ITASCA COUNTY
LOCAL WATER MANAGEMENT PLAN

Effective 3-31-2022 to 3-31-2027

Amendment extension adopted March 22, 2022

1-29-19 to 3-31-22 amendment to the Executive Summary, Goals, Objective, and Action Items, adopted January 29, 2019

First revision adopted May 2012

Original adopted April 2007

Prepared by:

Itasca County Soil and Water Conservation District
And

Itasca County Water Plan Implementation Committee

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ACKNOWLEDGEMENTS

ITASCA COUNTY WATER PLAN IMPLEMENTATION COMMITTEE

The Itasca County Water Plan Implementation Committee (WPIC) is responsible for overseeing the implementation of the Itasca County Local Water Management Plan. WPIC was primarily responsible for overseeing the 2007-2017 Itasca County Water Plan Update and its 2012 revision. The members of that committee also were actively involved in holding public meetings in the county to receive input from citizens, local units of government, other organizations and state agencies. The eleven members of the committee are listed below.

Norman Miranda	Commissioner District 1
Tom Nelson	Commissioner District 2
Don Klandee	Commissioner District 3
Lester Kachinski	Commissioner District 4
Mike Oja	Commissioner District 5
Richard Lacher	Itasca County Township Association
Harold Goetzman	Itasca County Coalition of Lake Associations
Calvin Saari	Itasca County Soil and Water Conservation District
Dan Butterfield	Itasca County Planning Commission
Norley Hanson	Conservation Groups
Robert Lindahl	County wide “At-Large”

ITASCA COUNTY BOARD OF COMMISSIONERS

County Water Planning has been active in Itasca County since its start in 1990. The recent County Comprehensive Plan, adopted in 2007, builds on the previous local water plan. The comprehensive plan served as the basis for the 2017-2022 Local Water Plan amendment. Itasca County Commissioners have been strong supporters of local water planning. Members as of December 2018 include:

District 1 - Davin Tinquist
District 2 - Terry Snyder
District 3 - Leo Trunt
District 4 - Burl Ives
District 5 - Ben DeNucci

ITASCA COUNTY SOIL AND WATER CONSERVATION DISTRICT

The Itasca 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 the plan's beginning in 1990. Many individual volunteers, local, state and federal groups have been active participants during the past decade. Itasca SWCD Board members since the adoption for the 2017 UPDATE include; December 2018 members are listed first.

Chris Reed-Vice Chair, Charles Isaacs	District 1
Ted Lovdahl, Jr.-Chair	District 2
Melissa Roberts-Secretary, Darrell Lauber	District 3
Don Simons	District 4
Calvin Saari-Treasurer, Terry Tillotson	District 5

December 2018 Itasca SWCD and NRCS Staff:

Andy Arens, District Manager and Water Plan Coordinator
Kathy Cone, Receptionist/Book Keeper
Lisa Whelan, Office Assistant
Kim Yankowiak, Water Resources Specialist
Tim Frits, Forestry & Shoreland Specialist
Waylon Glienke, Wetland Specialist
Bill Grantges, AIS Coordinator
Chris Evans, AIS Specialist

Marge Sella, NRCS District Conservationist
Kyle Asplund, NRCS Soil Conservation Technician
NRCS Partner: Kevin Sheppard, American Bird Conservancy (ABC)

I. EXECUTIVE SUMMARY

The first Itasca County Local Water Management Plan was completed in 1990, and updates were completed in 1996, 2002, 2007 and 2012. This update will be the fifth revision, and sixth draft, and will become effective January 1 2019. The purpose of this plan is to address the water related issues across the county, regardless of jurisdictional, political, municipal or watershed boundaries. This plan is intended to compliment other state, regional or local planning processes. It addresses ground and surface water and those activities that may influence water quality or quantity. The plan update will look specifically at the top four priority concerns that were developed through the scoping process; Surface Water Resources, Land Use and Development, Fish and Wildlife Habitat, and Groundwater Quality. The 2012 update also included stand alone "Septic Systems" and "Education" priority concerns. Education is now addressed in multiple locations, and septic systems is covered in the Land Use and Development priority concern section.

The concerns that were identified are addressed as county wide, however, when necessary or applicable they will be implemented on a watershed wide basis. This plan was written under the delegated authority of the Itasca County Board of Commissioners and is designed to cover the period from January 1st of 2019 through March 31st of 2022. Much progress has been made over the last three decades to protect and restore water resources, and it is the intent of the county water plan to actively continue these efforts.

County Background

Itasca County is the third largest county in the state of Minnesota. It is located in the northern part of the Central Lakes Region. Dominant land uses are forest management, recreation, and private and corporate development. The county seat is located in the city of Grand Rapids.

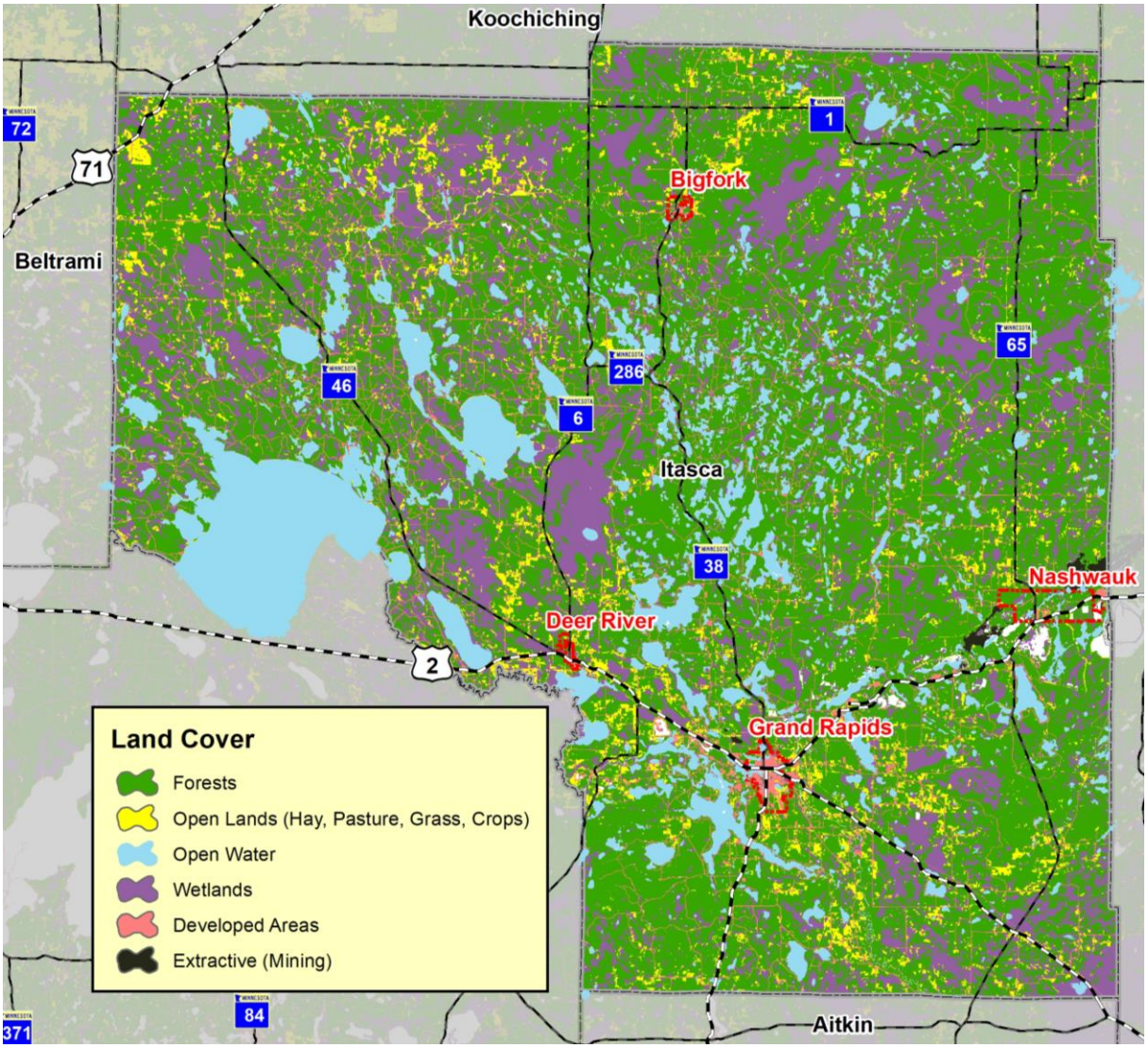
Itasca County is very large and contains an abundance of surface water. There are over 1,000 lakes in the county, with about 950 lakes over ten acres in size, covering almost 9 percent (170,000 acres) of the total area of the county. Over 1,853 miles of streams drain the county's watersheds, including 119 miles of the Mississippi and 71 miles of the Big Fork Rivers. Itasca County is comprised of portions of 6 major watersheds, the Mississippi River (Headwaters), Mississippi River (Grand Rapids), Upper and Lower Red Lake, Little Fork River, Big Fork River and St. Louis Rivers. There are 2,630 miles of lakeshore within the County; in comparison the state of California has just over 1,100 miles of coastline. Wetlands are present on over 550,000 acres, about one-third of the total land surface. Approximately 95 percent of pre-settlement wetlands still remain.

Surface and ground water quality and land use issues relating to surface water have become increasingly important to the people who live and recreate in Itasca County. Development, industry, agriculture, forestry, aquatic invasive species (AIS), and lake use issues are the primary factors that can affect water quality, fish and wildlife habitat, recreation and aesthetics.

The population of Itasca County has been fluctuating since the 1960's due to local economic conditions. Between 1980 and 1990, population declined about 5% from 43,069 to 40,863, mostly due to decreases in iron mining employment. Since then, however, that decline has been made up. The 2000 census put the population of Itasca County at 43,992, an increase of nearly 8%. Most of the increases have been in the southern part of the county and are probably due to increases in commercial activity and development of lakeshore properties. The 2010 census showed an additional 2.4% growth in population to 45,058. The population is expected to grow by 22 percent by 2030.

Other nearby counties, notably Aitkin and Cass, have seen even greater increases in population. Much of the increase in these three counties has been attributed to new shoreland development and conversion of seasonal to permanent residences, especially in shoreland areas. Shoreland values on some of the county's more desirable lakes have increased dramatically in the last ten years. This trend is expected to affect Itasca County as well.

Itasca County Land Cover:



Consistency of the Plan with other Pertinent Local, State, and Regional Plans

This is a "Protection" focused plan, as opposed to restoration focus. In other words, a plan to protect and maintain the good water quality of Itasca County, as opposed to restoring lost water quality, like is the focus in other Minnesota Counties. Itasca County shares this approach with all of our neighboring Counties. Protection is also the focus of our state conservation partners, in the northern forested region, which Itasca is part of.

A major effort to develop a comprehensive land use plan was initiated by the county in 1998. Following many public meetings, reviews and revisions by a large citizen's committee and technical advisory panel, the Itasca County Board of Commissioners adopted the plan on May 23, 2000. An update was performed in 2013, with an effective date of June 1 2013.

Many existing plans, including the county water plan, were incorporated into the county comprehensive plan. Because of the detailed attention that was paid to water resource issues in the county comprehensive plan, many of the "Implementation Tools" in the comprehensive plan are updated versions of "Action Items" of the 1995 update of the county Water Plan. It is the recommendation of the Itasca County Water Plan Implementation Committee (WPIC) that the "Implementation Tools" listed in the year 2013 County Comprehensive Land Use Plan again be considered in the January 1 2019 Itasca County Local Water Plan amendment. A summary of Implementation Tools considered in the water plan is listed in Attachment A.

Water Plan Strategies

Water quality monitoring has been a primary focus of the Itasca County Water Plan since its beginning in 1990. Since 2008 an intensive lake assessment program has evolved with the partnership of the Itasca SWCD, Itasca Waters (formerly IWLP), Itasca Community College, Itasca County and the Minnesota Pollution Control Agency (MPCA). Through this partnership a state of the art water quality analysis lab has been established at ICC, and through successful grant funding the SWCD and Itasca Waters has been able to obtain funding from the MPCA to assess water quality according to state standards on over 250 lakes within the county.

Itasca County, through the SWCD, intends to continue working with the MPCA, through the WRAPS process. This includes collecting needed water sampling data, assisting in sample analysis, and generating watershed management WRAPS documents. The SWCD will also continue to consider additional efforts beyond the MPCA's focus. See the Assessment of Priority Concerns section for additional information.

A major goal of the water plan will be to assist local units of government, landowners and other interested groups to make wise land and water use decisions regarding potential impacts to water quality as a result of land use changes. In conjunction with water quality and lake/watershed information, GIS analysis and computer modeling will be used and developed to advise predictions and answer questions regarding the impact to surface waters from land and water use changes.

Through the continued monitoring and data collection on Itasca County's surface waters, the county will continue to strengthen its lake and river management program. In the early 1990s, the focus was on large watershed studies of impacted lakes, including Lake Winnibigoshish,

Cass Lake and Trout Lake. Proactive lake management was accelerated in the late 1990s with the inclusion of Deer Lake as one of five lakes in the state's pilot "Lake Sustainability" program. Following that project, in 2001, nine of the county's 27 lake associations had completed lake management plans that also incorporated leadership training, through the "Healthy Lakes" program of the McKnight Foundation. Since 2008 the MPCA has led water quality sampling efforts in Itasca County through the WRAPS process. The majority of our annual sampling work now is as the result of contracts with the MPCA to collect needed data for WRAPS document establishment.

Shoreland and watershed management activities will focus on the most significant factors that affect lake conditions. These are primarily septic systems, near-shore land use activities, development, silvicultural practices, and erosion control. Additional focus has been put on urban storm-water management in recent years by the County and SWCD. In 2015 a BWSR AIG grant was completed in which an initial low hanging fruit storm-water analysis of the City of Grand was completed. One large beneficial project was identified, applied for, and installed the fall of 2017 through a secured BWSR Projects and Practices grant. Then, in 2018, a grant was secured through the MASWCD Area 8 Joint Powers Board to take a closer look at necessary beneficial storm-water improvement measures in the City of Grand Rapids. A second JPB grant was secured in 2018 to assess storm-water improvement needs for the city of Coleraine. Both these assessments were completed in 2018, and an objective of the County and SWCD in the years ahead will be securing grant funds to implement the recommendations of those reports.

A joint Minnesota Geological Survey (MGS), Minnesota Department of Health, Mississippi Headwaters Board and Itasca County well location verification survey has been incorporated into the new County Well Index and includes detailed well log information. The Minnesota Department of Natural Resources is heading up additional groundwater studies on the Mesabi Iron Range. Specific groundwater-related studies have also been undertaken to increase understanding of groundwater-surface water quality.

Beginning in late 2001 and completed in 2004, the surficial geology and gravel resources of Itasca County was mapped. The three-year project is a combined effort of the county highway department, MDNR and MGS. The primary goal of the project was to delineate areas favorable for road building material; however, another major benefit of the mapping will be significantly increased knowledge of groundwater resources.

In June 2003 Bemidji State University (BSU) in coordination with the Mississippi Headwaters Board completed a study, funded by the Legislative Commission on Minnesota Resources, on the relationship between property and water titled "Lakeshore Property Values and Water Quality". The major finding of this research shows that water clarity significantly affects prices paid for lakeshore properties located on Minnesota Lakes within the Mississippi Headwaters Board region, and that the relationship is positive. Their recommendations state that: 1) changes in lake water clarity will result in millions of dollars in property values—lost or gained—in this lake region of Minnesota and 2) for economic reasons alone—not to mention the ecological health and social benefits at stake—it is important to protect the water quality of all Minnesota's lakes.

The WPIC, Itasca SWCD Board, County Environmental Services, and Board of County Commissioners have begun, and intend to continue, establishing watershed management plans for the primary four watersheds of the County; Little Fork, Big Fork, Upper Mississippi River Headwaters, and Upper Mississippi River Grand Rapids. Itasca County is currently participating in the beginning phases of a 1W/1P grant for the UMHW. Once complete, these watershed plans will become the primary planning tool, replacing the County Water Plan as the primary planning tool.

Significant Itasca County Water Plan Accomplishments and Partners, 2012 through 2018

1. **2012 (SFY13) Mn Flood Relief Grant**: $25,000 provided to 9 landowners for soil and water saving restoration projects as the result of erosion caused during the summer 2012 11-inch rain event; 8 shoreline stabilization and/or buffer projects, and one drainage improvement project. – BWSR, shoreland owners and ag producers, Itasca SWCD.

2. Completion of the **Deer (Cohasset) and Pokegama Lakes MPCA Clean Water Partnership (CWP) grant** to study the conditions of two un-impaired lakes of high economic value, and determine a management plan to maintain or improve their condition. Lake, adjacent ground water, lake bottom spring, and rainfall sampling was performed to determine lake water input sources and condition. From this and additional data, a "program element and milestone schedule" and "implementation project budget" tables were created to summarize next step recommendations. – MPCA, RMB ICC lab, IWLP (now Itasca Waters), Iowa State University, University of Missouri, Deer and Pokegama Lake Associations and property owners, Itasca SWCD.

3. Partner in MHB funded, **initial City of Grand Rapids Storm-water management assessment**, to identify retrofit storm-water management improvement projects; completed December 2014 by contractor HDR. – MHB, City of Grand Rapids Mn, Itasca SWCD.

4. 2015 through 2016 administered grant to establish **Forest Stewardship sustainable management plans in seven of the highest priority Itasca County tullibee lakesheds**, by coordinating between interested landowners and plan writers; 8 plans created. – Mn DNR, forest owners, consultant foresters, Itasca SWCD.

5. 2015, establishment of 5 **Mn Agricultural Water Quality Certification Program** certified agricultural producers. – Mn Dept of Ag, ag producers, Itasca SWCD.

6. **Since 2015, administration of Aquatic Invasive Species (AIS) Control and Monitoring program in Itasca County. –** State of Minnesota, Itasca County Commissioners, Itasca County Environmental Services, Itasca County lake users, Itasca SWCD.

7. Fiscal years 2015 and 2016 **BWSR AIG Large-lake Screening for Future Watershed Protection Efforts grants.** Lake assessment and recommendation reports completed, by RMB Laboratories, for all 73 lakes in Itasca County with ten years or more of continuous approved survey data. – BWSR, RMB Laboratories, Crow Wing SWCD, IWLP, and Itasca SWCD.

8. Since 2016, MPCA funded, annual May through September "Watershed Pollutant Load Monitoring Network" (WPLMN) **event based sampling** at Itasca County State Hwy 6 Bigfork River bridge. A second site was added in 2018, at the Hwy 6 Craigsville Bigfork River bridge – RMB ICC lab, MPCA, SWCD.

9. Since 2016, **buffer law implementation and enforcement**. – BWSR, Itasca County Commissioners, Itasca County Environmental Services, Itasca County ag producers, Itasca SWCD.

10. 2016 through 2018 **Enbridge Ecofootprint Deer and Pokegama Lakes Stream Phosphorus Reduction grant**, to implement two recommendations of the Deer/Pokegama diagnostic study. Accomplishments include: 1 - Needed spring through fall monthly deer and pokegama lakes water chemistry sampling data, analysis by RMB ICC lab, and reporting to MPCA. 2 - Stream geomorphology study of 7 Deer Lake and 9 Pokegama Lake minor watersheds identified in the MPCA diagnostic study as contributing excess nutrients to the lakes. 3 - Identification, coordination, survey, and design of a storm-water management improvement project adjacent Highway 169 just south of Grand Rapids – Mn DOT, Enbridge, RMB ICC lab, HRGreen Environmental Consulting, Deer and Pokegama Lake Associations, Itasca SWCD.

11. FY2016 BWSR CWF Projects and Practices Itasca SWCD and **City of Grand Rapids storm-water improvement implementation grant**; one large storm-water retention pond constructed, and one existing catch improved. Grant will be closed out by December 31st 2018. – City of Grand Rapids, HR Green environmental consulting, MHB, and Itasca SWCD.

12. MASWCD JPB funded **phase two storm-water management assessment of the City of Grand Rapids**, to identify potential new projects to improve City Storm-water management; completed summer 2018. – JPB, HR Green, MHB, City of Grand Rapids, and Itasca SWCD.

13. MASWCD JPB funded **phase one City of Coleraine Storm-water management analysis**; completed summer 2018. – JPB, HR Green, MHB, City of Coleraine, and Itasca SWCD.

14. **Since 2017, addition of prevention, awareness and training, and CAP grant components of Aquatic Invasive Species (AIS) program** in Itasca County. **–** State of Minnesota, Itasca County Commissioners, Itasca County Environmental Services, Itasca County lake users, Itasca SWCD.

15. Annual **MPCA Watershed Restoration and Protection Strategies (WRAPS) planning**, to inform the public, receive public input, and assist with plan document establishment; active local partner in the completion of the first LF, BF, and UMHW WRAPS – MPCA, SWCD, conservation partner individuals and groups.

16. Annual **Surface Water Assessment Grant** (**SWAG) contracts** to gather, analyze, and report sampling data to the MPCA, to be used in the WRAPS document establishment process, and beyond. – RMB ICC water lab, MPCA, SWCD.

17. **Two projects cost shared in 2018 with high priority tullibee lakesheds funding**; reforestation planting and biological shoreland stabilization/buffer establishment projects. – BWSR, forest and shoreland owners, Itasca SWCD.

18. One to three **perpetual conservation easements** established annually on priority wild rice lakes, and the Mississippi River, in Itasca County. – BWSR, MHB, forested acreage shoreland owners, Itasca SWCD.

19. One to three **soil and water saving cost share projects** annually through BWSR base grant cost share funding; most typically living shoreland stabilization and native no-mow buffer establishment. – BWSR, landowners, Itasca SWCD.

20. **Shoreland mitigation buffer, vegetative screening, and storm-water management plan guidance and generation** for Itasca County landowners per Planning Commission/Board of Adjustment conditions of variances in shoreland district; six per year on average. – Itasca County Planning Commission/Board of Adjustment, Itasca County Environmental Services, landowners, Itasca SWCD.

21. Annual **Wetland Conservation Act (WCA) administration**. – BWSR, Itasca County Commissioners, Itasca County Environmental Services, City of Cohasset, landowners, Itasca SWCD.

22. **Annual native tree and plant sale.** – Itasca County/Parks Department/Fairgrounds Board, Itasca SWCD, approximately 150 customers annually.

23. **Annual planning and event day volunteer assistance for regional Envirothon**, an environmental competition for junior and senior high school aged students. – MASWCD Area 8, Itasca SWCD, Grand Rapids High school.

24. **Annual shoreland stabilization and storm-water management station presenter for Itasca County 5th grade youth water summit**. – Itasca Waters, Itasca SWCD.

25. Annual education to all age groups at events such as the **Itasca SWCD booth at the Itasca County Fair**.

26. Annual **Mn DNR Ground Water observation contract**; 8 monthly ground water level readings recorded and reported, for 4 wells. – Mn DNR, Itasca SWCD.

27. Annual administration of the **Mn DNR rain gauge program** in Itasca County. – Mn DNR, Itasca SWCD.

28. Shoreland property stabilization and storm-water management BMP guidance to numerous landowners annually through **Shoreland Alterations permitting process,** and on-site review by Environmental Services and the Itasca SWCD. – Itasca County Environmental Services, Itasca SWCD, Mn DNR Waters, I-COLA, individual lake associations.

29. **Update of numerous non-compliant septic systems annually** through Itasca County shoreland ordinance SSTS permitting process. – Itasca County Planning Commission/Board of Adjustment, Itasca Co Environmental Services.

30. **Collaboration among numerous natural resource conservation partners**, including but not limited to I-COLA, IWLP/Itasca Waters, numerous individual lake associations, Great River Greening, NRCS, Chippewa National Forest, Mn DNR, Mn Extension Service, Itasca County Environmental Services, Itasca SWCD.

31. Continually expanding the **Itasca County GIS inventory of SSTS systems** throughout the County. – Itasca County Environmental Services.

32. Guidance provided on **537 shoreland restoration projects** through the shoreland alteration permit process – Itasca County Environmental Services, Itasca SWCD, Mn DNR, I-COLA, numerous lake associations.

33. **Cost share assistance to five low income Itasca County homeowners, to upgrade non-compliant septic systems**, through the BWSR NRBG SSTS "fix-up" Grant, in the amount of $37,171.00 – Itasca County Environmental Services.

34. **Upgraded 44 non-compliant septic systems** through the low interest septic revolving loan program in the amount of $481,608.00– Itasca County Environmental Services.

35. **River Watch program** sampling at 7 Littlefork and Bigfork River sites, 4 times a year, sampled by two high schools, and results provided to the MPCA. $250.00 annually provided to the BF River Board to help fund this program; 7-year total, $1,250.00. – WPIC, Itasca SWCD.

PRIORITY CONCERNS, GOALS, and ACTIONS

Plan amendment effective term: 1/1/2019 through 3/31/2022

The following summary includes more accomplishments than realistic in the three-year term of this plan; priority accomplishments for the 2019 – 2022 term will be identified in the Implementation Plan section.

Total funding needed to maintain current voluntary programming levels for the 3.3-year (39 month) term of the plan is 3.5 million dollars. To implement additional voluntary cost share programming, 5.5 million dollars are needed for the 3.3-year term of the plan. See the following "Grants Related to the Water Plan, Active GRANTS as of January 2019" section for individual project/grant cost values.

PRIORITY CONCERN - SURFACE WATER RESOURCES:

- Goal 1: Increased Improvement Activities focus on Impaired and at Risk Public Waters:

    - Action 1: Utilize resources such as the Itasca SWCD 2017 and 2018 completed RMB lake reports grant findings, MPCA WRAPS, DNR phosphorus sensitivity data, and other accepted sources, to secure funding for impaired and at risk public waters.
    -
    - Action 2: Increase resources to better manage the King Lake Weir, therefore stabilizing water levels and reducing sediment transfer and loading due to bank erosion:
        *Debris removal activities as needed.
        *Beaver control efforts as needed.
        *Secure funding to make adjustments to reduce the ability of beaver to plug the weir; a likely approach is extending the inlet pipe below the water surface, likely designed by MASWCD Area 8 JPB Engineering department.
        *Implement management collaboration strategies, and potential weir donation opportunities; likely collaboration partners include the weir location property owner, the King Lake Association, Itasca SWCD, and Itasca County.

    - Action 3: Increase Small Watershed Focus considerations in water planning strategies.
        *Continue to grow collaboration with Itasca Waters, Great River Greening, Deer Lake Association (Cohasset), and any new partners, in consideration of a MPCA section 319 small watershed focus grant.

- Goal 2: Continued Data Collection and Monitoring:

    - Action 1: Maintain collaboration with the Mn MPCA through the WRAPS process for the six watersheds included in Itasca County.

    - Action 2: Secure funding for sampling priority not addressed through the MPCA WRAPS process, through primarily State and Federal sources.

    - Action 3: Continue to pursue funding for collection of background chloride level monitoring data in area lakes to determine any impact of chloride from road de-icing and dust control practices.

    - Action 4: Continue to support the BF River Board high school student sampling and education River Watch water quality monitoring program.

- Goal 3: Increase 1 Watershed/1Plan Involvement:

    - Action 1: Active involvement in the Beltrami SWCD administered Upper Mississippi River Headwaters Watershed 2018 secured BWSR grant 1W/1P planning process.

    - Action 2: SWCD, County, and WPIC development and adoption of 1W/1P strategy action plan.

    - Action 3: Engage in discussions with partnering Counties and SWCDs to determine priority order of applications to complete 1W/1P plans for the three remaining primary watersheds of Itasca County; Upper Mississippi Grand Rapids, Bigfork, and Little Fork.

    - Action 4: Increase involvement in the "Groundwater Restoration and Protection Strategies" (GRAPS) planning process.

- Goal 4: Continue Youth Education Efforts:

    - Action 1: Annual Itasca County 5th grade Youth Water Summit involvement.

    - Action 2: Involvement in annual Mn regional Envirothon, junior and senior high school student environmental competition.

    - Action 3: Environmental education presentations upon request; AIS, ground water model, pollution dilution, enviroscape storm-water model, other.

PRIORITY CONCERN - LAND USE AND DEVELOPMENT:

- Goal 1: Conserve Wetland Functions:

    - Action 1: Wetland Conservation Act (WCA) enforcement.

    - Action 2: One-on-one and via training sessions, realtor, contractor, and landowner education on natural wetland functions and benefits, the wetland conservation act, and general wetland conservation encouragement.

- Goal 2: Increase Shoreland Stabilization and Buffer establishment:

    - Action 1: Continue project oversight and improvement of shoreland restoration projects through the Environmental Services Shoreland Alteration Permit process.

    - Action 2: Technical implementation and enforcement of the Mn Buffer Law.

    - Action 3: In collaboration with landowners, implement voluntary no mow vegetative buffers.

    - Action 4: Implement shoreland stabilization projects in priority lakesheds to reduce sediment input into public waters, with an emphasis on biological approaches.

    - Action 5: Continue partnerships with conservation groups such as Itasca Waters, the Itasca Coalition of lake Associations (I-COLA), and active individual lake associations.

- Goal 3: Increase active lake and watershed organizations in Itasca County.

    - Action 1: Help facilitate establishment of new, and the strengthening of existing, associations, through the promotion and implementation of available programing.

- Goal 4: Reduce surface and ground water nutrient loading from failing and non-compliant Septic Systems:

    - Action 1: Secure a voluntary landowner participation grant to assist in septic system inspection and upgrade of failing and non-compliant systems; a likely partner is the Deer Lake Association (Cohasset).

    - Action 2: Expand Itasca County septic systems GIS inventory.

    - Action 3: Continued upgrade of high priority non-compliant septic systems, through the BWSR NRBG Septic System Treatment Upgrade program.

- Action 4: Continued upgrade of approximately 45 non-compliant septic systems annually, through the low interest septic revolving loan program.

- Action 5: Continue to provide high percentage cost share funding for the upgrade of non-compliant septic systems, for owners who meet income requirements.

- Action 6: Continued discussions and planning between the WPIC, SWCD, Environmental Services, Itasca County Planning Commission/Board of Adjustment, and County Board of Commissioners, in consideration of voluntary and regulated septic system compliance improvement measures.

- Goal 5: Increase Storm-water Management Improvement Activities:

    - Action 1: Increase involvement with individual landowners on small scale projects.

    - Action 2: Secure grant funding to implement recommendations of the Itasca SWCD 2018 completed Cities of Grand Rapids and Coleraine storm-water assessment and implementation recommendation studies.

    - Action 3: Continued consideration and coordination of pursuing funding for first ever Itasca County comprehensive public road culvert survey.

    - Action 4: Pending completion of a public road culvert survey, secure funding to remediate erosion reduction and impeded water movement improvements of survey identified problem culverts.

- Goal 6: Increased Forest Management Activities and Focus Area Prioritization:

    - Action 1: Continue sustainable forestry management promotion and assistance to County landowners, including but not limited to terrestrial invasive species, disease/insect identification and education, sustainable harvests, promotion of bio-diversity, stewardship planning, and incentive program enrollment such as SFIA and 2c Managed Forest Law.

    - Action 2: Continue to offer an annual spring native tree and plant sale.

    - Action 3: Explore self-supporting funding opportunities to expand forest management assistance programming.

    - Action 4: Utilize prioritization targeting data, such as lake shed assessment reports, and WRAPS recommendations, to prioritize eligible areas for any new forestry grants.

PRIORITY CONCERN – FISH AND WILDLIFE HABITAT:

- Goal 1: Focus activities on identified Outstanding Resources:

    - Action 1: Continue to participate in currently offered perpetual conservation easement programs focusing on high priority wild rice lakes, and the Mississippi River and major tributaries.

    - Action 2: Consider participation in any future programs being considered by DNR, BWSR, MHB, or other partners, to target priority fish and wildlife habitat improvement areas; examples include but are not limited to shallow lakes/bays, high priority tullibee lakes, and MHB's consideration of targeting identified high priority lakes in the Upper Mississippi River Headwaters watershed; high priority MHB Itasca County identified lakes include Pokegama, Deer (Cohasset), and Swan.

    - Action 3: Seek additional funding to fully support easement development, therefore making increased activity more viable.

- Goal 2: Continued Aquatic Invasive Species (AIS) prevention, control, and education:

    - Action 1: Maintain a County AIS management plan, including contingencies if State AIS funding is reduced or eliminated.

    - Action 2: Continued utilization of annual state funding.

    - Action 3: Secure additional AIS management and control grant funding to expand the program.

    - Action 4: Explore AIS management self-funded opportunities, to increase program resilience in the case of State funding reductions.

    - Action 5: Successful completion of the Initiative Foundation Resort Ambassadors grant.

PRIORITY CONCERN – GROUNDWATER QUALITY:

- Goal 1: Increase efforts to protect and improve groundwater quality.

    - Action 1: Continue to make well water coliform, bacteria, nitrate, and arsenic testing kits available at Environmental Services and SWCD offices.

    - Action 2: Continue to offer abandoned well sealing as an eligible practice for cost share assistance.

    - Action 3: Continued monitoring and reporting ground water levels in 4 wells at 3 sites throughout the growing season through annual Mn DNR Ground Water Observation well contracts.

    - Action 4: Continue to support community wellhead protection plans.

    - Action 5: Generate and make available well water arsenic education materials.

Grants Related to the Water Plan:

The Water Plan has resulted in several projects. In order to fund and maintain these projects, the SWCD and Environmental Services Departments have successfully obtained numerous grants. These grants are used to implement and conduct various projects and have been instrumental in maintaining high quality water resources in the county.

Active GRANTS as of January 2019
Administered by SWCD, unless otherwise noted.

Surface Water Resources:

- BWSR Local Water Management (LWM)
  Comprehensive County Water Plan implementation – annually: $10,447.00

- MPCA Watershed Pollutant Load Monitoring Network (WPLMN),
  Itasca County and Craigsville Highway 6 bridges, event based
  water sampling grant – through 6/30/2020: $61,780.26

- MPCA St. Louis, Little Fork, and Big Fork watersheds WRAPS
  civic engagement and planning grant – through 6/30/2020: $18,016.00

- MPCA Little Fork watershed SWAG spring through fall 2019
  monthly water quality sampling of seven lakes; Little Moose,
  Thistledew, Bear, Little Bear, Napoleon, Radison, and Owen
  - through 1/15/2020: $9,101.59

- Upper Mississippi Grand Rapids WRAPS Civic Engagement Planning Grant – through 12/31/2019: $744.00

- BWSR Upper Mississippi River Headwaters Watershed (UMHW) 1 watershed/1 plan establishment grant, in collaboration with SWCDs, County staff, and County officials, in the UMHW watershed: Itasca Co. Specific $: Currently unknown

- BWSR Local Capacity funding – annually: $100,000.00

- BWSR Conservation Delivery general services grant – annually: $18,828.00

Land Use and Development:

- BWSR funded, Wetland Conservation Act (WCA) administration in Itasca County – annually: $44,148.00

- Wetland permitting fees – annually, varies: $2,500.00

- BWSR Buffer Law Implementation administration – annually: $5,000.00

- BWSR Buffer Law Enforcement administration – annually, varies: $50,000.00

- BWSR base grant cost share program – annually: $6,931.00

- County allocation – annually, varies: $100,000.00

- Thousand Lakes & Rivers fund annual interest dividend – varies: $650.00

- River Watch fund annual interest dividend – varies: $900.00

- Fee for service planning assistance – annually, varies: $1,300.00

- Itasca County Environmental Services Administered:
  Annual BWSR NRBG funding:
  - Shoreland Management - Enforcement of State and County Shoreland regulations: $10,107.00

  - Septic Treatment Systems – Enforcement of State and County septic treatment regulations: $18,600.00

  - Septic Treatment Systems Upgrade - Funding for the updating of eligible non-compliant systems: $29,933.00

Fish and Wildlife Habitat:

- Administer BWSR and Mississippi Headwaters Board (MHB) Reinvest in Minnesota (RIM) perpetual conservation easement programs, adjacent high priority wild rice waters, and the Mississippi River, in Itasca Co. – approx. 3 easements/year: $6,000.00

- BWSR Easement Delivery/inspections – annually, varies: $180.00

- Mn AIS County Aid funded: Administer Aquatic Invasive Species (AIS) Prevention, Awareness & Training, Monitoring & Control, & CAP grant programs in Itasca County – annually, varies: SFY19: $650,530.00

- Initiative Foundation Resort Ambassadors grant to increase AIS inspections, decontaminations, and education at resort assesses – three-year term: $210,000.00

- Chippewa National Forest RAC AIS control and monitoring services grant – annually: $10,000.00

Groundwater Quality:

- Mn DNR ground-water observation well contract to monitor & report ground water levels of four wells in Itasca Co–Annually: $720.00

II. ASSESSMENT OF PRIORITY CONCERNS:

This section is a summary of supporting work Itasca County has used to determine and justify the priority concerns, goals, and actions of this water plan.

1995, 2001, and 2006 High Priority Assessment Ranking

The Itasca County Water Plan Implementation Committee reviewed the water resource assessments at their regularly scheduled meeting on May 11, 2006, and ranked the 21 major categories that are found in Attachment B. That assessment also shows the priority rankings as they were determined in 2001 and 1995. The assessment rankings were also reviewed at subsequent public water plan update meetings. Participants at those meetings recommended no significant changes to the rankings. The relative priority ranking of most categories remained the same, but there are some interesting changes. Following is a summary; see page 70 for full results.

Many surface water rankings were unchanged. Quality, land use, and ordinances all remain the highest priority concerns, but they are now joined by pollutant sources, recreational lands and fish and wildlife habitat. The adequacy of recreational lands has steadily increased in priority since 1995, while fish and wildlife recently jumped in concern. Floodplain protection has steadily fallen to low priority since 1995.

Groundwater ranking remained largely unchanged. Pollutants rose slightly in ranking, while land use changes fell in ranking. All three wetland rankings changed. Present and future uses rose close to its originally high ranking, while fish and wildlife has steadily rose to reach a high priority. Floodplain protection rose slightly, after a consistently low ranking.

<u>January 1 2019 through March 31 2022 Amendment:</u>

Water Planning History and Context:

Water management in Minnesota developed as a result of the statewide drought in the late 1970s, which caused the legislature to encourage more effort at the local level to develop and implement local water management plans to better preserve and protect water and related land resources. As a general-purpose unit of government, counties, with their planning and land-use authorities, are uniquely positioned to link many land-use decisions with local goals for surface and groundwater protection and management. Through the Comprehensive Local Water Management Act, counties are encouraged to make this link through the development and implementation of comprehensive local water management plans (county water plans). County water planning efforts began in earnest in the late 1980s as state funding assisted local units of government in developing their water plans. The Board of Water & Soil Resources (BWSR) has oversight responsibilities to ensure that local water plans are prepared and coordinated with existing local and state efforts and that plans are implemented effectively. All parts of Minnesota have state-approved and locally adopted plans in place, most at the County level but many focused on specific watersheds. These local plans focus on priority concerns, defined goals and

objectives, and measurable outcomes. Across the nation, Minnesota is unique in this structure of water management. BWSR's vision for the future is to align local water planning on major watershed boundaries with state strategies towards prioritized, targeted and measurable implementation plans - the next logical step in the evolution of water planning in Minnesota. This "One Watershed, One Plan" effort came about from the Local Government Water Roundtable in 2011 which recommended that the local governments charged with water management responsibility (counties, soil and water conservation districts, and watershed districts) should organize and develop focused implementation plans on a watershed scale.

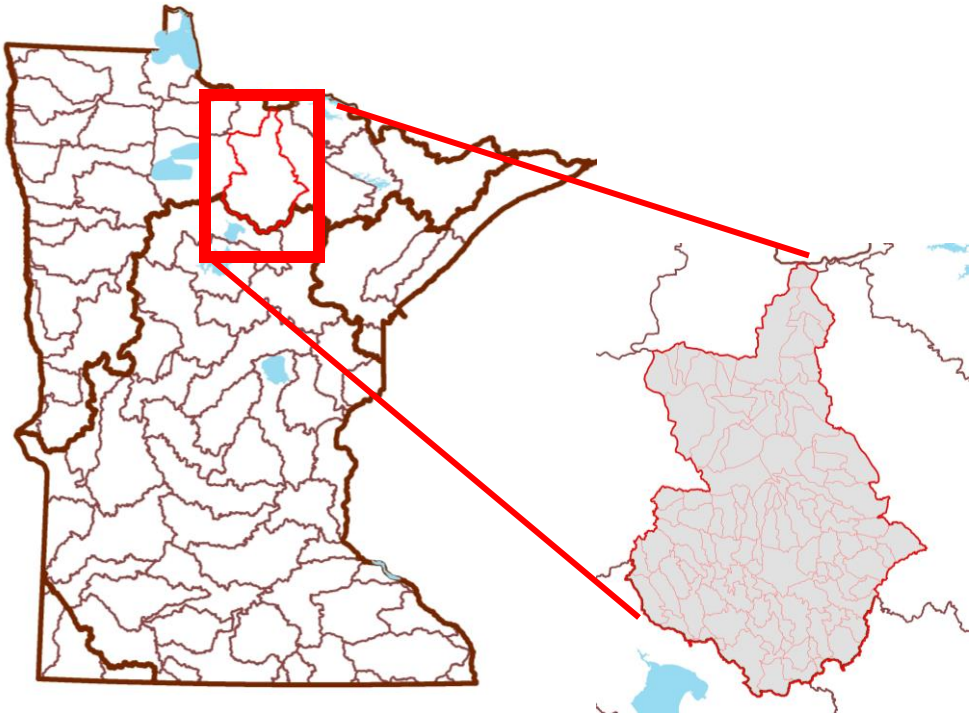
The question becomes at what scale is appropriate? Watersheds are classified at many scales, from region (Level 1) down to sub-region (Level 2) to basin (Level 3) to sub-basin (HUC8-Major, Level 4) to watershed (HUC10, Level 5) to sub-watershed (HUC12, Level 6) and smaller. In Minnesota, the minor watershed (Level 7) is a sub-watershed unit of the HUC12 unit. The Minnesota DNR has also identified smaller sub-watershed units (Catchments: Levels 8 & 9). Although major watersheds (HUC 8) can be analyzed and modeled, it is difficult to manage since they typically cross municipal, county, and/or state boundaries. Planning at the minor watershed level is much easier because features are easier to see and priorities are easier to determine as cause-and-effect relationships are more readily identifiable. "The character of the minor watersheds drives the character of larger watersheds" (Sandy Verry, 2016). Implementation is also easier since many minor watersheds are within a single jurisdiction and strategies can be better targeted and designed for optimal success and cost efficiencies. This approach will ultimately result in healthy major watersheds.

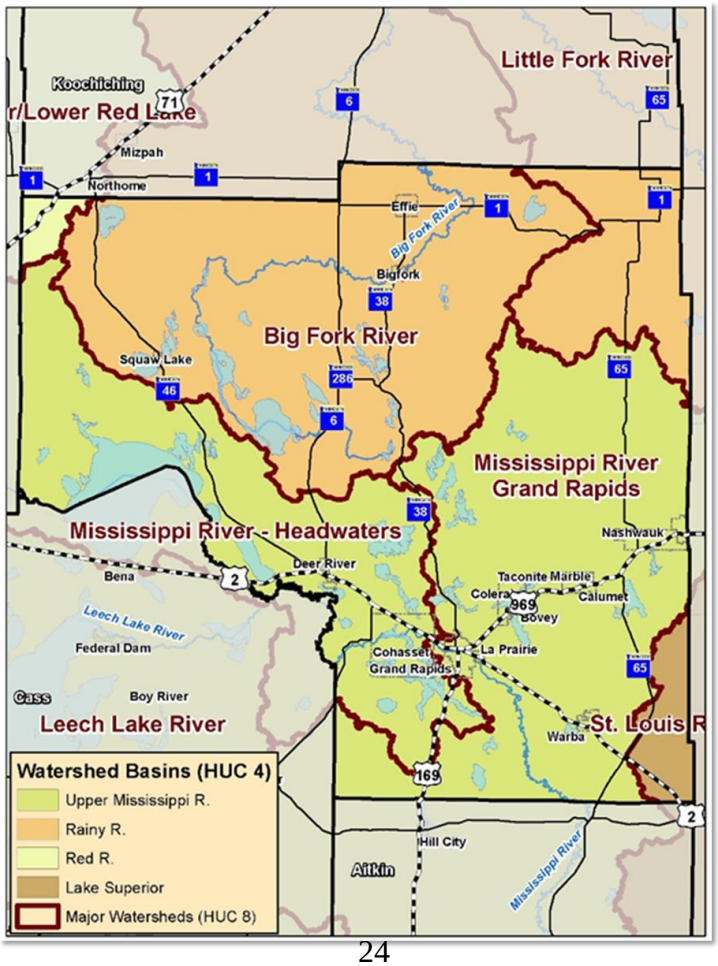
1 County, 6 Watersheds

Water is Itasca County's lifeblood. The County has an area of 2928 sq. miles (approximately 1,874,000 acres), with 50% of that land in a forested land cover, 10% covered by lakes, rivers, and streams and an additional 30% covered by wetlands. 6% is classified as Open Lands (agricultural), 4% developed, and 0.2% extractive (mining).

Itasca County is comprised of 6 major watersheds (HUC 8 scale), with the majority in the Mississippi River – Headwaters, Mississippi River – Grand Rapids, and Big Fork River watersheds. Smaller portions of Upper/Lower Red Lakes, Little Fork River, and St. Louis River are also present. Specific maps and information for each watershed are included in the implementation section of this plan.

Major Watersheds (~1000 sq. miles each), Minor Watersheds (~ 15 sq. miles each):





Priority Concern - Surface Water Resources:

- Goal 1: Increased Improvement Activities focus on Impaired and at Risk Public Waters.
- Goal 2: Continued Data Collection and Monitoring.
- Goal 3: Increase 1 Watershed/1Plan Involvement.
- Goal 4: Continue Youth Education Efforts.

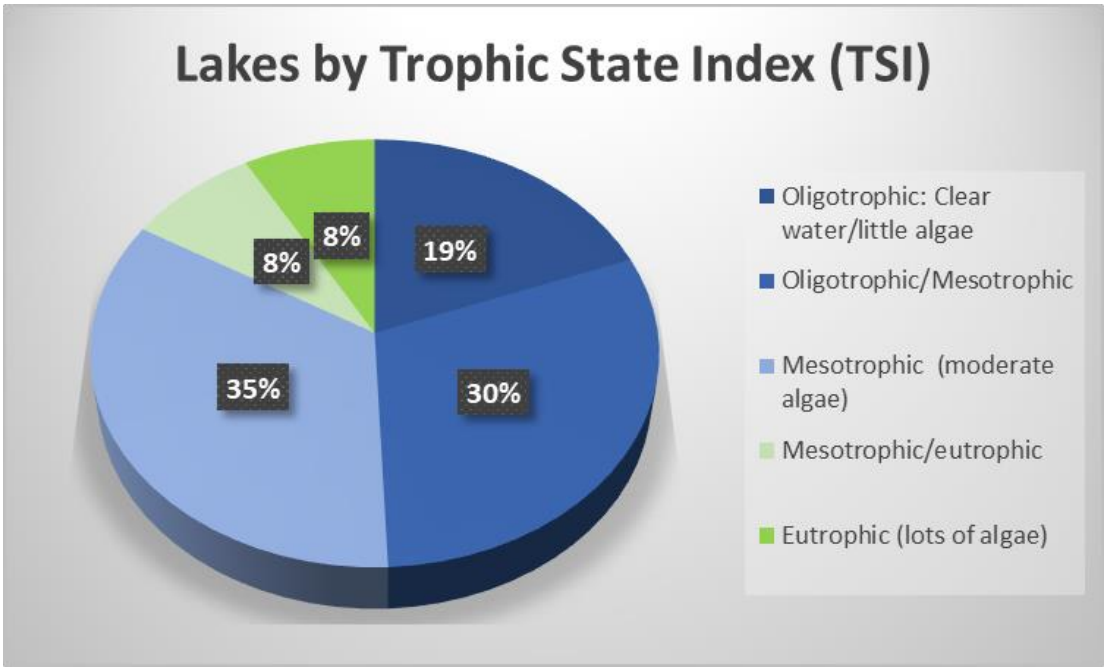
Lake Prioritization Analysis

With over 1,000 lakes in Itasca County, measures will continue to be taken to prioritize restoration and protection efforts were the need and economic benefit is greatest. With funding from the Minnesota Board of Water & Soil Resources (BWSR), Itasca SWCD, and the Itasca Water Legacy Partnership, RMB Environmental Laboratories Inc. conducted a Prioritization Analysis of the Itasca County lakes which have been monitored (off and on) between the 1970s and 2017. This monitoring has been completed by numerous organizations including Lake Associations, Minnesota Pollution Control Agency, Minnesota Department of Natural Resources, Itasca SWCD, Itasca Water Legacy Partnership (IWLP), and the Itasca Community College Laboratory. The purposes of the report from RMB were to compile all available data for these lakes from all the different sources, evaluate the data quality, identify data gaps, assess the data, and look for water quality trends, and prioritize lakes for management.

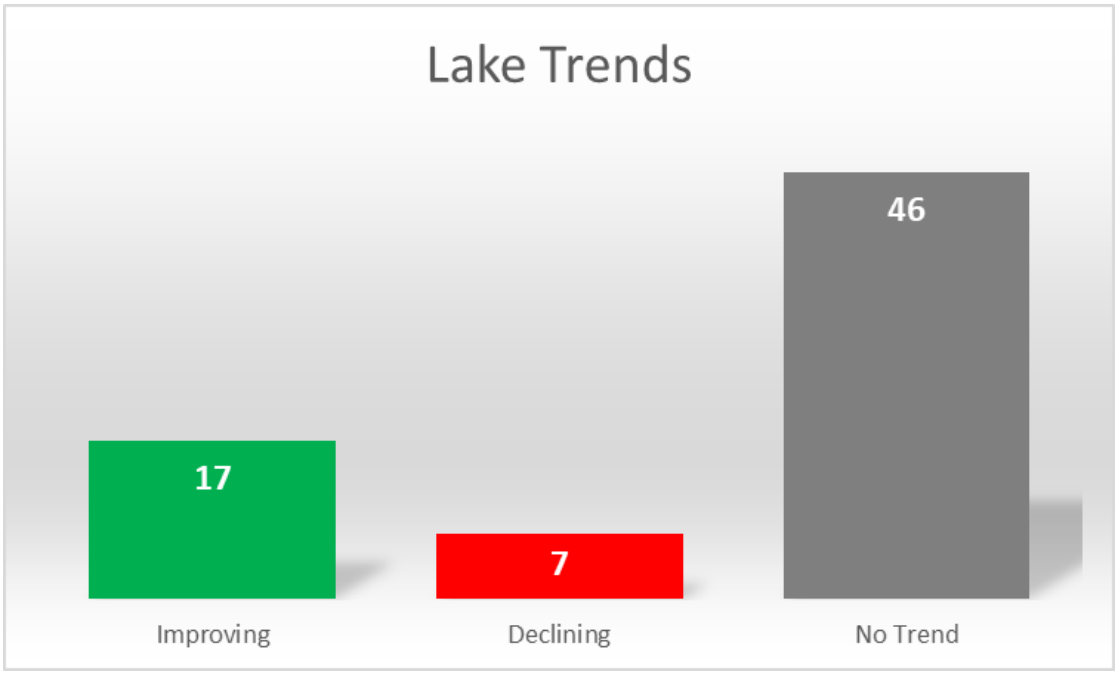
Overall, the lakes in Itasca County that were evaluated in this report have good water quality and are in good condition. Some lakes, such as Trout and Swan, are recovering from past impacts of mining and city sewage, and are almost back to where they were before the impacts. The water quality in the lakes of Itasca County has a lot to do with how the glaciers left the area. The lakes around Jessie, Bowstring, Sand, and Winnibigoshish are large and shallow with more nutrients naturally. The deep lakes near Marcell and Grand Rapids, such as Deer and Pokegama, are naturally very low in nutrients. 72 lakes had enough data to assess as part of RMB analysis. The majority of this Surface Water Resources Priority Concern section is taken from the RMB analysis grants.

Lakes by Trophic State Index (TSI):

TSI = Standard measure for estimating the amount of algae in a lake:



Lake Water Quality Trends:

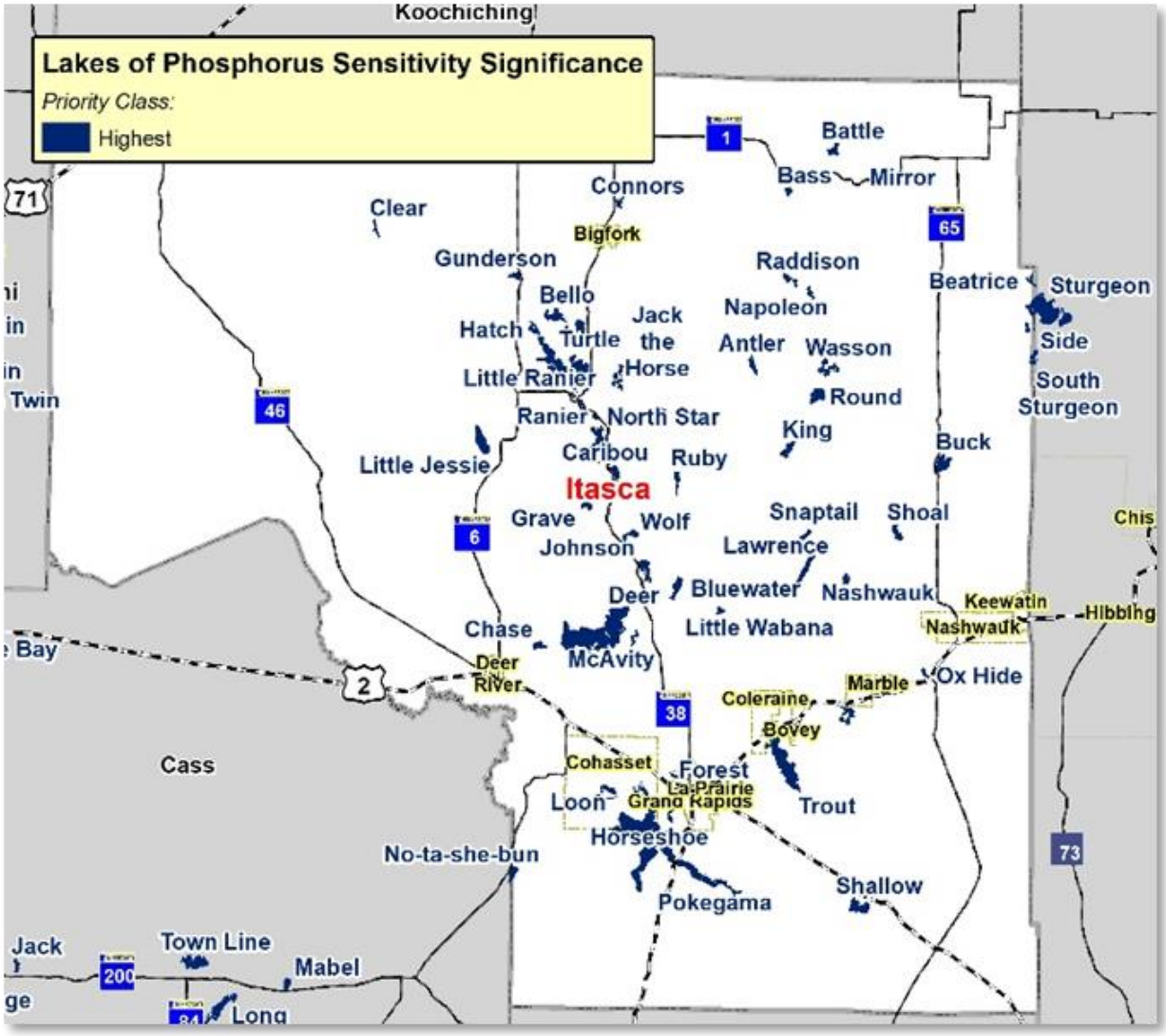


Lakes with a declining trend, based on the parameter "transparency": *Caribou, Jack the Horse, Pickerel (DOW 31-0339), Round (31-0209), Battle, Gum, Beatrice*

Phosphorus / Nutrient Loading Risk:

Risk: Lakes of Phosphorus Sensitivity Significance (source: DNR)

The goal of this list was to objectively prioritize lakes based on their sensitivity to phosphorus pollution. Phosphorus sensitivity was estimated for each lake by predicting how much water clarity would be reduced with additional phosphorus loading to the lake. A phosphorus sensitivity significance index was formulated to prioritize lakes as they relate to Minnesota Pollution Control Agency's (MPCA) policy objective of focusing on high quality, unimpaired lakes at greatest risk of becoming impaired. The phosphorus sensitivity significance index, which is a function of phosphorus sensitivity, lake size, lake total phosphorus concentration, proximity to MPCA's phosphorus impairment thresholds, and watershed disturbance, was used to determine the lake's Priority Class.



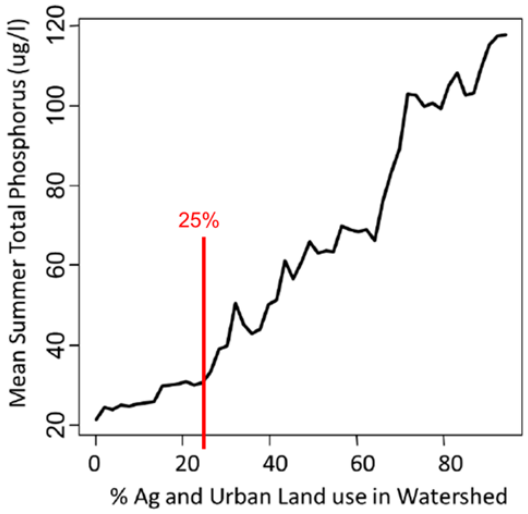
Impaired Waters: 11 (non-Mercury):

Table 9 below lists Itasca County lakes impaired for excess nutrients and eutrophication, as identified by the MPCA final 2018 impaired waters list. MPCA has identified these lakes as beneficial candidates of a Total Maximum Daily Load (TMDL) study. Impaired Lakes with completed TMDLs are not listed.

DOW	Lake	Year added to List	TMDL Target completion
31-0198-00	Little Cowhorn	2018	2019
31-0258-00	King	2018	2019
31-0353-00	Split Hand	2010	2019
31-0797-00	Little Spring	2014	2017
31-0813-00	Bowstring	2014	2016
31-0896-00	Round	2008	2023
31-0910-00	Shallow Pond	2014	2017
31-0913-00	Island	2010	2017
31-0921-00	Dixon	2008	2027
31-0934-00	Decker	2006	2027

DNR Fisheries Approach for Lake Protection & Restoration:

In an effort to prioritize protection and restoration efforts of fishery lakes, the Minnesota DNR has developed a ranking system by separating lakes into two categories, those needing protection and those needing restoration. Modeling by the DNR Fisheries Research Unit suggests that total phosphorus concentrations increase significantly over natural concentrations in lakes that have watershed with disturbance greater than 25%. Therefore, lakes with watersheds that have less than 25% disturbance need protection and lakes with more than 25% disturbance need restoration. Watershed disturbance is defined as having urban, agricultural and mining land uses. The majority of the watershed is in the light green "Needs Protection" category, which is the "sweet spot" for implementation because the forest and water resources are in good shape (ie. forests are not highly disturbed and there is low phosphorus delivery to downstream water bodies); there is opportunity to add protection efforts to achieve the goal of 75%.
Source: Mike Duval & Pete Jacobson, Minnesota Department of Natural Resources



Lake & Watershed Connection

Several key efforts in north-central Minnesota made the connection between the amount of land use disturbance and the amount of forest cover in a watershed and the water quality of downstream lakes. Among the first was an effort led by the Minnesota Board of Water & Soil Resources (BWSR) in partnership with RMB Labs as well as Crow Wing, Cass, and Aitkin Counties that looked at the watershed of some of the larger lakes in each County (lakes > 1000 acres). This effort expanded throughout north-central Minnesota and recently include Itasca. The land in the watersheds of these lakes was divided by ownership (Public vs. Private) as well as by land use class and then further defined into what was considered already "Protected" (yellow box in the chart below). As an example, the chart below shows the watershed of Balsam Lake in Itasca County. Private forested uplands (highlighted in red) make up a significant part of the watershed and are the focal point for additional protection efforts.

Each lakeshed has a different makeup of public and private lands. Looking in more detail at the makeup of these lands can give insight on where to focus protection efforts. The protected lands (easements (not shown), wetlands, public land) form the foundation for maintaining water quality infrastructure for the lake. However, the majority of the land within Balsam Lake's lakeshed is privately owned in forested cover and will decide the future of the water quality in the watershed as this land can either furnish lands for development and or furnish lands for permanent protection efforts. Public land in Minnesota is at times sold and converted to an un-protected state. This prioritization tool however recognizes that the primary management objective for most public forest lands in Itasca County, is to maintain vegetated, sustainably managed lands. *(Sources: County parcel data and the 2011 National Land Cover Dataset).*

These large lake assessment reports can be accessed online at:

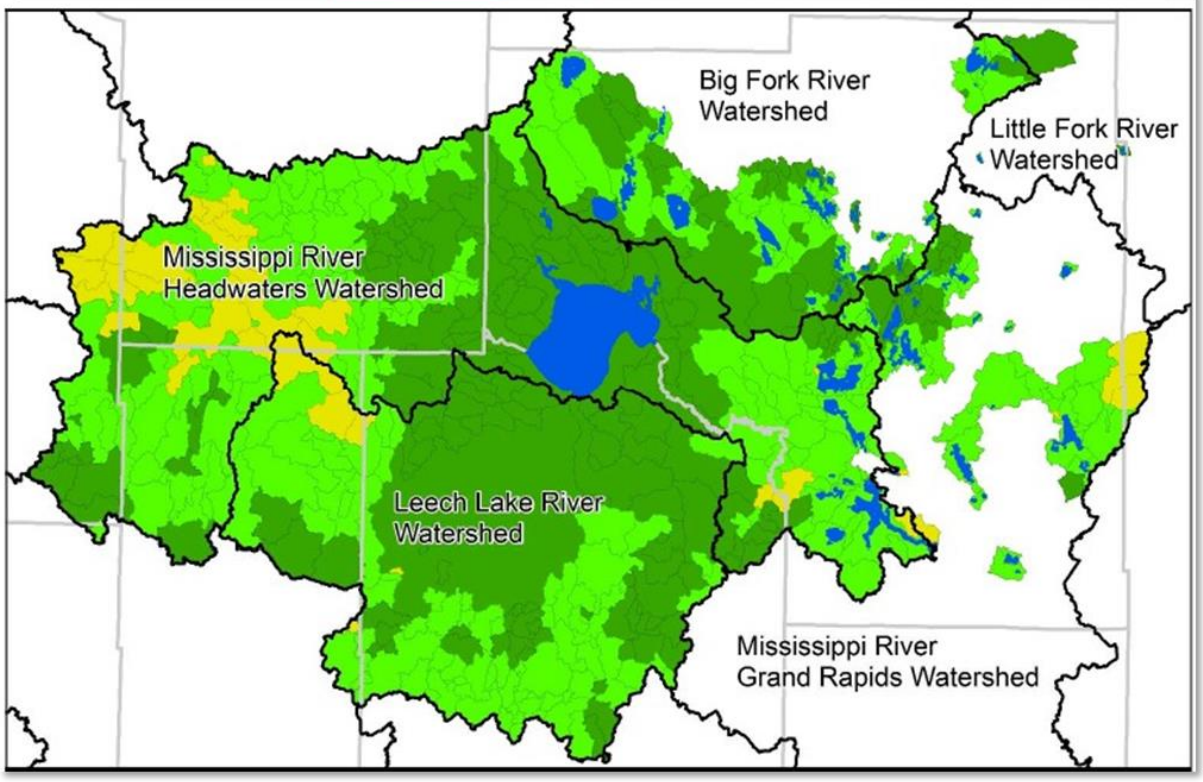
https://www.rmbel.info/?s=lake+reports

	Private (75.8)						Public (5.0)		
	Developed	**Agriculture**	**Forested Uplands**	**Other**	**Wetlands**	**Open Water**	**County**	**State**	**Federal**
Land Use (%)	3.88	4.9	48.0	0.46	18.44	19.2	0.06	3.19	1.75
Runoff Coefficient Lbs of phosphorus/acre/year	0.45 – 1.5	0.26 – 0.9	0.09		0.09		0.09	0.09	0.09
Estimated Phosphorus Loading Acreage x runoff coefficient	72 –241	53 –182	179		1.7		0.234	11.85	6.525
Description	Focused on Shoreland	Cropland	Focus of develop-ment and protection efforts	Open, pasture, grass-land, shrub-land	Protected				
Potential Phase 3 Discussion Items	Shoreline restoration	Restore wetlands; CRP	Forest stewardship planning, 3rd party certification, SFIA, local woodland cooperatives		Protected by Wetland Conservation Act		County Tax Forfeit Lands	State Forest	National Forest

Graphic Source: *RMB Environmental Laboratories, Inc.*

Itasca County Conservation method and priority by minor watershed, based on Mn DNR Fisheries 75% lakeshed protection research:

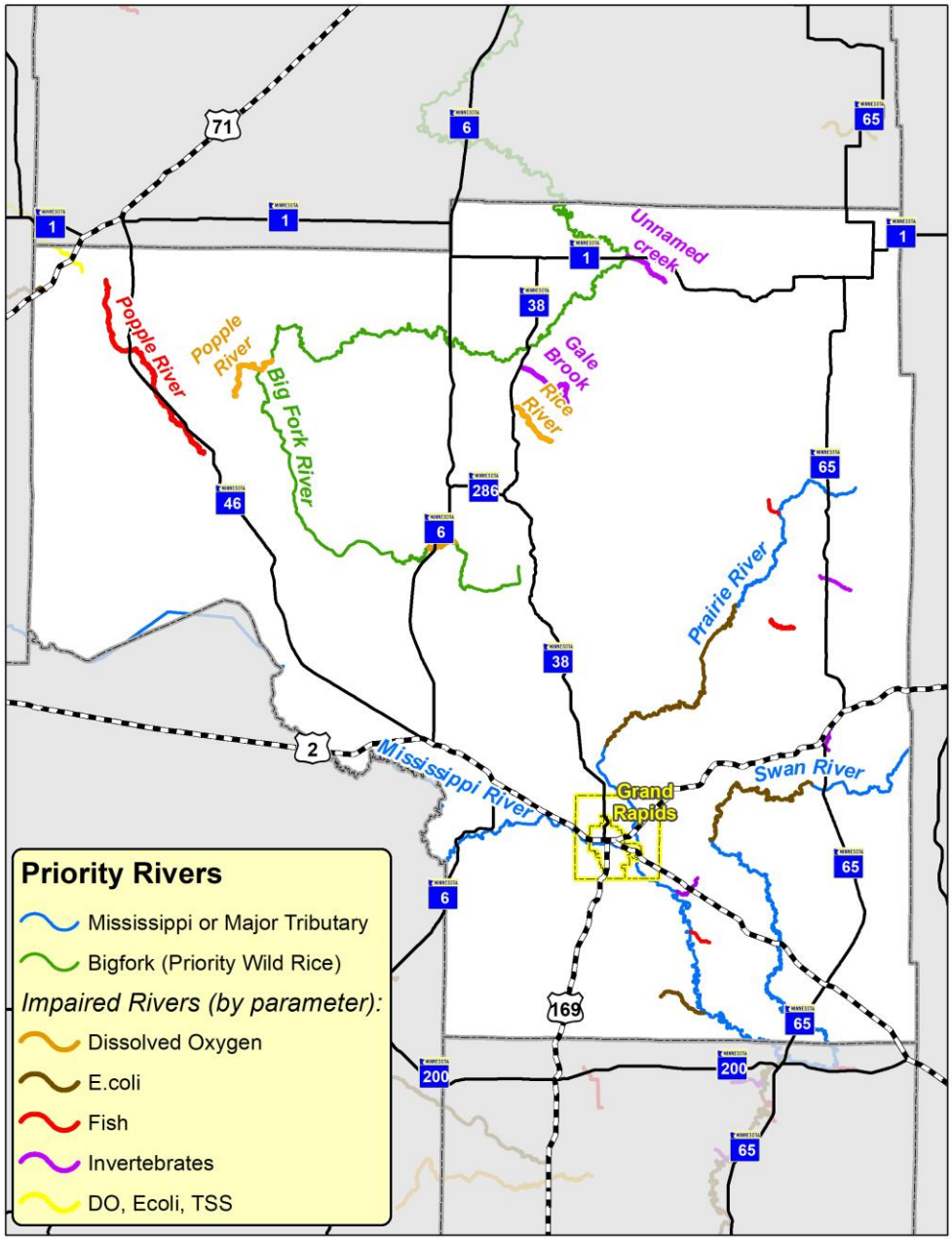
Watershed Disturbance (%)	Watershed Protected (%)	Management Type	Comments
< 25%	> 75%	Vigilance	Sufficiently protected -- Water quality supports healthy and diverse native fish communities. Keep public lands protected.
	< 75%	Protection	Excellent candidates for protection -- Water quality can be maintained in a range that supports healthy and diverse native fish communities. Disturbed lands should be limited to less than 25%.
25-60%	n/a	Full Restoration	Realistic chance for full restoration of water quality and improve quality of fish communities. Disturbed land percentage should be reduced and BMPs implemented.
> 60%	n/a	Partial Restoration	Restoration will be very expensive and probably will not achieve water quality conditions necessary to sustain healthy fish communities. Restoration opportunities must be critically evaluated to assure feasible positive outcomes.



Priority Rivers / Stretches:

- Mississippi and its major tributaries Prairie and Swan, due to existing MHB perpetual conservation easement program.
- MPCA impaired stretches.
- Bigfork River, due to its eligibility in the existing BWSR easement program on high value wild rice waters.

The Big Fork River Board oversees the management plan for the river and has a volunteer monitoring program for the river, modeled on the River Watch program. Two high schools at Littlefork and Bigfork sample at 7 sites, 4 times a year using EPA approved equipment and methods. Over the 24 years of the program, hundreds of students and 4 teachers have participated. Their results are similar to those of the MPCA for the 7 parameters measured and indicate that the entire watershed is in generally good condition.

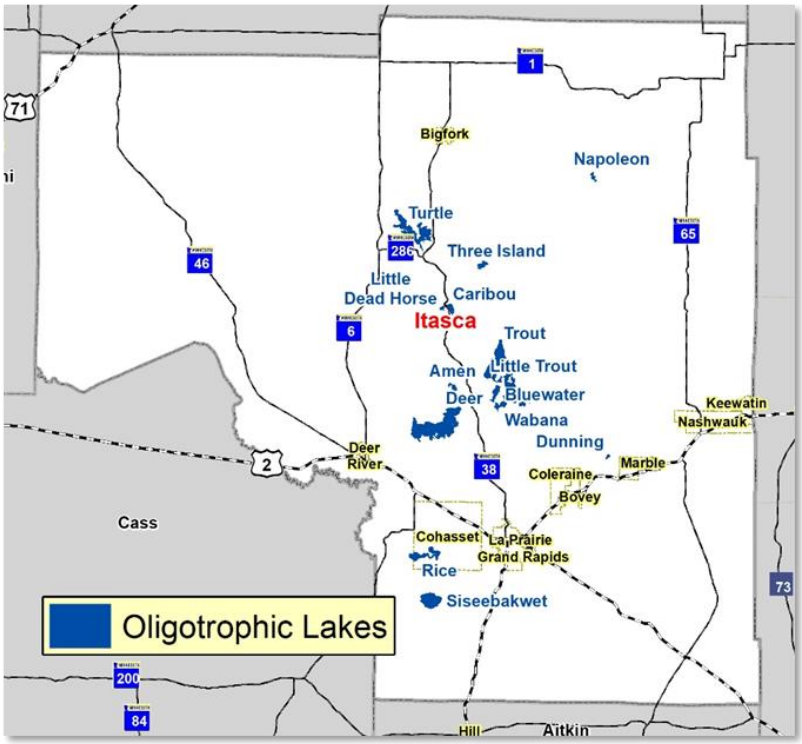


Priority Concern – Land Use and Development:

- Goal 1: Conserve Wetland Functions:
- Goal 2: Increase Shoreland Stabilization and Buffer establishment:
- Goal 3: Increase active lake and watershed organizations in Itasca County.
- Goal 4: Reduce surface and ground water nutrient loading from failing and non-compliant Septic Systems:
- Goal 5: Increase Storm-water Management Improvement Activities:
- Goal 6: Increased Forest Management Activities and Focus Area Prioritization:

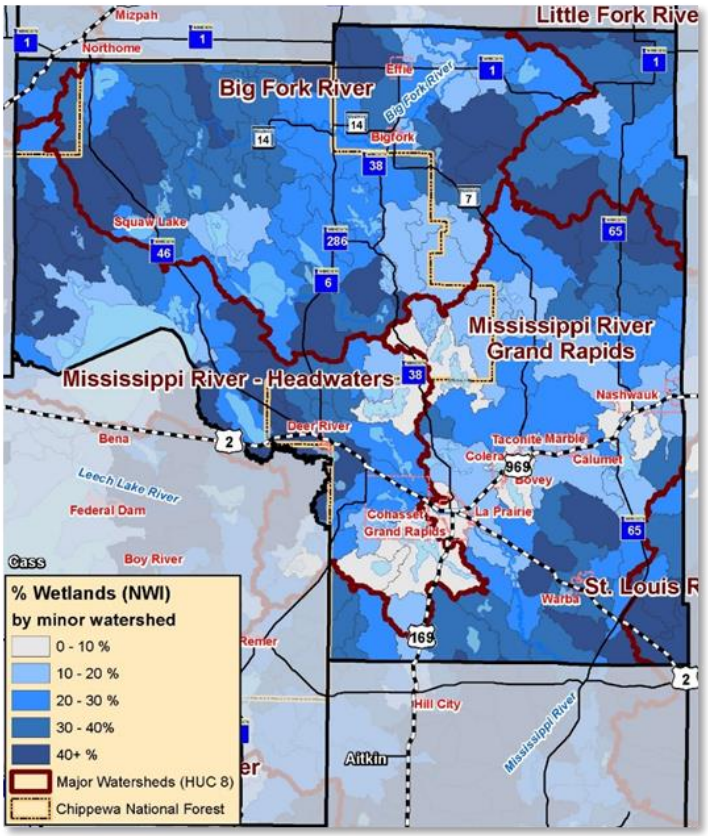
Outstanding Resource: Oligotrophic Lakes (lakes with outstanding water quality)
The lakes listed below have the best water quality of the lakes assessed by RMB labs. The lower the mean TSI, the better the water quality; ie. Caribou is number one based on this parameter.

Lake	Mean TSI	Trophic State
Caribou	30	Oligotrophic
Dunning	35	Oligotrophic
Amen	36	Oligotrophic
Bluewater	36	Oligotrophic
Little Dead Horse	36	Oligotrophic
Three Island	36	Oligotrophic
Trout (410)	36	Oligotrophic
Wabana	36	Oligotrophic
Deer (0719)	37	Oligotrophic
Little Trout	37	Oligotrophic
Siseebakwet	37	Oligotrophic
Napoleon	38	Oligotrophic
Rice	38	Oligotrophic
Turtle	38	Oligotrophic



Wetlands

Approximately 30% of Itasca County is comprised of wetlands. Wetlands are lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. Areas meeting this definition that are located below the ordinary high water level (OHWL) of a lake or average bank height of a stream are regulated as a Public Water by the Department of Natural Resources (DNR). Wetlands are protected by the Wetland Conservation Act (WCA), which is a state regulatory law (source: Minnesota Rules Chapter 8420) designed to achieve no net loss of wetlands, increase biodiversity of wetlands, avoid impacts to wetlands, and replace wetland values where avoidance is not feasible and prudent. In Itasca County, WCA is administered by the Itasca Soil & Water Conservation District.



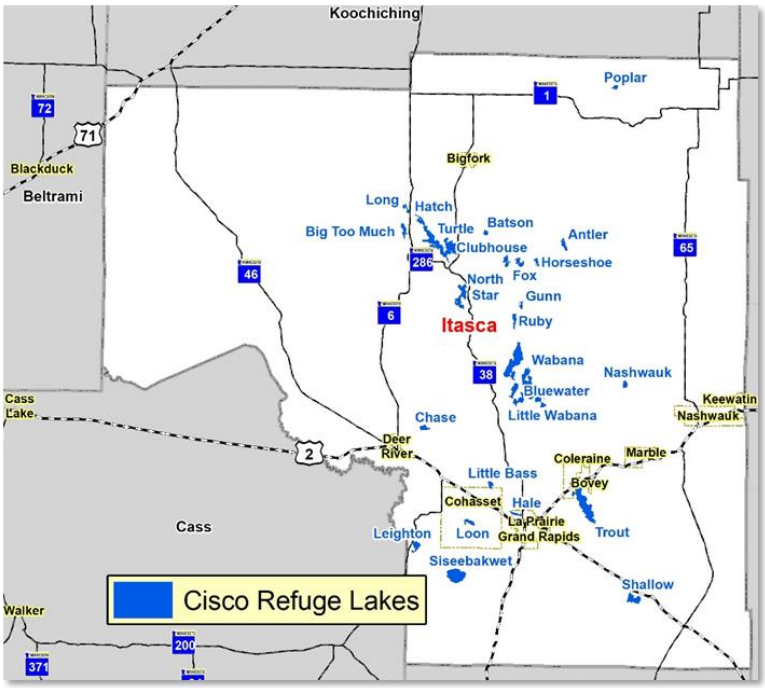
Buffer Law "Other Waters"

Other Watercourses to protect under the Buffer Law, that aren't already protected, was discussed at the April 4th 2017 Itasca County Water Plan Implementation Committee (WPIC) meeting. Since the buffer law already protects all public water lakes and rivers in Itasca County, the feeling of the committee was that the buffer law is adequate, and requiring buffer law implementation on additional "other waters" wasn't necessary; motion was made and carried. The Itasca County Soil and Water Conservation District (SWCD) considered other waters at the May 4th 2017 Board of Supervisors meeting. A motion was made and carried to support WPIC's motion to not protect additional "other waters" under the Buffer Law.

Priority Concern – Fish and Wildlife Habitat:

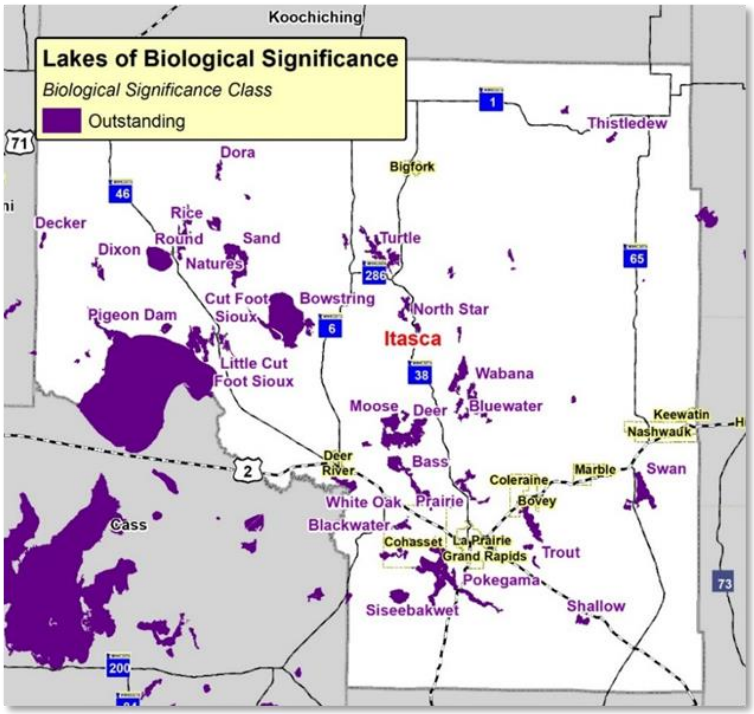
- Goal 1: Focus activities on identified Outstanding Resources:
- Goal 2: Continued Aquatic Invasive Species (AIS) prevention, control, and education:

Outstanding Resource: Cisco Refuge Lakes (source: DNR)



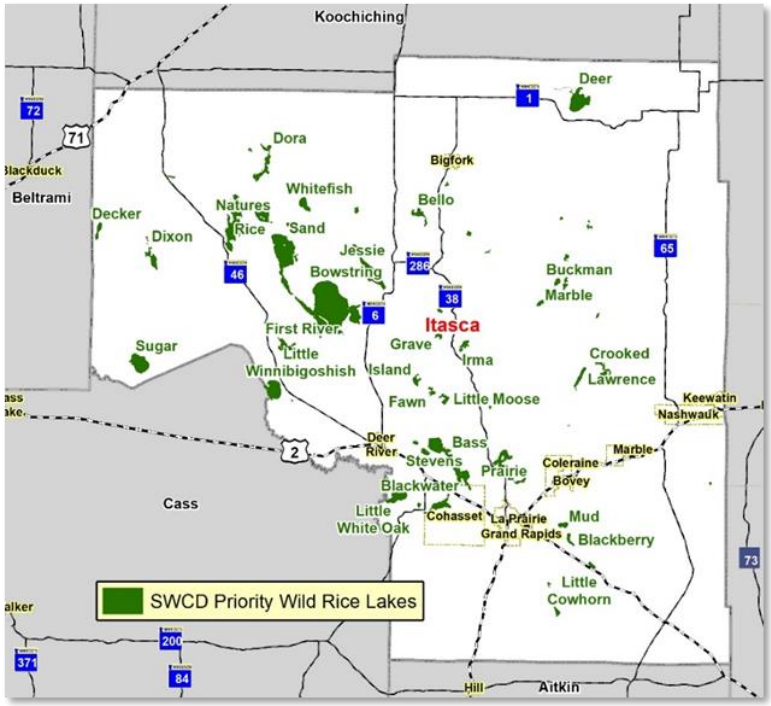
Cisco (also known as tullibee or lake herring) is a cold-water fish that live in many of the nicest lakes in Minnesota. They provide excellent forage for trophy walleye, northern pike, muskellunge, and lake trout. A requirement for cold, well-oxygenated water allows them to primarily live in deep lakes that have good water quality. Cisco refuge lakes were identified by the University of Minnesota and Minnesota DNR Fisheries Research (Xing Fang, Liping Jiang, Peter C. Jacobson, Heinz G. Stefan, Shoeb R. Alam & Donald L. Pereira (2012). They are deep and clear enough that they will still provide suitable cold-water fish habitat even after significant climate warming. Cisco refuge lakes are classified as Tier 1 (the deepest and coldest with exceptional cold-water fish habitat) and Tier 2 (less deep and cold, but still suitable cold-water habitat). Both tiers are shown on the map to the right.

Outstanding Resource: Lakes of Biological Significance (source: DNR)



This layer shows lakes meeting criteria for Lakes of Biological Significance (LBS). Lakes were identified and classified by DNR subject matter experts on objective criteria for four community types (aquatic plants, fish, amphibians, birds). Unique plant or animal presence was the primary measure of a lake's biological significance. Lakes were assigned one of three biological significance classes (outstanding, high, or moderate), with only the "outstanding" class lakes shown in the map to the right.

Outstanding Resource: Wild Rice Lakes (source: DNR)



Wild rice is officially the "State Grain" of Minnesota. Minnesota remains the epicenter of this plant's natural range supporting more habitat than any other state in the United States. Wild rice shoreland encompasses a complex of shallow lakes, rivers, and shallow bays of deeper lakes that support rice and provide some of the most important habitat for wetland-dependent wildlife species in Minnesota. Wild rice habitat is especially important to Minnesota's migrating and breeding waterfowl and provides Minnesotans with unique recreation opportunities: hunting waterfowl and harvesting the rice itself for food. With funding from the Lessard-Sams Outdoor Heritage Council, in partnership with BWSR, SWCDs in north-central MN have determined low, medium, and high priority wild rice lakes/streams for protection using this funding. Medium and high priority rice lakes are shown here.

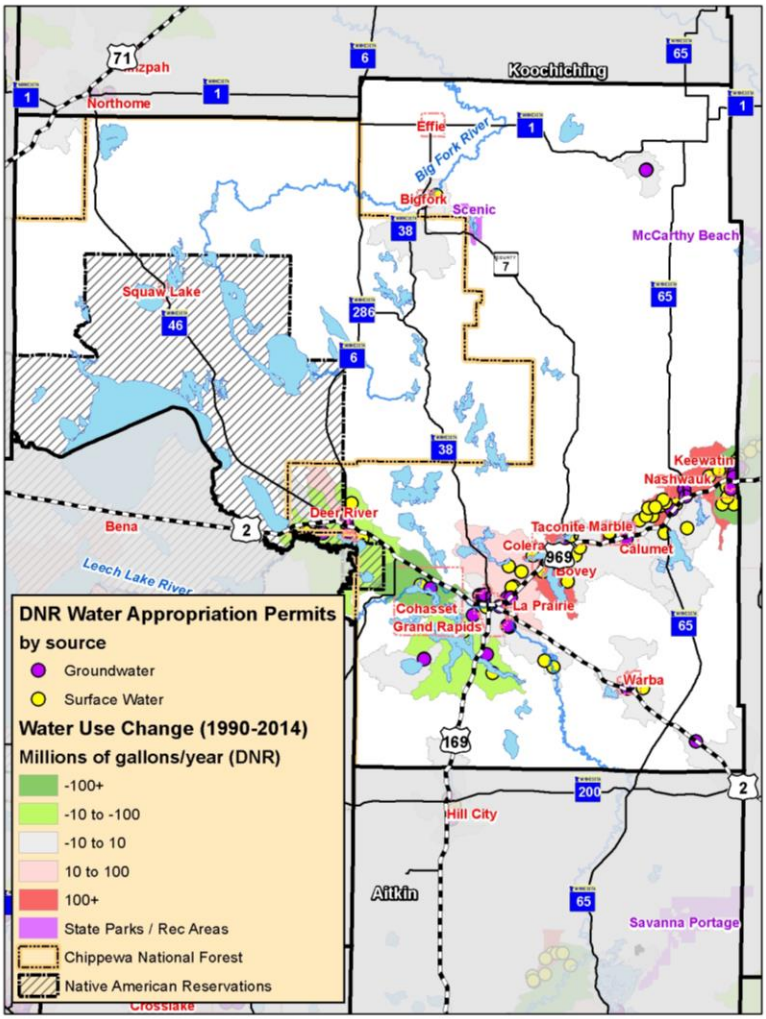
Priority Concern – Ground Water:

- Goal 1: Increase efforts to protect and improve groundwater quality.

Itasca is blessed with an abundance of groundwater. It is estimated that over 70% of Minnesotans use groundwater as their source of drinking water. Other users of groundwater include irrigation, cooling, power generation, extractive use operations, and other industrial uses. Users of over 10,000 gallons per day or 1 million gallons per year are regulated by the Minnesota Department of Natural Resources; the map below illustrates these locations in Itasca County.

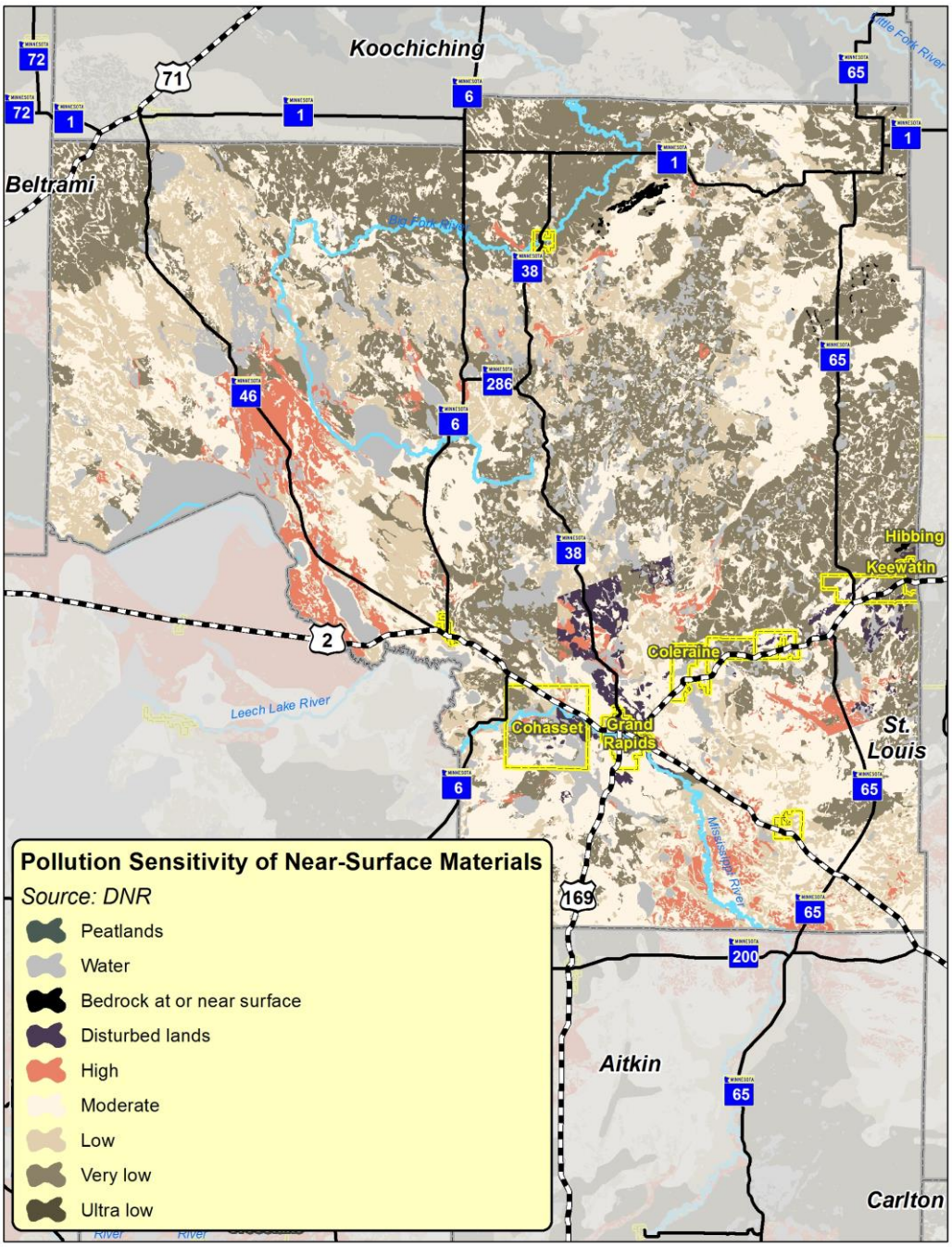
Wise stewardship of this resource is of the utmost importance. Spills and leaks from underground petroleum fuel tanks are common sources of soils and groundwater contamination. Chlorinated cleaning solvents are another significant source of contaminants. Many of these manmade or refined organic compounds, referred to as Volatile Organic Compounds (VOCs), are common in commercial and household products. High nitrogen content fertilizers such as ammonia are a source of nitrate groundwater contamination. Poorly functioning septic systems can also contribute excess nitrogen and phosphorus to the soil and groundwater. Increasing chloride levels from human uses are also a concern.

DNR Water Appropriation Permits



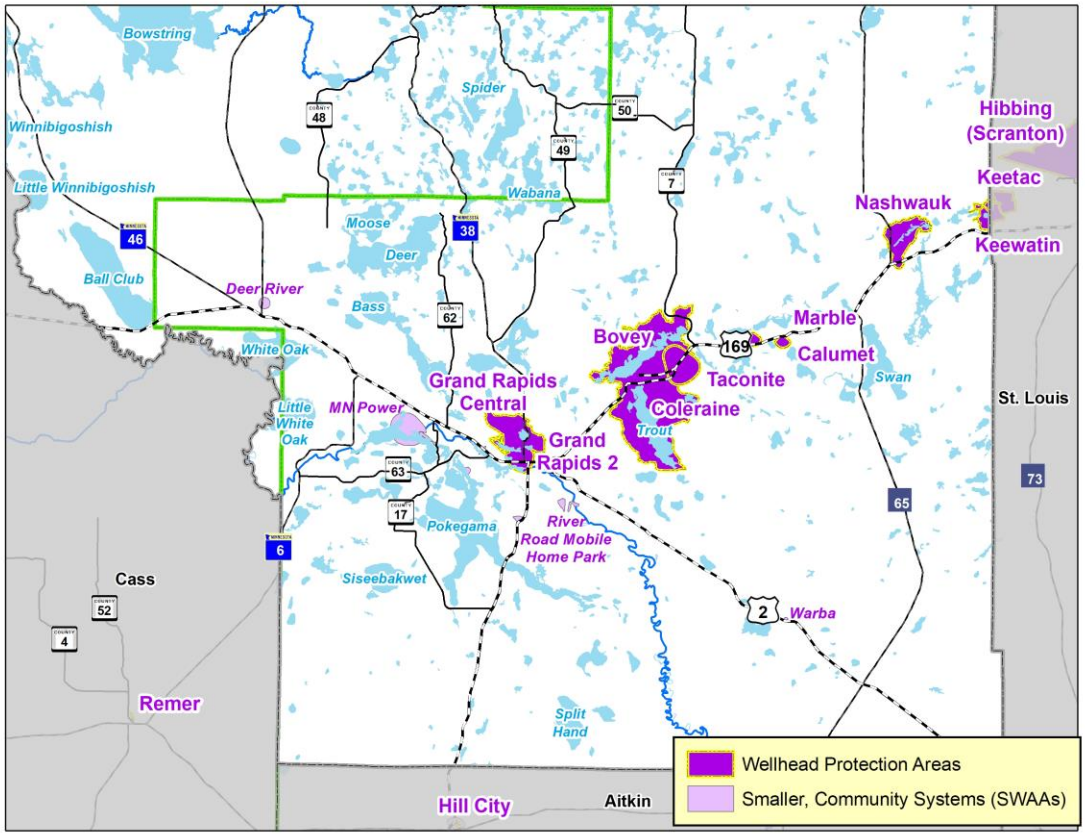
In addition to the land uses of an area, the potential for contamination is influenced by the surficial or "surface" geology (or bedrock geology in the southeastern portion of the state). Since water moves more rapidly through sandy soil, shallow sand-point wells are more susceptible to contamination than deep, drilled wells. Many of the deeper aquifers have clay barriers that limit water movement from upper aquifers. Much of the region around the Itasca County's lakes has a surficial sand aquifer (and thus, many shallow wells). Water table depths in this area are often less than 25 feet. In certain areas within this surficial sandy layer, there is a deeper aquifer below. The Pollution Sensitivity Map below shows that these surficial sandy areas have a higher risk for groundwater contamination.

Pollution Sensitivity of Near-Surface Materials



Wellhead Protection

There are 13 community public water systems, and 234 non-community public water systems in Itasca County. The state of Minnesota requires that all public water systems implement wellhead protection. The type of wellhead protection varies depending on the size of the system. At a minimum, a 200-foot buffer around public water system wells must be assessed and managed for potential contaminants. For community public water systems, a full wellhead protection plan is developed, which identifies the boundaries of the modeled wellhead protection area, and the drinking water supply management area; this is the physically recognizable boundary for the wellhead protection area, where management of potential contaminants occurs. Minnesota Rule requires that the wellhead protection area, is the area where groundwater has a calculated time of travel of 10 years to reach the well. The wellhead protection plan also assesses the vulnerability of the aquifer and well(s) in this area, and creates a plan of action for wellhead protection, including contingencies. Specific reports, called "Source Water Assessments," are also produced by the Minnesota Department of Health and summarize all the information available regarding the water sources used by a public water system.



Abandoned Well Sealing

A well that is not in use, or abandoned, can be a source of groundwater contamination by providing a potential direct path for surface water runoff, contaminated water, or improperly disposed of waste to reach an uncontaminated groundwater source. Unused larger-diameter wells can also be a safety hazard for children and animals. Abandoned well sealing will continue to be an eligible cost share practice through our annual BWSR base grant cost share funding.

III. IMPLEMENTATION PLAN

Includes implementation items through the March 31 2022 expiration of this plan. This is a 3.3-year term, from the January 1 2019 effective date of this plan amendment. Activity detail may not be included for items projected to occur after March 31 2022.

Total funding needed to maintain current voluntary programming levels for the 3.3-year (39 month) term of the plan is 3.5 million dollars. To implement additional voluntary cost share programming, 5.5 million dollars are needed for the 3.3-year term of the plan. For financial values of annual base/block/re-occurring grants, see the Grants Related to the Water Plan - Active GRANTS as of January 2019, section of the EXECUTIVE SUMMARY.

- **"Commitment" status:** Base/Block/re-occurring grant, State mandated, and voluntary status of programs will be identified.
    - Base, block, and re-occurring grant funding is not mandated, but is strongly encouraged by partners (most typically BWSR), and is a non-competitive reoccurring annual allocation of funding. These deliverables will be achieved annually.

    - Mandated programs are required by State Law, to be implemented by Itasca County / SWCD, and are administered by BWSR unless otherwise noted.

    - Voluntary programing will be pursued dependent of adequate staff, non-County grant funding, and the County's ability to provide any necessary match funding.

- Implementation plan detail items include:
    - Departments and Organizations responsible.
    - Financial resources available or needed; unless otherwise noted, current staff will be utilized.
    - Duration.
    - Anticipated results.
    - Directly benefiting watershed/s; if not noted, benefit it County wide.

PRIORITY CONCERN - SURFACE WATER RESOURCES:

- **Goal 1:** Increased Improvement Activities focus on Impaired and at Risk Public Waters:

  - Action 1: Utilize resources such as the Itasca SWCD 2017 and 2018 completed RMB lake reports grant findings, MPCA WRAPS, DNR phosphorus sensitivity data, and other accepted sources, to secure funding for impaired and at risk public waters.

    Commitment: Voluntary; staffing, time, and support dependent.
    Responsibility: SWCD.
    Funding: Unknown.
    Timeline: On-going.
    Result: Improved water quality, County, watershed, and State wide.
    Watershed beneficiary: County wide.

  - Action 2: Increase resources to better manage the King Lake Weir, therefore stabilizing water levels and reducing sediment transfer and loading due to bank erosion:

    *Debris removal activities as needed.
    *Beaver control efforts as needed.
    *Secure funding to make adjustments to reduce the ability of beaver to plug the weir; likely designed by MASWCD Area 8 JPB Engineering department.
    *As needed, implement management collaboration strategies, and potential weir donation opportunities

      Commitment: Voluntary, continued, and obligated due to weir ownership.
      Responsibility: SWCD will coordinate. Additional active partners will include Mn DNR fisheries and hydrology, the King Lake Association, the weir site landowner, and NC JPB engineering.
      Funding: Ideal upper end budget: $270,000.00.
      SWCD plans to apply for Mn DNR CPL grant in 2019. SWCD will work with potential partner organizations such as Ducks Unlimited, Itasca Waters, Blandin Foundation, King Lake Association, etc, to secure grant match (10% CPL grant minimum).
      - Preliminary designs have been completed for two designs, extended deep water inlet ($20,000.00) and box culvert with rock cross weirs ($270,000.00). Box culvert with rock cross weirs is preferred by DNR Fisheries for fish passage, and will first be pursued, funding and landowner support dependent.
      - Primary beneficiaries include King Lake residents, King Lake fish and wildlife (water-fowl nesting and fishing spawning), and the SWCD/County (reduced cost and maintenance).
      Timeline: 2019 grant application, completion by 2021.

Result: Reduced - beaver damming, and therefore water level fluctuation, bank erosion, sediment and nutrient transfer, and SWCD staff time for maintenance.
Watershed Beneficiary: UMGR

- Action 3: Increase Small Watershed Focus considerations in water planning strategies.

  *Continue collaboration with partners in consideration of a MPCA section 319 small watershed focus grant.

  Commitment: Voluntary, additional.
  Responsibility: Grant fiscal agent: SWCD
  Collaboration involvement: Itasca Waters, Great River Greening, and Deer Lake Association (Cohasset).
  Funding: MPCA section 319 small watershed focus grant; value unknown at this time.
  Timeline: 2019 application consideration; grant completion by December 2022.
  Result: Implementation of priorities previously identified for Deer Lake, resulting in increased Lake shed, UMHW watershed, and Upper Mississippi River Basin water resources health.
  Watershed beneficiary: UMHW.

- **Goal 2:** Continued Data Collection and Monitoring:

  - Action 1: Maintain collaboration with the Mn MPCA through the WRAPS process for the six watersheds included in Itasca County.

    Commitment: Voluntary, and continued.
    Responsibility: SWCD.
    Funding: Periodic contracts via competitive applications and MPCA requests/offers.
    Timeline: On-going.
    Result: Improved water quality, County, watershed, and State wide.
    Watershed beneficiary: All within Itasca County, on a continuous rotation.

  - Action 2: Secure funding for sampling priorities not addressed through the MPCA WRAPS process, through primarily State and Federal sources. –

    Commitment: Voluntary, additional.
    Responsibility: SWCD.
    Funding: Unknown at this time.
    Timeline: On-going.
    Result: Improved water quality, County, watershed, basin, and State wide.
    Watershed beneficiary: Unknown at this time.

- Action 3: Continue to pursue funding for collection of background chloride level monitoring data in area lakes to determine any impact of chloride from road de-icing and dust control practices.

  Commitment: Voluntary, and continued.
  Responsibility: SWCD.
  Funding: Options include MPCA, or conservation partners such as WPIC, Itasca Waters, I-COLA, individual lake associations, etc.
  Timeline: On-going.
  Result: Improved water quality, County, watershed, basin, and State wide.
  Watershed beneficiary: Unknown at this time.

- Action 4: Continue to support the BF River Board high school student sampling and education River Watch water quality monitoring program.

  Commitment: Voluntary, and continued.
  Responsibility: SWCD and WPIC.
  Funding: $250.00 annually, from Itasca SWCD River Water endowment fund interest earned.
  Result: Littlefork and Bigfork samples at 7 sites, 4 times a year, and reported to MPCA.
  Watershed beneficiary: BF and LF.

Goal 3: Increase 1 Watershed / 1 Plan Involvement:

- Action 1: Active involvement in the Upper Mississippi River Headwaters Watershed 2018 secured BWSR grant 1W/1P planning process.

  Commitment: Voluntary, and continued.
  Responsibility: Primarily SWCD staff; to a lesser degree, 2 SWCD Supervisors, Environmental Services staff, and two County Commissioners. Beltrami SWCD administered.
  Funding: $234,000.00; application accepted, anticipated contract effective April 2019.
  Timeline: Complete by April 2021.
  Result: Water management plan for the UMHW watershed, to replace this County water plan, for consideration in the UMHW watershed.
  Watershed beneficiary: UMHW

Action 2: SWCD, County, and WPIC development and adoption of 1W/1P strategy action plan.

Commitment: Voluntary, and additional.
Responsibility: Primarily SWCD staff; to a lesser degree, two SWCD Supervisors, Environmental Services staff, and two County Commissioners. Itasca SWCD administered.
Funding: From annual LWM allocation.
Timeline: Spring 2019.
Result: Development and use of, moving forward, a watershed priority order, timeline, and strategy plan, for 1W/1P completion, of the five remaining watersheds of the County - BF, LF, UMGR, St. Louis River, and Red Lakes.
Watershed beneficiary: BF, LF, St. Louis River, and Red Lakes.

- Action 3: Engage in discussions with partnering Counties and SWCDs to determine priority order of applications to complete 1W/1P plans for the three remaining primary watersheds of Itasca County; Upper Mississippi Grand Rapids, Bigfork, and Little Fork. First priority is a combined BF/LF, in collaboration with Koochiching and St Louis Counties, administered by the Itasca SWCD.

  Commitment: Voluntary, and continued.
  Responsibility: Primarily SWCD staff; to a lesser degree, two SWCD Supervisors, Environmental Services staff, and two County Commissioners. Itasca SWCD administered.
  Funding: Anticipated application budget between $225,000 and $475,000.
  Timeline: Summer 2019 application, grant/plan completion by 3-31-2022.
  Result: Combined water management plan for the BF/LF watersheds, to replace this County water plan, for consideration in those watersheds.
  Watershed beneficiary: BF and LF.

- Action 4: Increase involvement in the "Groundwater Restoration and Protection Strategies" (GRAPS) planning process; will be part of the 1W/1P process, for watersheds that have completed GRAPS.

  Commitment: Voluntary, and continued.
  Responsibility: Primarily SWCD staff; to a lesser degree, two SWCD Supervisors, Environmental Services staff, and two County Commissioners. Itasca SWCD administered for Itasca County.
  Funding: Unknown at this time. Likely partially funded with LWM.
  Timeline: On-going 2019 through at least 2023.
  Result: Increased ground water awareness and protection efforts in Itasca County.
  Watershed beneficiary: All 6 in Itasca County.

Goal 4: Continue Youth Education Efforts:

Applicable to all 3 actions below:
Commitment: Voluntary, and continued.
Responsibility: SWCD administered.
Funding: Pending new sources, via County allocation.
Timeline: On-going through the term of this plan.
Result: Increased ground water awareness and protection efforts in Itasca County.
Watershed beneficiary: All 6 watersheds within Itasca County.

- Action 1: Annual Itasca County 5th grade Youth Water Summit involvement.

- Action 2: Involvement in annual Mn regional Envirothon, junior and senior high school student environmental competition.

- Action 3: Environmental education presentations upon request; AIS, ground water model, pollution dilution, enviroscape storm-water model, other.

PRIORITY CONCERN - LAND USE AND DEVELOPMENT:

- **Goal 1:** Conserve Wetland Functions:

  - Action 1: Wetland Conservation Act (WCA) enforcement.

    Commitment: Mandated.
    Responsibility: SWCD administered.
    Funding: BWSR WCA allocation; as of FY19, $44,148.00 annually.
    Timeline: On-going through the term of this plan.
    Result: WCA compliance throughout Itasca County.
    Watershed beneficiary: All 6 within Itasca County.

  - Action 2: One-on-one and via training sessions, realtor, contractor, and landowner education on natural wetland functions and benefits, the wetland conservation act, and general wetland conservation encouragement.

    Commitment: Voluntary, continued, as needed.
    Responsibility: SWCD administered.
    Funding: BWSR WCA allocation; as of FY19, $44,148.00 annually.
    Timeline: On-going through the term of this plan.
    Result: Increased WCA compliance throughout Itasca County.
    Watershed beneficiary: All 6 within Itasca County.

- **<u>Goal 2</u>:** Increase Shoreland Stabilization and Buffer establishment:

    - <u>Action 1:</u> Continue project oversight and improvement of shoreland restoration projects through the Environmental Services Shoreland Alteration Permit process.

        Commitment: Voluntary, on-going.
        Responsibility: Environmental Services Administered.
        Funding: BWSR Shoreland allocation; $10,107.00 annually as of FY19.
        Timeline: On-going through the term of this plan.
        Result: Conservation improvements of 75 permits/projects per year.
        Watershed beneficiary: All 6 in Itasca County.

    - <u>Action 2:</u> Technical implementation and enforcement of the Mn Buffer Law.

        Commitment: Mandated.
        Responsibility: SWCD administered.
        Funding: FY19: BWSR $5,000 buffer law implementation funding, and $50,000 buffer County State Aid funding.
        Timeline: On-going, pending no state law changes.
        Result: Increased buffering of public waters, resulting in water quality improvements.
        Watershed beneficiary: All 6 in Itasca County.

    - <u>Action 3:</u> In collaboration with landowners, implement voluntary no mow vegetative buffers.

        Commitment: Voluntary, continued.
        Responsibility: SWCD administered.
        Funding: At a minimum, annual BWSR Base grant cost share allocation (FY19: $6,931.00) and partially from BWSR Local Capacity allocation. More at times via special grants.
        Timeline: On-going.
        Result: At least one riparian buffer cost share project installed in Itasca County annually.
        Watershed beneficiary: All 6 in Itasca County.

- Action 4: Implement shoreland stabilization projects in priority lake-sheds to reduce sediment input into public waters, with an emphasis on biological approaches.

  Commitment: Voluntary, continued.
  Responsibility: SWCD administered.
  Funding: At a minimum, annual BWSR Base grant cost share allocation (FY19: $6,931.00) and partially from BWSR Local Capacity allocation. Additional, voluntary via award of competitive grant; application staff/time, funding, and support dependent.
  Timeline: On-going.
  Result: At least one shoreland stabilization project installed in Itasca County annually.
  Watershed beneficiary: All 6 in Itasca County.

- Action 5: Continue partnerships with conservation groups such as Itasca Waters, the Itasca Coalition of lake Associations (I-COLA), and active individual lake associations.

  Commitment: Voluntary, on-going.
  Responsibility: Environmental Services and SWCD involvement.
  Funding: Funded via County allocation.
  Timeline: On-going.
  Result: Increased conservation, due to joined forces.
  Watershed beneficiary: All 6 in Itasca County.

- **Goal 3:** Increase active lake and watershed organizations in Itasca County.

  - Action 1: Help facilitate establishment of new, and the strengthening of existing, associations, through the promotion and implementation of available programing.

    Commitment: Voluntary, continued.
    Responsibility: SWCD and Environmental Services administered.
    Funding: Funded via County allocation.
    Timeline: On-going.
    Result: Increased conservation, due to joined forces.
    Watershed beneficiary: All 6 in Itasca County.

- **Goal 4:** Reduce surface and ground water nutrient loading from failing and non-compliant Septic Systems:

    - Action 1: Secure a voluntary landowner participation grant to assist in septic system inspection and upgrade of failing and non-compliant systems in phosphorus sensitive and impaired priority lakesheds; a likely partner is the Deer Lake Association (Cohasset).

        Commitment: Voluntary, support and funding dependent.
        Responsibility: Environmental Services, SWCD, County Commissioners, Planning Board/Board of Adjustment.
        Funding: $2 million dollar estimated grant value.
        Timeline: Dependent on SWCD and County support, and receipt of grant funding.
        Result: Improved surface and ground-water quality due to the upgrade of 100 failing and non-compliant septic systems.
        Watershed beneficiary: All 6 in Itasca County.

    - Action 2: Expand Itasca County septic systems GIS inventory.

        Commitment: Voluntary, continued.
        Responsibility: Environmental Services, SWCD, County Commissioners, Planning Board/Board of Adjustment.
        Funding: County allocation.
        Timeline: On-going, continued.
        Result: Improved tracking of system locations and status.
        Watershed beneficiary: All 6 in Itasca County.

    - Action 3: Continued upgrade of high priority non-compliant septic systems, through the BWSR NRBG Septic System Treatment Upgrade program.

        Commitment: Voluntary, continued.
        Responsibility: Environmental Services.
        Funding: BWSR NRBG, FY19: $18,600.00.
        Timeline: On-going, continued.
        Result: State and County SSTS regulations enforcement.
        Watershed beneficiary: All 6 in Itasca County.

    - Action 4: Upgrade of non-compliant septic systems, through the low interest septic revolving loan program.

        Commitment: Voluntary, continued.
        Responsibility: Environmental Services.
        Funding: Revolving loan.
        Timeline: On-going, continued.
        Result: 30 systems updated annually.
        Watershed beneficiary: All 6 in Itasca County.

- Action 5: Continue to provide high percentage cost share funding for the upgrade of non-compliant septic systems, for owners who meet income requirements.

  Commitment: Voluntary, continued.
  Responsibility: Environmental Services.
  Funding: BWSR NRBG, FY19: $29,933.00.
  Timeline: On-going, continued.
  Result: 1 or 2 systems annually.
  Watershed beneficiary: All 6 in Itasca County.

- Action 6: Discussions and planning between the WPIC, SWCD, Environmental Services, Itasca County Planning Commission/Board of Adjustment, and County Board of Commissioners, in consideration of voluntary and regulated septic system compliance improvement measures.

  Commitment: Voluntary, continued.
  Responsibility: Environmental Services.
  Funding: County allocation.
  Timeline: On-going.
  Result: Potential improved water quality as the result of County regulation changes and voluntary programing.
  Watershed beneficiary: All 6 in Itasca County.

- **Goal 5:** Increase Storm-water Management Improvement Activities:

  - Action 1: Increase involvement with individual landowners on small scale projects.

    Commitment: At a minimum, via base grant funding, and voluntary beyond.
    Responsibility: SWCD.
    Funding: BWSR Base Grant cost sharing funding at a minimum ($6,931.00), additional via any special grants.
    Timeline: On-going.
    Result: At least one storm-water management improvement cost share project annually.
    Watershed beneficiary: All 6 in Itasca County.

- Action 2: Secure grant funding to implement recommendations of the Itasca SWCD 2018 completed Cities of Grand Rapids and Coleraine storm-water assessment and implementation recommendation studies.

  Commitment: Voluntary, but high priority due to assessment completion.
  Responsibility: SWCD.
  Funding: Currently undetermined.
  Timeline: At least one competitive application for one or both cities prior to 2020.
  Result: At least one large storm-water improvement project installed by 3-31-2022 expiration of this plan.
  Watershed beneficiary: UMGR.

- Action 3: Continued consideration and coordination of pursuing funding for first ever Itasca County comprehensive public road culvert survey.

  Commitment: Voluntary.
  Responsibility: Primarily SWCD, with Environmental Services and Highway Department collaboration.
  Funding: Currently undetermined.
  Timeline: County interest level discussion in 2019.
  Result: County wide inventory, to then prioritize potential water and soil saving improvement projects, and consider implementation grant funding.
  Watershed beneficiary: All 6 within Itasca County.

- Action 4: Pending completion of a public road culvert survey, secure funding to remediate erosion reduction and impeded water movement improvements of survey identified problem culverts.

  Commitment: Voluntary.
  Responsibility: Primarily SWCD, with Environmental Services and Highway Department collaboration.
  Funding: Currently undetermined.
  Timeline: Pending completion of culvert survey.
  Result: Improved surface and ground-water quality, and natural water movement, due to slope and position improvement of multiple culverts.
  Watershed beneficiary: All 6 within Itasca County.

- **Goal 6:** Increased Forest Management Activities and Focus Area Prioritization:

    - Action 1: Continue sustainable forestry management promotion and assistance to County landowners, including but not limited to terrestrial invasive species, disease/insect identification and education, sustainable harvests, promotion of bio-diversity, stewardship planning, and incentive program enrollment such as SFIA and 2c Managed Forest Law.

        Commitment: Voluntary, continued.
        Responsibility: SWCD administered.
        Funding: County allocation.
        Timeline: On-going.
        Result: Improved water quality, as the result of increased sustainable forest management.
        Watershed beneficiary: All 6 within Itasca County.

    - Action 2: Continue to offer an annual spring native tree and plant sale.

        Commitment: Voluntary, continued.
        Responsibility: SWCD administered.
        Funding: Sale proceeds, and balance via County allocation.
        Timeline: On-going.
        Result: Improved water quality, as the result of increased vegetative planting. 130 landowner participants annually. Mn native, northern Minnesota hardy vegetation on the landscape annually: 5,000 trees, 100 shrubs, 500 wildflowers/grasses/sedges, and 5 pounds of wildflower/grass/sedge seed.
        Watershed beneficiary: All 6 within Itasca County.

    - Action 3: Explore self-supporting funding opportunities to expand forest management assistance programming.

        Commitment: Voluntary, additional.
        Responsibility: SWCD administered.
        Funding: Planning: County allocation, Implementation: pending receipt of grant and/or fees.
        Timeline: On-going.
        Result: Improved water quality, as the result of increased sustainable forest management.
        Watershed beneficiary: All 6 within Itasca County.

- Action 4: Utilize prioritization targeting data, such as lake shed assessment reports and WRAPS recommendations, to prioritize eligible areas for any new forestry grants.

  Commitment: Voluntary, additional.
  Responsibility: SWCD administered.
  Funding: County allocation.
  Timeline: On-going.
  Result: Improved water quality, as the result of increased sustainable forest management.
  Watershed beneficiary: All 6 within Itasca County.

PRIORITY CONCERN – FISH AND WILDLIFE HABITAT:

- **Goal 1:** Focus activities on identified Outstanding Resources:

  - Action 1: Continue to participate in currently offered perpetual conservation easement programs, focusing on high priority wild rice lakes, and the Mississippi River and major tributaries.

    Commitment: At a minimal level, continue, voluntary involvement; increased involvement dependent on funding, staffing, and support.
    Responsibility: SWCD administered.
    Funding: Approximately 60% BWSR, and 40% local capacity.
    Timeline: On-going.
    Result: Between 1 and 4 easements annually.
    Watershed beneficiary: All 6 within Itasca County.

  - Action 2: Consider participation in any future programs being considered by DNR, BWSR, MHB, or other partners, to target priority fish and wildlife habitat improvement areas; examples include but are not limited to shallow lakes/bays, high priority tullibee lakes, and MHB's consideration of targeting identified high priority lakes in the Upper Mississippi River Headwaters watershed; high priority MHB Itasca County identified lakes include Pokegama, Deer (Cohasset), and Swan.

    Commitment: Voluntary, additional.
    Responsibility: Would be SWCD administered.
    Funding: Approximately 60% BWSR, and 40% local capacity.
    Timeline: On-going.
    Result: Dependent on support, budget, and staffing.
    Watershed beneficiary: UMHW and UMGR.

- Action 3: Seek additional funding to fully support easement development, therefore making increased activity more viable.

  Commitment: Voluntary, additional.
  Responsibility: Would be SWCD administered.
  Funding: In order to increase likelihood of increased SWCD implementation, all admin costs need to be covered; payment to SWCD needs to increase from $2,000 to $3,500 per easement.
  Timeline: On-going.
  Result: Dependent on support, budget, and staffing.
  Watershed beneficiary: All 6 in Itasca County.

- **Goal 2:** Continued Aquatic Invasive Species (AIS) prevention, control, and education:

  - Action 1: Maintain a County AIS management plan, including contingencies if State AIS funding is reduced or eliminated.

    Commitment: Voluntary, continued.
    Responsibility: Primary administration by SWCD, Environmental Services, and AIS Technical Advisory Committee.
    Funding: County State Aid AIS funding; SFY19: $650,530.00.
    Timeline: On-going.
    Result: Continued long term AIS planning.
    Watershed beneficiary: All 6 in Itasca County.

  - Action 2: Continued utilization of annual state funding.

    Commitment: Voluntary, continued.
    Responsibility: Primary administration by SWCD, Environmental Services, and AIS Technical Advisory Committee.
    Funding: County State Aid AIS funding; SFY19: $650,530.00.
    Timeline: On-going, pending State AIS funding availability.
    Result: Continued AIS education and spread prevention.
    Watershed beneficiary: All 6 in Itasca County.

  - Action 3: Secure additional AIS management and control grant funding to expand the program.

    Commitment: Voluntary, additional.
    Responsibility: Primary administration by SWCD and Environmental Services.
    Funding: Currently unknown grant sources.
    Timeline: On-going.
    Result: Increased AIS education and spread prevention.
    Watershed beneficiary: All 6 in Itasca County.

- Action 4: Explore AIS management self-funded opportunities, to increase program resilience in the case of State funding reductions.

  Commitment: Voluntary, additional.
  Responsibility: Primary administration by SWCD and Environmental Services.
  Funding: Currently unknown.
  Timeline: On-going.
  Result: Increased AIS education and spread prevention.
  Watershed beneficiary: All 6 in Itasca County.

- Action 5: Successful completion of the Initiative Foundation Resort Ambassadors grant.

  Commitment: Voluntary, additional.
  Responsibility: Primary administration by SWCD.
  Funding: $210,000.00.
  Timeline: Completion June 2020.
  Result: Increased AIS education and spread prevention via private resort public water accesses.
  Watershed beneficiary: All 6 in Itasca County.

PRIORITY CONCERN – GROUNDWATER QUALITY:

- **Goal 1**: Increase efforts to protect and improve groundwater quality.

  - Action 1: Continue to make well water total coliform, bacteria, nitrate, and arsenic testing kits available at Environmental Services and SWCD offices.

    Commitment: Voluntary, continued.
    Responsibility: SWCD and Environmental Services Administered.
    Funding: County allocation.
    Timeline: On-going.
    Result: Improved public safety and health.
    Watershed beneficiary: All 6 in Itasca County.

  - Action 2: Continue to offer abandoned well sealing as an eligible practice for cost share assistance.

    Commitment: Voluntary, continued.
    Responsibility: SWCD Administered.
    Funding: Reoccurring annual base grant cost share funding; FY19: $6,931.00.
    Timeline: On-going.
    Result: Improved public safety and health.
    Watershed beneficiary: All 6 in Itasca County.

- Action 3: Continued monitoring and reporting of ground water levels in 4 wells at 3 sites throughout the growing season through annual Mn DNR Ground Water Observation well contracts.

  Commitment: Reoccurring annual voluntary contract.
  Responsibility: SWCD Administered.
  Funding: $720.00/year DNR grant.
  Timeline: On-going.
  Result: Improved Itasca County ground water and drought status data.
  Watershed beneficiary: UMHW and UMGR direct watersheds benefit.

- Action 4: Continue to support community wellhead protection plans.

  Commitment: Voluntary, continued.
  Responsibility: SWCD Administered.
  Funding: County allocation.
  Timeline: On-going.
  Result: Improved public safety and health.
  Watershed beneficiary: All 6 in Itasca County.

- Action 5: Generate and make available water well arsenic education materials.

  Commitment: Voluntary, additional.
  Responsibility: SWCD Administered.
  Funding: County allocation.
  Timeline: On-going.
  Result: Improved public safety and health.
  Watershed beneficiary: All 6 in Itasca County.

IV. WATER PLAN PUBLIC MEETINGS

The Itasca County Board of Commissioners authorized the update of the Itasca County Local Water Plan on February 28, 2006, and amendment of the update September 27 2016; delegated responsibility of coordinating and writing the update was granted to the Itasca County Soil and Water Conservation District (SWCD).

There were five public informational meetings. At each of these meetings, Jim Gustafson, Itasca County Water Plan Coordinator, described the process of updating the County Water Plan and solicited public input. The Priority Concerns Scoping Document was given out which summarized the priority concerns and their respective issues/topics for the water plan update identified by the WPIC. Each priority concern was discussed and elaborated on, as necessary.

The WPIC committee determined geographic areas within the county to conduct the public meetings and solicit input from the broadest range possible. Coordination within these areas to hold the informational meeting in conjunction with other previously scheduled association meetings helped to increase participation and improve the amount of input.

An overview of the raw data collected from the mailed survey to about 40 agencies and organizations concerned with or interested in water-related items was given (see Attachment C). The survey asked each organization to rank identified topics in a priority of high, medium, low and to specify any other concerns or comments. After reviewing raw data findings, the priority concerns identified by WPIC members were summarized and ask input on those concerns was requested.

Suggestions were solicited from those in attendance regarding water plan priority concerns, including ideas not currently in either the County Comprehensive Land Use Plan or those listed in the current water plan. Each of these comments is documented in Attachment B, Public Meeting Comments. Persons in attendance were also encouraged to add suggestions to the scoping document and return the forms to the SWCD. A copy of the scoping document can be found in Attachment B.

The first public meeting was held in conjunction with the Itasca County Township Association on Monday June 12, 2006, at the Grand Rapids Township Hall at 7:00 pm. Thirty-four persons were in attendance, and this meeting was broadcast on I.C.T.V., the local cable TV channel. The second public meeting was held on Tuesday, June 27, 2006, at the Squaw Lake Community Center in Squaw Lake at 6:30pm. Eight persons were in attendance, including members of WPIC. The third meeting was held on June 28, 2006, at the Marcell Family Center in Marcell at 7:00pm. in conjunction with the Northern Itasca Joint Powers Board meeting. Twenty persons were in attendance, including members of WPIC. The fourth public meeting was held on Wednesday, July 5, 2006, at the Wabana Town Hall north of Grand Rapids at 6:00p.m. Twenty persons were in attendance, including members of WPIC. The fifth and final public meeting was held in conjunction with the Harris Township meeting held July 12, 2006, at 7:30 pm. with eighteen in attendance. This meeting was also recorded and broadcast on I.C.T.V.

In August of 2006 the BWSR Northern Review Board evaluated the Priority Scoping Concerns Identified through the public scoping process. Upon their approval the actual writing of the Itasca County Water Plan update began.

The final draft was reviewed at the Itasca County Board Transportation and Land Management (TLM) meeting and at an advertised public meeting held at the Marcell Family Center on November 20, 2006. There was also a public hearing held to review and receive comments on December 19, 2006 as part of the Itasca County Board of Commissioners meeting. On December 22, 2006 seven copies of the Water Plan final draft were delivered to the BWSR office in Brainerd for review and distribution.

In March of 2007 the Itasca County Water Plan (2007-2017) Final Draft was reviewed by the BWSR Northern Review Board. Upon their recommendation the plan went before the BWSR Board for approval at their March Board meeting. Upon their approval it was presented to the Itasca County Board of Commissioners for adoption.

On October 18, 2011 a public meeting was held at the Marcell Family Center to solicit public input to the 2012 update of the priority concerns and objectives of the County water plan. The comments received were reviewed and evaluated by the WPIC committee and where appropriate were incorporated into the update.

On April 11, 2012 the BWSR Northern Review Board evaluated the proposed update and responses to Agency review comments. The Board then took action to recommend approval of the update, pending the Public Hearing scheduled by the Itasca County Board of Commissioners on April 24, 2012.

On April 24, 2012 (update) and December 4, 2018 (update amendment) the Itasca County Board of Commissioners conducted a public hearing to solicit comment on the proposed water plan update and amendment. BWSR Board Conservationist Chad Severts was involved in in the amendment process, including attending two WPIC plan review meetings. In December 2018, the final amendment document went to BWSR Executive Director John Jashke, for final review.

Attachment A.

Implementation Tools from the Itasca County Comprehensive Land Use Plan, Adopted May 23 2000, Considered for the Water Plan

Removed for the January 2017 through March 31 2022 Amendment, due to outdated nature.

Attachment B.

2006 Priority Concerns Scoping Document
for Itasca County, Minnesota
2007 Water Plan

A. Introduction

1. County primer
   a. Itasca County is located in the northern part of the Central Lakes Region. The county seat is located in the city of Grand Rapids.
   b. As of the 2004 the Minnesota State Demographer Center placed Itasca County's population at 44,242 with a projected population increase of 8% for the period of 2000 to 2010. The population is expected to grow by 22% by 2030.
   c. Dominant land uses are Forest Management, Recreation, Private and Corporate Development

2. Plan Information
   a. The Itasca Soil and Water Conservation District (SWCD) is the Local Government Unit (LGU) responsible for the local water management plan/program.
   b. The original water plan was adopted in 1990. Updated in 1996 and again in 2002. The new plan update should be completed in 2007.
   c. The expiration date of the existing plan is March 26, 2007

B. List of the Priority Concerns

1. Surface Water Quality
   a. Clarity
   b. Nutrient Levels
   c. Erosion
   d. Property values
   e. Update and expand data collection and monitoring- stabilize funding
   f. Identify point and non-point sources of pollution
   g. Enforce current shoreland ordinances
   h. Develop lake sensitivity guidelines
   i. Health

2. Land Use and Development
    a. Shoreline buffers
    b. Wetlands
    c. Ownership fragmentation
    d. Increased rate of development
    e. Runoff
    f. Sedimentation
    g. Major developments-be proactive
    h. Promote enforcement of shoreland ordinances
    i. Discourage development on lakes already on impaired list or promote mitigation for development
    j. Maintain recreational opportunities
    k. Cumulative impacts within a watershed
    l. Develop lake sensitivity guidelines
    m. Regulate the development of marginal lake lots
    n. Promote riparian buffer zones
    o. Discourage use of variances for shoreland development

3. Ground Water Quality
    a. Protect quality
    b. Develop quality data base
    c. Sealing of abandoned wells
    d. Septic system compliance/enforcement
    e. Contamination Prevention education

4. Septic Systems
    a. Promote ordinance enforcement
    b. Identify non-compliant systems
    c. Identify or develop funding sources for upgrades
    d. Provide incentives for upgrade of old systems

5. Fish and Wildlife Habitat
    a. Surface water
    b. Wetlands
    c. Recreation importance to economy
    d. Endangered Species
    e. Invasive Species

6. Education
    a. Current Residents
    b. New Property Owners
    c. Recreational Users
    d. Shoreland Ordinances/Enforcement
    e. Focus on providing solutions
    f. Lake and River Associations/ schools

C. Priority Concern Identification

1. Public input forums
    a. Water Plan Implementation Committee meetings: March 21& May 16, 2006.
    b. Outreach Mailings to (42) Organized Townships March 24, (10) Municipalities March 24, (5) Adjacent Counties & Water Plan Managers March 27, (37) Lake & River Associations March 23, (8) state agencies Mach 27. See attached distribution lists. Appendices A-E
    c. Additional public meetings will be held during June and July of 2006 in Max, Marcell, Wabana, & Harris Townships
    d. A copy of all comment materials received is available for review at the Itasca SWCD

2. Summary of outreach mailings:
    a. Cover letter explaining process
    b. Water Plan Update Assessment Rankings Worksheet in which participants were asked to rank the importance of the following water parameters.
    c. Priority Concerns: Definitions and Examples reference paper was distributed for review.

Participants were then asked to fill out the Priority Concerns Input Worksheet by listing the top 3 concerns affecting their area.

Attachment C.

Comments from Public Meetings

Squaw Lake Community Center, June 27, 2006

Comments/questions received from the public:

- Is there an inconsistent response from county on problem reporting; who is in charge of what?
- What is the effect of a failed septic system in a lowly populated area?
- Is there testing of old filling stations?
- What about mercury?

Marcell Family Center, June 28, 2006

Comments/questions received from the public:

- How do we evaluate the goal to measure success; are there any criteria set?
- How do we evaluate the uncontrollable, for example mercury from China?
- What is surface water quality health; public health or water health?
- Will you recommend land use and tax policy from the plan?
- Who will do enforcement of the ordinance because without enforcement it is all worthless
- Lake associations have done wonders in keeping water quality high; lake associations could do policing efforts if all lakes had associations; people would be more interested because of they are vested in the lake.
- Lots of people don't test sand point wells they drive in; people think it's too hard and not necessarily needed.
- Is there a program testing to determine which septics are not in compliance? We must have a way to determine if septics are non-compliant.
- People won't come here if we don't have clean water.
- It's hard to know what incentive programs are available.
- How do these issues mesh with the MDNR; they say the same issues and do things anyway.
- Did we reach the 2002 water plan goals?
- I'm concerned that the five-year plan will be outstretched and talk while it's happening already.

Wabana Town Hall, July 5, 2006

Comments/questions received from the public:

- Has there been a survey done to identify impaired lakes in the county?
- Why do lakes affect health; what health issues are there?
- With so many impaired lakes in MN, how do you maintain integrity of water quality and still allow people to live there?
- All items under the surface water are synergistic; they all affect each other.
- WPIC should make the point of not all lakes fit one size with TMDLs.

- What is the intent of the county water plan, because land use plan gets interpreted the way the County Board want it?
- Does SWCD get called into planning commission meetings for variance reviews and input?
- Isn't it WPIC's role to tell the County Board when the county land use conflicts with the water plan?
- I get the impression there's a big political agenda; seems like information is conflicting; these are not new issues; what is SWCD's role and how do agencies coordinate to get decisions made?
- If we want something in this plan, we must be clear for citizen input and guidance; is there an implementation piece in this plan to be sure action occurs?
- The consensus is that we should have water plan adopted and incorporated into the comprehensive land use plan by the County instead of truly two separate documents. Can we make this a goal in the water plan?
- Are MDNR shoreland rules adopted by the County?
- MDNR has an idea of a new way of platting out lakeshore lots; is the county considering adopting those rules?
- Can we add that a goal be conservation subdivisions; like the new North Central Lakes Project has identified and larger buffer strips also recommended? Can we add them as tools to enforce sound lake management?
- Realtors have some responsibility to educate buyers on lakeshore development. Is there a brochure or idea for landowners? We need to get rules to people before they buy it; maybe they wouldn't buy.
- ICOLA published 25000 booklets for realtors and explains all water regulations and contacts.
- Is there a website with the plan?
- WPIC needs to represent themselves and say the water plan says 'x' so how can you approve 'y' because it contradicts the water plan. WPIC should be available to citizens to express concerns over permits, etc. to the County Board with more clout than being a 'concerned citizen'.

<u>Itasca County Association of Townships, June 12, 2006</u>

Comments received at this meeting include:

- What is the status of lake sensitivity project? Are we following the Canadian model?
- Education priority should also target realtors
- Has anyone addressed what effect dust abatement/ice melt chemicals have on water?
- Would it be possible to incorporate current lake management plans into the county water plan?

The following is a summary of the Priority Concern hand-written responses from the 2006 public meetings.

Priority Concern Response Data

First Priority	**Second Priority**	**Third Priority**
Water Quality (surface & ground)	Pollution sources (within 3 miles)	Land Use Changes (development)
Monitor surface water quality	Land use changes	Wetland protection
Water Quality (surface & ground)	Lakeshore development	Maintain natural shoreline veg
Water Quality (surface)	Ground water quality	Shoreland buffers
Water quality (surface and ground)	NA	NA
Unconforming Septics	Enforce current ordinances	NA
Flooding (prairie river chain)	Flooding (prairie river chain)	Flooding (prairie river chain)
Ground water quality	Run-off sedimentation	Maintain recreational access
Ground water quality	Surface water quality	Fish and wildlife
Impacts of development on water quality	Failing septics	Cumulative impacts
Water Quality	Fish and Wildlife	Pollutant Sources
Development, recreation (controlled growth)	Impaired septic systems	Run-off, drainage
Surface water quality	Ground water quality	Surface & Ground Water pollution
Water Quality	Septics	Shoreline
Zoning Ordinance to protect Water Quality	Water quality monitoring	Septic survey, update
Lake carrying capacity	Developing marginal lots	Water run-off
Shoreline buffer zones	Land use rules	Wetland protection
Protect ground water	Sealing unused, unsealed wells	Develop ground water quality data
Impaired waters (TMDL)	Rainy river & upper Mississippi basins	Little Fork, Big Fork, Swan river
Water quality-development in riparian area	Erosion and sediment control	Forest land conversion
Water quality (1-6)	Mining impacts	Stream stability
Surface water quality	Maintain/improve shoreland wetland	Development in shore impact zone
Development of Lakeshore	Failing septic systems	Preserving water quality (surface)

Major Priorities Tallied:

Water Quality (surface)	19
Development/runoff/sed	18
Water Quality (ground)	12
Shoreline buffers/wetlands	9
Non-compliant septics	8

Other Priorities:
Flooding on Prairie River Chain
Others (continued)
Fish and wildlife
Sealing unused wells
Rainy River/ Upper Miss Basin
Plans
Maintain Recreational access
Cumulative Impacts
Little Fork River Plan
Big Fork River Plan
Swan River Plan
Steam Stability

Assessment Rankings Response Data Set:

Raw Data Showing the Number of Responses Under Each Evaluation Criteria 2006

Evaluation Criteria for Surface Water	weight=3 High	weight=2 Moderate	weight=1 Low	Total pts	H=60+ M=45-59 L=<45	weighted avg.
Quality	22	0	2	68	H	2.83
Pollutant Sources	17	6	1	63	H	2.63
Expected Land Use Changes	14	9	0	60	H	2.61
Shoreland Ordinances	15	6	3	60	H	2.5
Sedimentation	7	12	5	50	M	2.08
Runoff	8	14	2	54	M	2.25
Unique Features and Scenic Areas	7	8	9	46	M	1.92
Quantity	3	15	5	44	L	1.91
Floodplain Protection	3	9	12	39	L	1.63
Recreational Lands, Adequacy of	9	7	7	48	M	2.09
Fish and Wildlife Habitat	16	7	1	63	H	2.63
Irrigation	0	2	22	26	L	1.08
Agricultural Ditches	1	4	19	30	L	1.25
Evaluation Criteria for Groundwater	High	Moderate	Low			
Quality	19	4	0	65	H	2.83
Pollutants	16	6	2	62	H	2.58
Expected Land Use	11	13	0	59	M	2.46
Special Geologic Conditions	1	13	9	38	L	1.65
Quantity	2	10	11	37	L	1.61
Evaluation Criteria for Wetlands	High	Moderate	Low			
Present and Future Use	13	10	1	60	H	2.5
Fish and Wildlife	17	7	0	65	H	2.71
Floodplain Protection	6	9	9	45	M	1.88

Assessment Rankings

Comparison between years 1995, 2001, and 2006

X = 1995 Ranking
O = 2001 Ranking
Z = 2006 Ranking

	-----HIGH------	MODERATE-----		LOW---
I. SURFACE WATER				
(C) Quality	X,O,Z			
(I) Pollutant Sources	Z	X,O		
(Q) Expected Land Use Changes	O,Z	X		
(M) Shoreland Ordinances	O,Z	X		
(E) Sedimentation		X,O,Z		
(F) Runoff		X,O,Z		
(P) Unique Features and Scenic Areas			X,Z	O
(A) Quantity		O,Z	X	
(L) Floodplain Protection			O	X Z
(N) Recreational lands, Adequacy of		Z	O	X
(O) Fish and Wildlife Habitat, " "	Z	X,O		
(G) Irrigation				X,O,Z
(H) Agricultural Ditches				X,O,Z
II. GROUNDWATER				
(D) Quality	O,Z	X		
(I) Pollutants	Z	X,O		
(Q) Expected Land Use Changes	O	X	Z	
(J) Special Geologic Conditions			X,O,Z	
(B) Quantity				X,O,Z
III. WETLANDS				
(K) Present and Future Uses	X	Z	O	
(O) Fish and Wildlife Habitat	Z	O	X	
(L) Floodplain Protection		Z	X,O	

Priority Concern Selection Summary:

1. Priority concerns were chosen by the Water Plan Implementation Committee after review of the above tables, and comparing them with past assessment rankings to evaluate if there had been any major changes or apparent trends forming.

2. Differences between the plans priority concerns and those received in comments are the following:
    a. Many of the specific concerns cited were grouped together with similar concerns and then addressed.
    b. The scope of some of the concerns were very broad and were broken down into more specific areas so that they may be more adequately addressed.

Priority concerns not addressed by the Plan.

3. Of the more than 90 priority concerns that were reviewed, many were able to be addressed by grouping them under our six major categories. The remaining concerns while not insignificant did not seem to have the widespread support like the others. The WPIC and SWCD will continue to work with other agencies, municipalities, and associations to address these other issues as they arise.

V. ACRONYMS

1W/1P	One Watershed / One Plan
ABC	American Bird Conservancy
AIS	Aquatic Invasive Species
BMP	Best Management Practices
BSU	Bemidji State University
BWSR	Board of Water and Soil Resources
CAP	Community Action Project
CLMP	Citizen Lake Monitoring Program
CPL	Conservation Partners Legacy grant
CWF	Clean Water Fund
CWP	Clean Water Partnership
CWL	Clean Water Legacy Act
DNR	Department of Natural Resources
DOW	Division of Waters
GIS	Geographic Information System
GRAPS	Groundwater Restoration and Protection Strategy
HUC	Hydrologic Unit Code
I Co.	Itasca County
ICC	Itasca Community College
ICOLA / I-COLA	Itasca County Coalition of Lake Associations
ICTV	Itasca County Television station.
ISTS	Individual Septic Treatment Systems
IWLP	Itasca Water Legacy Partnership
JPB	Joint Powers Board
Lk Assoc.	Lake Associations
LBS	Lakes of Biological Significance

LGU	Local Government Unit
LWM	Local Water Management
MASWCD	Minnesota Association of Soil and Water Conservation Districts
MDA	Minnesota Department of Agriculture
MDH	Minnesota Department of Health
MDNR	Minnesota Department of Natural Resources
MGS	Minnesota Geological Survey
MHB	Mississippi Headwaters Board
MnDOT	Minnesota Department of Transportation
MPCA	Minnesota Pollution Control Agency
NRBG	Natural Resources Block Grant (BWSR)
NRCS	Natural Resources Conservation Service
OHWL	Ordinary High Water Level
RAC	Resource Advisory Counsel
RIM	Reinvest in Minnesota
SWAG	Surface Water Assessment Grant
SWCD	Soil and Water Conservation District
SSTS	Sub-surface Sewage Treatment System
TLM	Transportation and Land Management
TMDL	Total Maximum Daily Load
TSI	Trophic State Index
UMGR	Upper Mississippi River Grand Rapids
UMHW	Upper Mississippi River Headwaters
Uof M	University of Minnesota
USFS	United States Forest Service
USGS	United States Geological Survey

VOCs	Volatile Organic Compounds
WCA	Wetland Conservation Act
WPIC	Water Plan Implementation Committee
WPLMN	Watershed Pollutant Load Monitoring Network
WRAPS	Watershed Restoration and Protection Strategy

- END OF PLAN-