWL, CA
Ongoing	3. Support efforts by these cities to obtain state or federal funding.	Lake of the Woods, Lower Rainy	Cities of Baudette and Williams, PWD	LWPO, MPCA, SWCD		MPCA, EPA, 319 Grant, CWL, CA
Ongoing	4. Cooperate with any programs initiated by these cities, or encourage programs to be developed, to monitor stormwater quality.	Lake of the Woods, Lower Rainy	Cities of Baudette and Williams, PWD	LWPO, MPCA, SWCD		MPCA, EPA, 319 Grant, CWL, CA

Table 2.
Implementation Schedule
of Priority Concerns Actions

Timeline	Actions	Watershed	Lead Agency	Partners	Expenses	Fund
Ongoing	5. Promote and educate individuals, developers, commissioners, and general public on properly treated stormwater.	Lake of the Woods, Lower Rainy, Rapid	LWPO	MPCA, SWCD		MPCA, EPA, 319 Grant, CWL, CA
2015	6. Develop a stormwater management plan that will utilize previously completed inventories.	Lake of the Woods, Lower Rainy, Rapid	PWD	LWPO, MPCA, SWCD	\$150,000	MPCA, EPA, 319 Grant, CWL, CA
Priority 4 - Water Quality						
Objective E: Invasive & Exotic Species						
Timeline	Actions	Watershed	Lead Agency	Partners	Expenses	Fund
Ongoing	1. Increase educational efforts to inform resident and non-resident fishermen of exotic species.	Lake of the Woods, Lower Rainy, Rapid	DNR	Extension, SWCD	TBD	MPCA, DNR, EQUIP, Challenge Grant, 319 Grant, CWL, CA
2012	2. Establish boat washing stations and "stop aquatic hitchhikers" signs at main accesses throughout the county.	Lake of the Woods, Lower Rainy, Rapid	DNR		TBD	
Ongoing	3. Educate local businesses to inspect their clients' boats and trailers as well as used boats purchased outside the County, especially those originating in the Great Lakes area.	Lake of the Woods, Lower Rainy, Rapid	DNR	Extension, SWCD		MPCA, DNR, EQUIP, Challenge Grant, 319 Grant, CWL, CA
2009	4. Start an exotic species awareness month promotion.	Lake of the Woods, Lower Rainy, Rapid	DNR	Extension, SWCD	TBD	MPCA, DNR, EQUIP, Challenge Grant, 319 Grant, CWL, CA
Ongoing	5. Utilize the Rainy Basin Planning process to promote increased efforts to prevent the spread of exotic species into/out of the basin.	Lake of the Woods, Lower Rainy, Rapid	DNR, LWPO	Extension, SWCD		MPCA, DNR, EQUIP, Challenge Grant, 319 Grant, CWL, CA
Ongoing	6. Combat new and existing terrestrial invasive species through education efforts.	Lake of the Woods, Lower Rainy, Rapid	DNR, SWCD	Extension, MPCA, LWPO		NRBG, DNR, MPCA
2009	7. Hold a stakeholders forum to collaborate on ways to reduce spread of invasive species, namely terrestrial, within the county.	Lake of the Woods, Lower Rainy, Rapid	LWPO, SWCD	PWD, Extension, DNR		
2010	8. Consider adoption of a Weed Management Area to target efforts for combating terrestrial invasive species.	Lake of the Woods, Lower Rainy, Rapid	LWPO, SWCD	PWD, Extension, DNR	\$25,000	BWSR, CWL, US Fish and Wildlife
Priority 5 - Education						
Objective A: Local Natural Resources Education						
Timeline	Actions	Watershed	Lead Agency	Partners	Expenses	Fund
Ongoing	1. Continue to establish and assist the Lake of the Woods School Rainy River Basin River-Watch Program.	Lower Rainy	SWCD	LWPO, MPCA, LOW School	\$500 yr.	NRBG, MPCA
Ongoing	2. Continue to support and expand local student involvement in the Envirothon.	Lake of the Woods, Lower Rainy, Rapid	SWCD	LOW School		NRBG, MPCA
Ongoing	3. Continue to assist in Take-A-Kid-Fishing, Senior Fishing, and MinnAqua programs.	Lake of the Woods, Lower Rainy, Rapid		DNR		DNR
Ongoing	4. Continue SWCD and DNR involvement in LOW high school environmental education projects.	Lake of the Woods, Lower Rainy, Rapid	SWCD, DNR	LWPO, MPCA		NRBG, DNR, MPCA
Ongoing	5. Continue Lake of the Woods County Fair Booth Conservation Educational Displays.	Lake of the Woods, Lower Rainy, Rapid	SWCD, DNR		\$100 yr.	NRBG, DNR, MPCA
Ongoing	6. Support the establishment of the Water Resources Center at Rainy River Community College.	Lake of the Woods, Lower Rainy, Rapid	SWCD	MPCA, LWPO		NRBG, MPCA

**Table 2.
Implementation Schedule
of Priority Concerns Actions**

Timeline	Actions	Watershed	Lead Agency	Partners	Expenses	Fund
2010	7. Develop and work with the school to develop a school grounds educational program.	Lake of the Woods, Lower Rainy, Rapid	SWCD	DNR, LOW School	\$1,200,000	NRBG, DNR
Ongoing	8. Continue to develop and implement adult targeted educational programs.	Lake of the Woods, Lower Rainy, Rapid	SWCD	LWPO, DNR, Extension, LOW School, MPCA	\$100 yr.	NRBG, DNR, MPCA
Ongoing	9. Continue to publish and distribute a biannual newsletter.	Lake of the Woods, Lower Rainy, Rapid	SWCD		\$2,000 yr.	NRBG
2009	10. Work with the continuing education program at the school.	Lake of the Woods, Lower Rainy, Rapid	SWCD	LOW School		NRBG
Ongoing	11. Continue to provide livestock producers with informational workshops and trainings.	Lake of the Woods, Lower Rainy, Rapid	SWCD	Extension	\$100 yr.	NRBG, MPCA
Ongoing	12. Develop and maintain a Lake of the Woods County Soil and Water Conservation District Website.	Lake of the Woods, Lower Rainy, Rapid	SWCD		\$300 yr.	NRBG
2008	13. Increase invasive species education in the County.	Lake of the Woods, Lower Rainy, Rapid	DNR, SWCD	Extension, MPCA, LWPO		NRBG, DNR, MPCA
Ongoing	14. Work with Woodland Advisor Program to offer trainings in the county.	Lake of the Woods, Lower Rainy, Rapid	SWCD	Extension	\$200 yr.	NRBG
Ongoing	15. Work with Giziibii RC&D to continue conservation education including the Private Woodlands Management Project.	Lake of the Woods, Lower Rainy, Rapid	SWCD	Extension	\$1,000	NRBG
Ongoing	16. Educate landowners about MN DNR Shoreland rules.	Lake of the Woods, Lower Rainy, Rapid	LWPO, SWCD, DNR		\$1,000	NRBG

III. WATER PLAN PUBLIC MEETINGS

The Lake of the Woods County Board of Commissioners authorized the revision and update of the Lake of the Woods County Local Water Plan on November 28, 2006.

There was one public input meeting discussing the Water Plan Revision. At this meeting the SWCD Water Plan Coordinator solicited public input. The Priority Concerns Scoping Document utilized public input received from a local survey. An overview of the raw data collected from the mailed survey was provided in the Priority Concerns Scoping Document. This document was utilized to shape the priorities for the Water Plan update.

The survey asked for top water quality related concerns, and for what resources are most threatened. Other comments and questions were also provided. A copy of the scoping document can be found in Attachment B.

The County Board also discussed the Water Plan Revision at the March 27, 2007 regularly scheduled board meeting. The SWCD has discussed the Water Plan at three publicly noticed meetings: December 14, 2006, February 8, 2007 and March 6, 2007. The WPTFC met once in 2006 (December 19), and four times in 2007 (January 10 & 24, February 14, April 26).

On November 14, 2007 the BWSR Northern Review Board evaluated the Priority Concerns Scoping Document. Upon their approval the actual writing of the Lake of the Woods County Water Plan update began.

The Water Plan Task Force Committee met twice to review the draft changes to the Water Plan (November 19, 2007 and April 30, 2009). At the April 30, 2009 meeting the Water Plan Task Force Committee moved to send the document to public hearing. The public hearing was held on August 11, 2009. Comments for the public meeting are listed in Attachment A.

Attachment A.

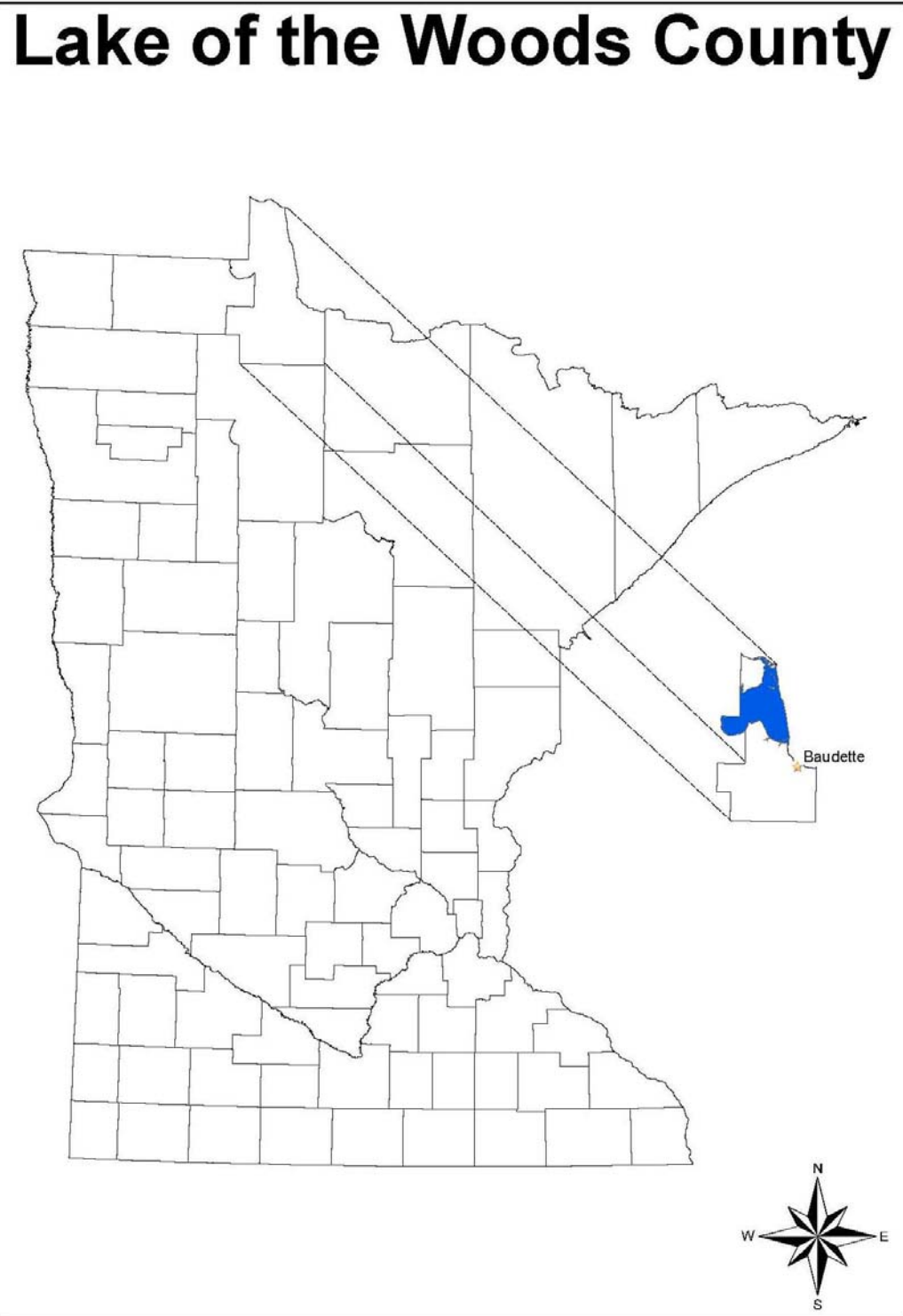
Comments from Public Meeting August 11, 2009

Lake of the Woods County Government Center – Baudette 8/11/09

Comments and questions received from the public:

- There are too many regulations for feedlots and animal agriculture.
- What is the benefit of a recreational management plan for the county? What is an example of an action item?
- What is the length of monitoring efforts to address impaired waters designations?
- How does the Water Plan address the dredging and straightening of the Rapid River that took place decades ago? The Rapid River has been altered from it's natural state and now experiences more irregular flows and erosion.
- How does the plan address peaking on the Rainy River? How can better coordination between dam operators, Control Boards, and the International Joint Commission improve water levels in the Rainy River and Lake of the Woods for habitat and erosion?
- What can be done about the Emerald Ash Borer? Are there biologic controls or mechanical controls? Can the County Board enact rules or ordinances to ban all firewood from outside of the area, to prevent the spread?
- What is the status of the Spinney Water Flea? Are the effects as bad as the DNR Fisheries Staff had predicted that it would be?
- Does the Water Plan address feedlots on the Canadian side of the border on the Rainy River? Is there a way to color the Canadian feedlot runoff to distinguish it from the US feedlot runoff?
- With Lake of the Woods being listed as impaired for excess nutrients, how are other pollutions sources from Canada addressed in the Water Plan?
- Why is the erosion of Pine Island a major priority for Lake of the Woods County?

Attachment B.
Priority Concerns Scoping Document-2007
Lake of the Woods County, Minnesota
For 2010 Water Plan



INTRODUCTION

County Background: Lake of the Woods County was organized on November 28, 1922 when a vote by area residents separated the northern townships from Beltrami County. On January 1, 1923, the county officially began operations at its county seat in Baudette. The county contains the Northwest Angle, the northernmost point of the Lower 48 States, and includes the U.S. portion of Lake of the Woods, shared with Canada. This county is bordered by two Canadian provinces and three counties. The Canadian providences are Manitoba and Ontario to the north, Roseau County to the west, Beltrami County on the south, and Koochiching County on the east.

Population: As of 2005, Lake of the Woods County had approximately 4,421 people. See Table 1 for population trends from 1930 to 2000. As of 2000, Baudette, the county seat, comprised approximately 23% (or 1029) of the County's total population. The other incorporated areas in the county include Williams and Roosevelt. These cities accounted for 202 and 3 people respectively. The majority of Roosevelt falls within Roseau County.

Table 1. 1930 to 2000 Lake of the Woods County Population

1930	1940	1950	1960	1970	1980	1990	2000
4194	5975	4955	4304	3987	3764	4076	4522

Dominant Land Use and Trends: The County has a total area of approximately 1,136,918 acres of which Lake of the Woods comprises 306,393 acres (27%), wetlands 708,591 (62%) and upland 121,934 (11%). The breakdown of the total amount of land ownership within the county is: State or Federally owned 489,820 (59%), Reservation Lands 110,003 (13%), private lands 227,534 (27.5%), and the remaining amount (.5%) is comprised of publicly owned land through the City of Baudette or Lake of the Woods County.

The main industries for the area are Tourism, and Agriculture. Tourism for the area revolves around the Lake of the Woods fishery. Many businesses operate because of the steady influx of tourist. These businesses include: gas stations, resorts, restaurants, shops, hotels, bait shops, storage facilities, realtors, construction companies, grocery stores, etc. Animal agriculture has been in steady decline over the past 10 years. There are no longer any dairy operations within the county. Many beef operations are still in production, but are also declining. Currently there are less than 40 registered feedlots in the county. Small grain production, potatoes, and grass seed production operations are the main agricultural products for this area. The recent economics of agriculture has altered land use trends to shift from agricultural productive lands to hunting and recreational land.

Plan Responsibility and Updates: The responsibility of administrating and coordinating implementation of the Lake of the Woods County Comprehensive Local

Water Management Plan (CLWMP) is assigned to Lake of the Woods County Soil and Water Conservation District.

Guidance and direction for implementation is provided by the Water Plan Task Force Committee (WPTFC). Those that serve on the Committee include 2 County Commissioners, 2 SWCD Supervisors, Municipal City Council Members, citizens of the community, and State and Local Agencies including: NRCS, MNDNR Fisheries and Waters, MPCA, MN Extension, BWSR, and the LOW County Highway Department.

The original local water management plan was adopted in 1992. The first and second revisions took place in 1997 and 2002 respectively. This revision will be the fourth generation of the Lake of the Woods Comprehensive Local Water Management Plan.

The current plan is scheduled to end on December 31, 2007, however, an extension may be sought due to time constraints and staffing levels.

List of Priority Concerns: The following priority concerns were identified through WPTFC Meetings, surveys, and public meetings. The Lake of the Woods County Board met on November 28th 2006 and adopted a resolution to update the Lake of the Woods Comprehensive Water Management Plan. The County Board also discussed the Water Plan Revision at the March 27, 2007 regularly scheduled board meeting. The SWCD has discussed the Water Plan at three publicly noticed meetings: December 14, 2006, February 8, 2007 and March 6, 2007. The WPTFC met once in 2006 (December 19) and four times in 2007 (January 10 & 24, February 14, and April 26). The WPTFC relied on two major documents for information. These documents were the 2003 Lake of the Woods Comprehensive Local Water Management Plan and the 2004 Rainy River Basin Plan. The priority concerns identified by the 2007 WPTFC are as follows, in order of importance:

- **Erosion, sedimentation, flood damage reduction:** Bostic and Zippel Watersheds, southern shore of Lake of the Woods, Pine and Currys Islands, Rainy River, Ditch Systems and Maintenance, buffer strips and other NRCS BMP practices, culvert survey, development of floodwater retention areas.
- **Land use management:** County wide planning for land use and development, reestablish riparian corridors, development of a feedlot ordinance, recreation management plan, public landings and recreational areas.
- **ISTS:** Wheeler's Point Sanitary District, other addressed areas of concern for surface and groundwater contamination, promote county ordinance change to include a septic inspection upon sale or transfer of property, increase compliance of septic systems within the county.
- **Water quality:** Impaired waters, nutrient loading of Lake of the Woods and Rainy River Basin, water quality monitoring, rice paddy production, feedlot runoff reduction,

ground water protection, enhancement of Lake of the Woods fishery, wetland resources, stormwater/drainage management.

● **Education:** Private landowner technical assistance & conservation planning, hazardous waste collection day, buffers along ditches and waterways, proper ditch maintenance, surface & groundwater education, shoreland education, exotic species education.

Priority Concern Identification: The listed priority concerns for 2002 Lake of the Woods County Local Water Management Plan were developed using goals and concerns gathered from the following existing plans:

The Lake of the Woods Comprehensive Local Water Management Plan adopted in February 2003:

- Sustained high water levels on Lake of the Woods
- Drainage systems, maintenance, erosion, and sedimentation
- Community sewer systems
- Flood damage reduction
- Enhancement of surface waters
- Feedlots/livestock concentrations
- Enhancement of Lake of the Woods Fishery
- High priority wetland resources
- Lake of the Woods Recreation Management Plan
- Geographic information systems
- Public lands and recreational resources
- Stormwater management
- Protection of groundwater resources
- Enforcement of local ordinances and regulations
- Unique features and high value resources

Rainy River Basin Plan completed in 2004:

Maintain or improve the existing conditions of streams, rivers and lakes in the Rainy River Basin

- Restore shoreline buffers and riparian corridors
- Monitoring: River Watch, Rapid, Zippel, Bostic, Winter Road, Baudette, and a Basin River Watch Coordinator
- Lake WQ monitoring on Lake of the Woods
- Lake water quality monitoring on Lake of the Woods
- Flow Gauges – 1) Rainy River upper reach; 2) Additional gauges close to Rainy main stem confluence: Little Fork, Big Fork, Rapid, and Baudette.
- Effects of Rice Paddies on the Rapid River
- Lake level for Wheeler's Point and Springsteel
- Restore a Natural Channel between Bostic Creek and Canfield Creek
- Erosion – Rainy River
- Erosion: Rapid River, Warroad, and Zippel Bay Watersheds
- Address erosion and degradation of Lake of the Woods Shoreline and degradation of Pine and Currys Islands

- Exotics
- ISTS, Cluster systems and unsewered communities.

A Citizen Priority Concerns Survey was distributed through the SWCD newsletter on March 18th 2007. Also, a news article informing the public of the water plan revision and of the survey was published in the local papers the same week. Surveys were also available at the SWCD and County Land and Water Planning Office.

Survey Results

Rank	Top Citizen Concerns	Result
1	Erosion	15
2	Development pressure/impacts	13
2	Failing Septic Systems	13
4	Declining water quality	9
5	Invasive species	8
5	Stormwater/Drainage management	8
7	Lack of regulations/enforcement	6
8	Natural habitat destruction	5
9	Contaminated runoff	4
10	Groundwater contamination	3
10	Lack of environmental education	3
10	Over-application of fertilizers	3
13	Other	1

The following resources were deemed to be the most threatened ranked from highest to lowest.

1. Streams/Rivers
2. Lake of the Woods
3. Wetlands
4. Groundwater
5. Other

Additional concerns mentioned through the survey process included; spawning habitat for fisheries, waterway protection, navigability of streams, recreation and access, resort community septic systems (x2), vehicle fluid leakages on water bodies, ice fishing and human waste, beach litter in the spring, and preplanning for new development.

Issues Identified by Stakeholders: On December 20, 2007 a request for priority concerns was sent out to the following agencies: MN Department of Agriculture, MN Environmental Quality Board, MN Department of Health, MN Department of Natural Resources, MN Pollution Control Agency, and the MN Board of Water and Soil Resources. All priority concerns are addressed in the current CLWMP, and will continue to be a priority in the 2008 revised plan. The following information is the feedback from these agencies.

Minnesota Department of Natural Resources – Michael Carroll

Priority Concerns: Deferred input to local DNR Staff Mike Larson, who sits on the WPTFC.

Minnesota Department of Health- Beth Kluthe

Priority Concern 1: Source Water Protection for resorts on Lake of the Woods

Priority Concern 2: Protect groundwater-based drinking water sources within Lake of the Woods County

Priority Concern 3: Sealing of unused, unsealed wells

Minnesota Pollution Control Agency – Lisa Thorvig

Priority Concern 1: Impaired Waters/Total Maximum Daily Loads (TMDL)

Priority Concern 2: Shoreline and Island Erosion on Lake of the Woods

Priority Concern 3: Nutrient Over-enrichment of Lake of the Woods

Priority Concern 4: Destabilization and Geomorphologic Alterations to Tributaries of Lake of the Woods

Priority Concern 5: Inclusion of a Prioritized Project List in the Plan

Priority Concern Selection: The Lake of the Woods Soil and Water Conservation District and the Lake of the Woods County Water Plan Task Force Committee reviewed the identified concerns raised during the data collection process and have selected the following priority concerns for inclusion in the water plan update. These selections were based on the priorities identified in the plan's review, agencies' comments, public meetings, and a public survey.

Priority concerns: For the purpose of the Scoping Document, the identified priority concerns have been categorized into similar areas of concern. In the revision of the CLWMP, the WPTFC has sought to minimize the number of concerns. The existing CLWMP identifies 15 priority issues. The current WPTFC hopes to reduce the number of issues to 5 priority issues through combining similar categories of concern. The priority concerns are, in order of importance:

- **Erosion, sedimentation, flood damage reduction:** Bostic and Zippel Watersheds, southern shore of Lake of the Woods, Pine and Currys Islands, Rainy River, Ditch

Systems and Maintenance, buffer strips and other NRCS BMP practices, culvert survey, development of floodwater retention areas.

- **Land use management:** County wide planning for land use and development, reestablish riparian corridors, development of a feedlot ordinance, recreation management plan, public landings and recreational areas.
- **ISTS:** Wheeler's Point Sanitary District, other addressed areas of concern for surface and groundwater contamination, promote county ordinance change to include a septic inspection upon sale or transfer of property, increase compliance of septic systems within the county.
- **Water quality:** Impaired waters, nutrient loading of Lake of the Woods and Rainy River Basin, water quality monitoring, rice paddy production, feedlot runoff reduction, ground water protection, enhancement of Lake of the Woods fishery, wetland resources, stormwater/drainage management.
- **Education:** Private landowner technical assistance & conservation planning, hazardous waste collection day, buffers along ditches and waterways, proper ditch maintenance, surface & groundwater education, shoreland education, exotic species education.

Priority Concerns Not Addressed by the Plan: The similarities in many of the identified priorities allow for considerable flexibility and opportunities to address the majority of the identified concerns. However some areas are better off addressed through other measures or agencies.

Table 3.
2008 Lake of the Woods County
Impaired Waters List
Per Section 303 (d) Clean Water Act

LAKES

AUID#	Reach	Description	Pollutant or stressor	Impaired use	Category
39-0002-02	Lake of the Woods (4 Mile Bay)	Lake or Reservoir	Nutrient/Eutrophication Biological Indicators	AR	5B
39-0002-02	Lake of the Woods (4 Mile Bay)	Lake or Reservoir	Mercury in fish tissue	AC	5B ¹⁵
39-0002-01	Lake of the Woods (main)	Lake or Reservoir	Nutrient/Eutrophication Biological Indicators	AR	5B
39-0002-01	Lake of the Woods (main)	Lake or Reservoir	Mercury in fish tissue	AC	5B ¹⁵

RIVERS

AUID#	Reach	Description	Pollutant or stressor	Affected use	Category
09030008-519	Baudette River	CSAH 35 to Rainy R	Oxygen, Dissolved ^{2,5}	AL	5C
09030008-504	Rainy River	Rapid R to Baudette R	Mercury in fish tissue	AC	4A
09030008-508	Rainy River	Baudette R to RR Bridge in Baudette	Mercury in fish tissue	AC	4A
09030008-509	Rainy River	RR Bridge in Baudette to Winter Road R	Mercury in fish tissue	AC	4A
09030008-505	Rainy River	Winter Road R to Lake of the Woods	Mercury in fish tissue	AC	4A
09030009-501	Williams Creek	Headwaters to Zippel Cr	Oxygen, Dissolved ^{2,5}	AL	5C

AUID = Aquatic Unit Identification Number

Impaired Use codes:

AC = Aquatic Consumption

AR = Aquatic Recreation

AL = Aquatic Life

Category codes:

4A: Impaired, but a TMDL study has been approved by EPA

5B: Impaired by multiple pollutants and at least one TMDL study plan is approved by EPA

5C = Impaired by one pollutant and no TMDL study plan is approved

Attachment D. Acronyms

ACOE	Army Corps of Engineers
AgBMP	Agriculture Best Management Practice Loan Program
BMP	Best Management Practices
BWSR	Board of Water and Soil Resources
C-S	Cost Share
CA	Constitutional Amendment (passed in 2008)
CLMP	Citizen Lake Monitoring Program
CRP	Conservation Reserve Program
CWL	Clean Water Legacy Act
CWP	Clean Water Partnership
DNR	Department of Natural Resources
EPA	Environmental Protection Agency
EQIP	Environmental Quality Incentives Program
FDR	Flood Damage Reduction
FERC	Federal Energy Regulatory Commission
GIS	Geographic Information System
HRDC	Headwaters Regional Development Commission
IJC	International Joint Commission
ISTS	Individual Septic Treatment Systems
JPB	Joint Powers Board (North Central MN Joint Powers Board Engineer)
LCCMR	Legislative Citizen Commission on Minnesota Resources
LGU	Local Government Unit
LIDAR	Light Detection And Ranging
LOW	Lake of the Woods
LWPO	Land and Water Planning Office

MAP	Midwest Assistance Program
MDH	Minnesota Department of Health
MDNR	Minnesota Department of Natural Resources
MIS	Management Information Systems
MPCA	Minnesota Pollution Control Agency
NRBG	Natural Resources Block Grant
NRCS	Natural Resources Conservation Service
PFA	Minnesota Public Facilities Authority
PWD	Public Works Department
RIM	Reinvest in Minnesota
STORET	STOrage and RETrieval (EPA WQ Database)
SWCD	Soil and Water Conservation District
TAC	Technical Advisory Committee
TMDL	Total Maximum Daily Load
U of M	University of Minnesota
USACE	United States Army Corp. of Engineers
USGS	United States Geological Survey
WCA	Wetlands Conservation Act
WHIP	Wildlife Habitat Incentives Program
WIF	Wastewater Infrastructure Funding program
WRP	Wetland Reserve Program
WPC	Water Plan Committee
WPSD	Wheeler's Point Sanitary District