

Crow Wing County

Local Comprehensive Water Plan



2013 - 2023



CROW WING COUNTY
BRAINERD, MINNESOTA 56401

Table of Contents

	<u>Page:</u>
Executive Summary	2
County Basics	3
Water Planning Background	6
Priority Concerns:	
Selection & Public Input Process	7
Goals, Objectives, & Actions (Table)	8
Goals, Objectives, & Actions (Details)	11
Implementation:	
Geologic Context	37
Groundwater	39
Watershed Approach	41
Watershed Classification & Prioritization	43
Outstanding Surface Water Resources	50
Other Priority Watersheds	55
Major Watershed Summary	56
Border Watersheds	60
Watershed Implementation Priority Maps	62
Mississippi River	79

Appendices:

- Appendix 1: Individual Watershed Maps**
- Appendix 2: Large Lake Assessments**
- Appendix 3: Water Quality Factsheets**
- Appendix 4: Impervious Surface Research Study**
- Appendix 5: Mississippi River Data**
- Appendix 6: Priority Concerns Scoping Document**

EXECUTIVE SUMMARY

Water planning is identifying what works best to protect and enhance Crow Wing County's water resources. As the LGU responsible for the development and implementation of the Local Comprehensive Water Management Plan, the Crow Wing County Land Services Department is committed to protecting, preserving & improving water resources in Crow Wing County by being proactive, efficient, customer focused, organized, and innovative while being good stewards of the county's resources. The Department is committed to providing excellent customer service while helping landowners make wise choices that protect Crow Wing County's extraordinary natural resources.

This plan has identified surface water, ground water, and aquatic invasive species as the priority concerns. Objectives and action steps have been identified for each concern and are included on page 8. This is a water resource "protection" based plan with a scope focused to the minor watershed level. Implementation strategies were developed from the priority concerns and tailored specifically for each of the 125 minor watersheds in the County. Analysis of existing, readily available data has revealed the details of these minor watersheds while showing where data-driven strategies can be implemented in a more targeted and efficient manner. This 10-year plan is unique from past versions because it:

- Focuses on Aquatic Invasive Species for the first time in plan history
- Targets specific surface and ground water resources to focus implementation efforts
- Includes an implementation plan for the Mississippi River
- Uses a watershed-based, land protection model
- Includes analysis and maps of all 125 minor watersheds in the county

Coordination with other plans:

During the scoping process, a request was made to other LGUs and stakeholders groups for relevant plans and information related to water resource planning. No specific plans were submitted. Crow Wing County was aware of the watershed monitoring and planning efforts of the Minnesota Pollution Control Agency and 30 Lakes Watershed District and had extensive conversations with each. No known conflicts exist. Also, incorporated by reference into this plan are the most current versions of the: Crow Wing County Land Use Ordinance, Wellhead Protection Plans for Baxter, Brainerd, Crosby (when available), Cuyuna, Deerwood, Ironton, Pequot Lakes, Riverton, and Trommald. The Crow Wing County Stormwater Packet, Crow Wing County Solid Waste Plan, Minnesota Stormwater Manual, Crow Wing County Geologic Atlas, and NRCS Soil Survey are also hereby incorporated by reference.

Ongoing activities:

Crow Wing County revised its Land Use Ordinance & Map in 2010-2011 with the goal to incorporate the concerns and objectives of the Water Plan into the daily operations of the Land Services Department. This revision to the Water Plan further synchronizes the Water Plan with Department operations, which include ongoing activities including the Wetland Conservation Act, Shoreland Management, Septic System Management, Wellhead Protection (as shown in the objectives and actions of this plan).

Water Plan Committee:

Crow Wing County Board of Commissioners Rosemary Franzen, Doug Houge, Paul Koering, Rachel Nystrom, and Paul Thiede

BWSR Board Conservationist: Dan Steward

County Administrator: Tim Houle

Land Services Supervisor: Chris Pence

Land Services Director: Mark Liedl

Water Protection Specialist: Mitch Brinks

COUNTY BASICS:

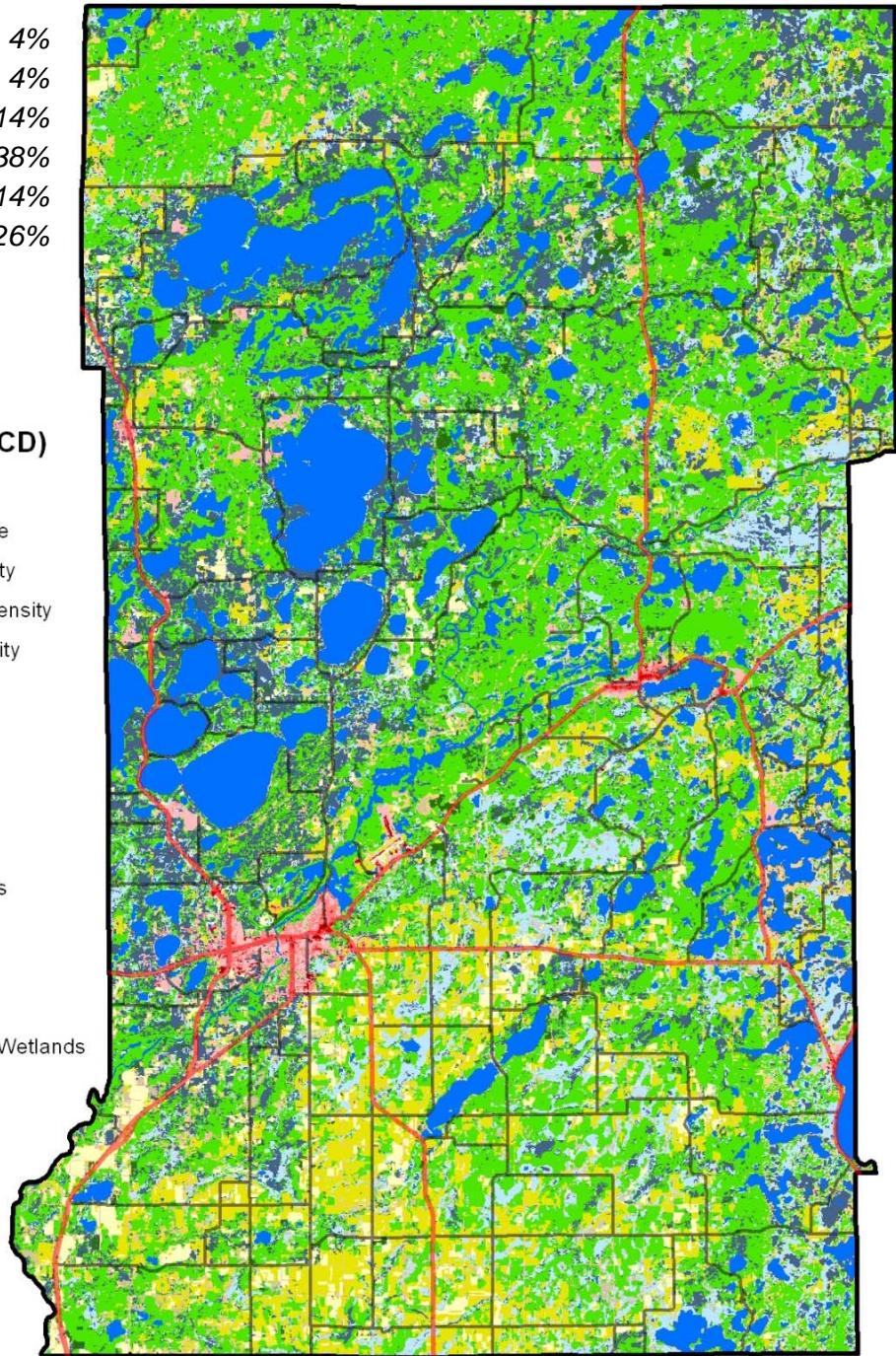
Water is Crow Wing County's lifeblood. The county has an area of 740,000 acres and approximately 102,000 acres, or 14%, is covered by lakes, rivers, and streams. An additional 26% is covered by wetlands.

Figure 1. Land Use Table & Map (from National Land Cover Dataset, 2006)

Developed	4%
Agriculture	4%
Grass/Pasture/Shrub	14%
Forest	38%
Open Water	14%
Wetland	26%

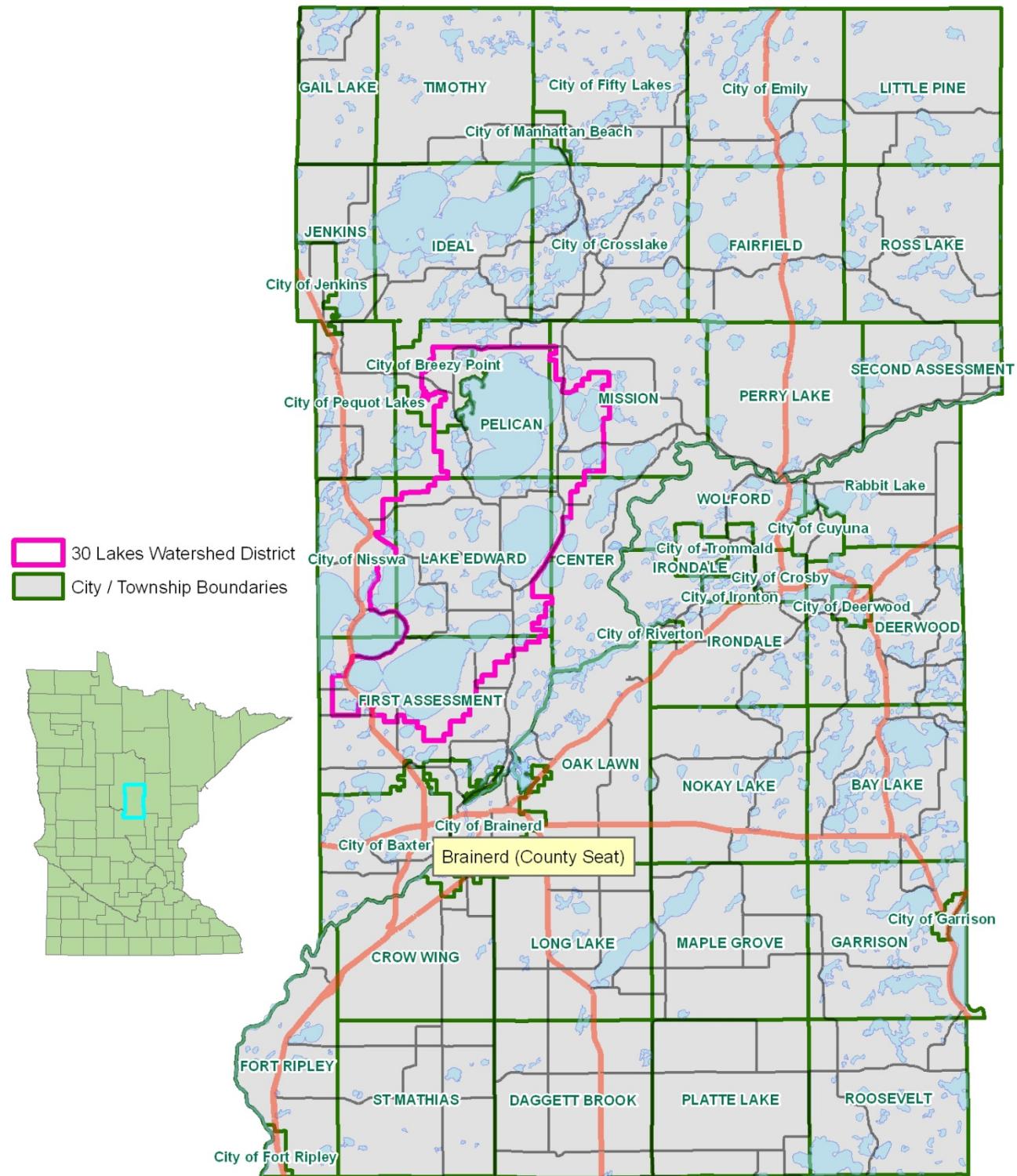
Land Cover (2006 NLCD)

- [Blue] Open Water
- [Pink] Developed, Open Space
- [Red] Developed, Low Intensity
- [Dark Red] Developed, Medium Intensity
- [Maroon] Developed, High Intensity
- [Grey] Barren Land
- [Green] Deciduous Forest
- [Dark Green] Mixed Forest
- [Dark Green] Evergreen Forest
- [Yellow] Shrub / Scrub
- [Brown] Grassland / Herbaceous
- [Light Yellow] Pasture / Hay
- [Light Yellow] Cultivated Crops
- [Dark Blue] Woody Wetlands
- [Light Blue] Emergent Herbaceous Wetlands



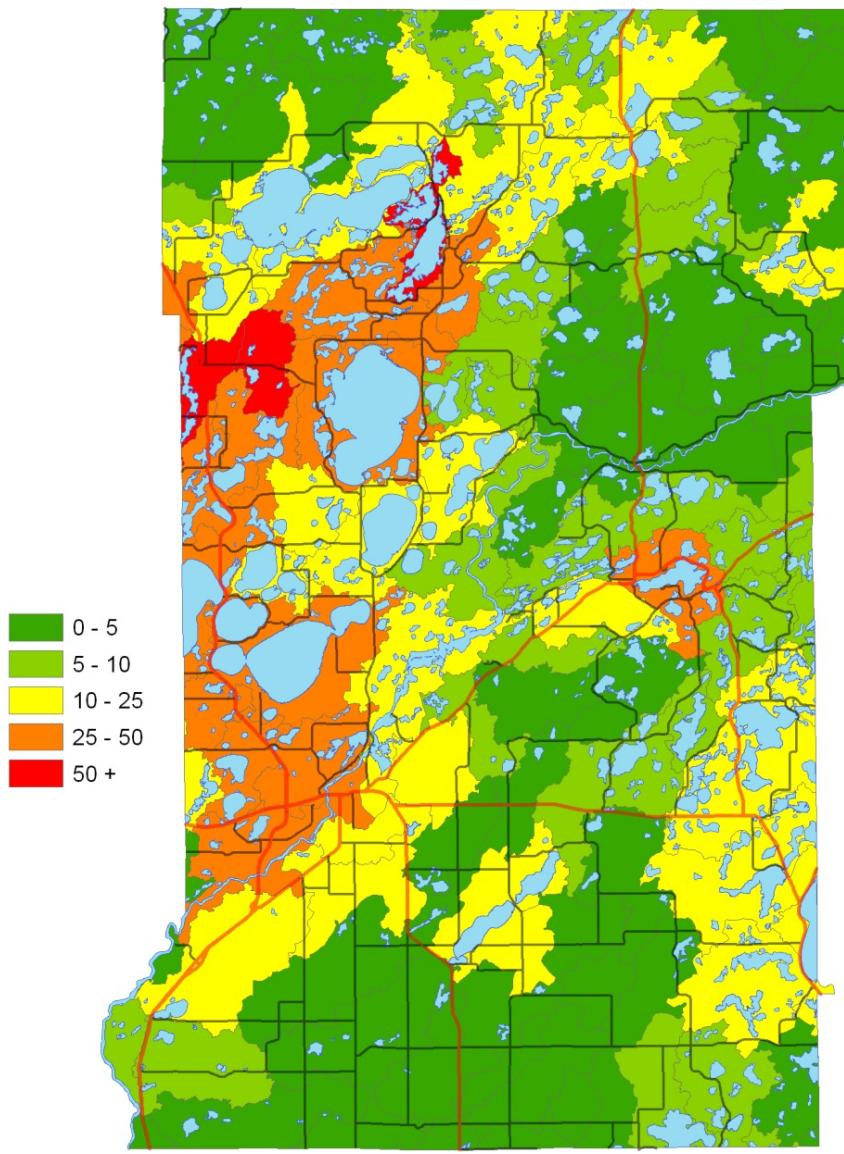
The scope of this plan is the entire area of Crow Wing County, which includes 18 cities, 30 townships, and 1 watershed district. The County encompasses an area of approximately 740,000 acres.

Figure 2. Crow Wing County Cities, Townships, and Watershed District



The abundance of surface water makes Crow Wing County a destination area. From 1990 to 2000 the population in Crow Wing County has increased by 24.5%, the eleventh fastest growing county of Minnesota's 87. The most recent census shows the population continued to grow another 13.4% from 2000 to 2010 (twelfth fastest). Much of this growth was concentrated around the County's larger lakes and transportation corridors. The Pequot Lakes / Breezy Point / Crosslake area experienced the most rapid growth during this time. From 2000 to 2010, total property valuations increased more than 100% in many of the developing areas in the County (yellow, orange, and red colors on the map), within seasonal property increasing the fastest. A 2012 survey of property owners in Crow Wing County revealed that the County will be a draw for people for many years to come, especially for retirees. Of those that completed the surveys: 60% of the year-round residents were over the age of 55, 45% of the seasonal residents were over the age of 55, 35% have already retired, 25% planned to retire within 10 years, and 25% planned to build within 10 years.

*Figure 3. Development Increases in Crow Wing County since 2000
Based on number of E911 address pts added (per sq. mile)*



WATER PLANNING BACKGROUND

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. County water planning efforts began in earnest in the late 1980s as state funding assisted local units of government in developing their water plans. Water planning developed under the legislative authority and mandate of the Comprehensive Local Water Management Act (Minnesota Statutes, Chapter 103B). The purpose of Local Water Planning, by statute, is to:

- Identify existing and potential problems and opportunities for the protection, management, and development of water and related land resources
- Develop objectives and carry out a plan of action to promote sound hydrologic management of water and related land resources, effective environmental protection and efficient management.

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. These local plans focus on priority concerns, defined goals and objectives, and measurable outcomes. BWSR provides financial assistance to LGUs through the Natural Resources Block Grant.

The first water plan for Crow Wing County was adopted in 1990. Over the years it has been revised several times. The current Crow Wing County Water Plan was adopted in 2008 and is set to expire in August of 2013. Six priority concerns were identified with the goal to protect the surface and groundwater resources of the County. Under each priority concern are action steps that specifically lay out tasks to accomplish the goal.

2008 Priority Concerns:

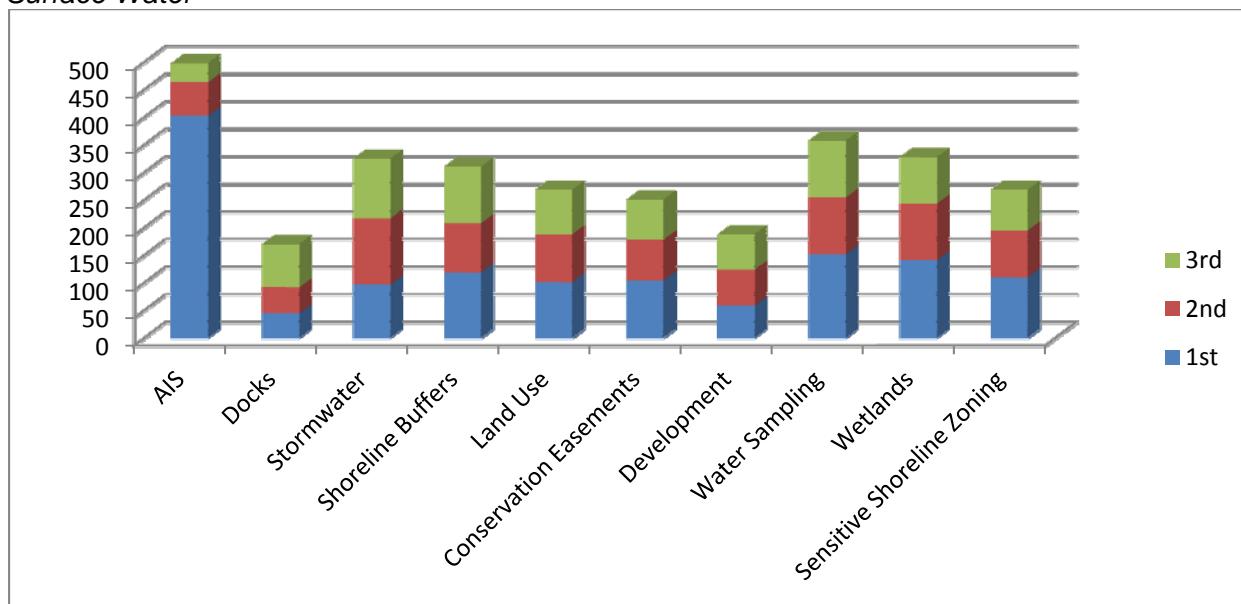
1. *Establish and maintain an organized countywide surface water quality monitoring program*
2. *Address stormwater runoff to minimize impacts to water*
3. *Protect ground water quality*
4. *Address wastewater needs throughout the County*
5. *Minimize the adverse effects of development on water quality countywide*
6. *Coordinate the development and implementation of educational programs on water quality protection*

PRIORITY CONCERN: SELECTION & PUBLIC INPUT PROCESS

In May 2012, the Crow Wing County Board of Commissioners adopted a resolution directing the County's Land Services Department to begin the process of updating the water plan. In order to develop the County's priority concerns, a survey was developed and distributed to over 12,000 residents in the County. Approximately 600 people participated in the survey which shaped the formation of the Priority Concerns. A summary of their responses is included below. Complete survey results are included in the Priority Concerns Scoping Document in Appendix 6.

Figure 5. Priorities from Water Plan Survey Respondents

Surface Water



Groundwater

