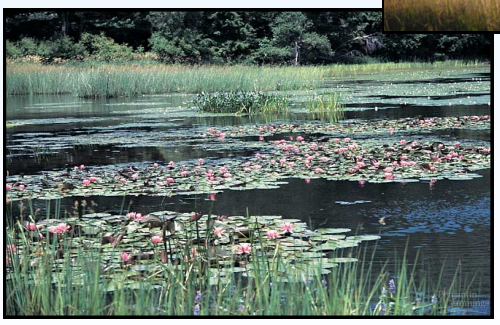
CHIPPEWA COUNTY
LAND AND WATER RESOURCE MANAGEMENT PLAN

2019-2023

PUBLIC HEARING DRAFT



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CHIPPEWA COUNTY LAND AND WATER RESOURCE MANAGEMENT PLAN

PUBLIC HEARING DRAFT

Chippewa County Department of Land Conservation & Forest Management
Chippewa County, Wisconsin
February 27, 2019

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TABLE OF CONTENTS

		Page
	Listing of Plan Maps, Figures, and Tables…….	
	Listing of Appendices and Appendix Figures……	
	Executive Summary……	1
1.0	Introduction…….....	3
	1.1 Overview of Statutory Authorities and Requirements…….	3
2.0	Purpose of Plan……	4
3.0	Planning Methods……	6
4.0	Geographic and Physical Characteristics of the County…….....	8
5.0	Overview of Resource Conditions & Trends…….	12
	5.1 Overview of Recent Research Studies…….	12
	5.2 Information on Resource Conditions and Trends.……	13
	5.21 Assessment of Land Cover and Land Use……	15
	5.22 Assessment of Soil Condition……..	21
	5.23 Assessment of Surface Water Resource Condition……..	23
	5.24 Assessment of Groundwater Condition……	26
	5.25 Assessment of Wetland Condition…….	32
6.0	Land and Water Issues of Priority Concern……	33
7.0	Resource Management Objectives…….	37
	7.1 Land Management Objectives…….	37
	7.2 Surface Water Management Objectives…….	39
	7.3 Groundwater Management Objectives……..	40
	7.4 Wetland Management Objectives……..	41
8.0	Program Goals and Objectives……..	42
	8.1 Energy Conservation and Waste Reduction……..	42
	8.2 Land Conservation and Sustainability……	45
	8.3 Water Conservation……	50
	8.4 Lake and Flowage Management ……. .	52
	8.5 Nonpoint Source Water Pollution Control…….	54
	8.6 Planning and Environmental Regulation……	58
9.0	Plan Implementation……	60
	9.1 Land Conservation & Forest Management Committee Program Support and Service Levels……..	62
	9.2 Annual Work Plan Development and Reporting ……	63
	9.3 Overview of Approach to Conduct Public Education and Community Outreach …….	64
	9.31 Educational Service Delivery…….	64
	9.32 Agricultural Agency Education Coordinating Council……..	65
	9.33 Internet Web and Social Media Access……..	66
	9.34 Relationships with Educational Institutions……	66
	9.35 Community Outreach……..	67
	9.4 Overview of Approach to Preserve Unique Parcels and Working Lands……	68
	9.41 Cooperating Municipalities and Agencies……..	68
	9.42 Use of Chippewa County Stewardship Fund……..	69

DRAFT

Page

9.5 Overview of Approach to Control Agricultural Nonpoint Source Pollution Using NR151 Agricultural Nonpoint Performance Standards…… 70
9.51 Fiscal Policy……. 72
9.52 Priority for Servicing Farms……. 73
9.53 Priority for Public Cost-Share Allocations……... 74
9.6 Overview of Approach to Control Urban Nonpoint Source Pollution Using NR 216 and NR 151 Urban Runoff Performance Standards…… 76
9.61 Storm Water Services Within the Chippewa Falls Urban Area…….. 76
9.62 Storm Water Services Outside of the Chippewa Falls Urban Area…….. 76
9.7 Application of Nonpoint Performance Standards and Best Management Practices to Pursue Land and Water Resource Objectives…… 77
9.71 State and County Standards…… 77
9.72 Best Management Practices…… 78
10.0 Performance Measures, Tracking and Public Accountability…… 79
10.1 Land Based Monitoring, Modeling, & Tracking…….. 79
10.2 Nonpoint Source Pollution Control & Mine Reclamation Tracking…..……. 79
10.3 Water Based Monitoring, Modeling, & Tracking…… 81
10.4 Administrative Tracking…… 82
11.0 Year 2019–2023 Activity Schedule…… 83

Listing of Plan Maps, Figures and Tables

	Maps	Page
Map 1	Location of Chippewa County……..	8
Map 2	Pleistocene Geology of Chippewa County……	9
Map 3	Major Soil Associations……	9
Map 4	Location of Major Surface Waters, Watershed & Water Resource Monitoring Sites…….	11
Map 5	Distribution of Land Cover and Land Use……	15
Map 6	Distribution of New Development in Unincorporated Areas of County…….	20
Map 7	Location of Farms Routinely Monitored and Meet Existing County Soil & Water Standards…….…….	22
Map 8	Location of Exceptional and Outstanding Resource Waters, and 303(d) Surface Waters Impaired by Sediment & Nutrient Sources, & WPDES Stormwater Permit Boundary…….	24
Map 9	Location of Lake Wissota Stewardship Project & Project Locations……	25
Map 10	Location of Wells Where Information About Water Chemistry Has Been Compiled Through County Sponsored Water Sampling Projects……	28
Map 11	Concentration of NO_3-N Located Throughout Chippewa Co…….	30
Map 12	2016 Nitate-N Inverse Distance Weighting…….	30

Figures **Page**

Figure 1 Cattle, Calves, & Milk Cows in Chippewa County…….. 16

Figure 2 Total Milk Cow Herds in Chippewa County …… 17

Figure 3 Acres Planted/Harvested for Crops in Chippewa County, WI……... 18

Figure 4 Acres of Farmland in Chippewa County, Wisconsin Converted to Nonagricultural Use, 1988-2016…….. 19

Figure 5 Components of the Chippewa County Groundwater Inventory……. 27

Figure 6 2016 Water Quality by Pleistocene Geology Category…….. 29

Figure 7 Comparison of Nitrate Concentrations Over Time……. 31

Tables **Page**

Table 1 A Partial Listing of Resource-Based Management Plans & Scientific Studies for Areas of Chippewa County Prepared by Public Agencies…….. 13

Table 2 A Partial Listing of Dynamic GIS-Based Resource Inventories and Data Sets Maintained by Chippewa County…….…… 14

Table 3 Acres Planted/Harvested for Crops in Chippewa County, Wisconsin…… 17

Table 4 A Summary of Chippewa County Land Sales Total Number of Annual Agricultural Land Sales and Percent Converted to Nonagricultural Use……..… 19

Table 5 Local Priorities for Implementing Agricultural Nonpoint Standards in Chippewa County Based Upon Need, Type, and Location of Practice…….. 76

Table 6 Schedule of Activities to Implement LWRM Plan……

Table 7 Benchmark Measures for High Priority Activities to Track Progress Toward LWRM Plan Implementation……..

Table 8 Anticipated Budget by Program Area to Implement LWRM Plan……

Appendices

		Page
Appendix 1	Overview of Public Participation	A1-1
Appendix Figure 1.1	Outline of Ad Hoc Advisory Committee Charge Chippewa County Land and Water Resource Management Plan Revision and Citizens Ad Hoc Advisory Committee Members……..	A1-2
Appendix Figure 1.2	Schedule of planning activities……..	A1-6
Appendix Figure 1.3	Press release to inform public of listening sessions….....	A1-8
Appendix Figure 1.4	Summary of listening sessions & information..……..	A1-9
Appendix Figure 1.5	Public Hearing Notice……..	A1-10
Appendix 2	Resource Management Information Provided by DNR……	A2-1
Appendix Figure 2.1	Watershed tables for the Lower and Upper Chippewa River Basin and associated classification in Chippewa County……..	A2-2
Appendix Figure 2.2	Water quality standards for each class of water……...	A2-60
Appendix 3	Chippewa County Stewardship Fund Policy and Procedures for Program Administration……..	A3-1
Appendix 4	Addendum to the Chippewa County Operational Agreement Between DNR & Chippewa County Land Conservation Department for the Administration and Implementation of Agricultural Nonpoint Pollution Performance Standards and Prohibitions Under NR151 and NR243, April 16, 2004…….	A4-1
Appendix 5	Chippewa County Soil and Water Conservation Standards, 6/25/04…….	A5-1
Appendix 6	Amendment to Chippewa County Operational Agreement Between DNR, Chippewa County Land Conservation Department, and Chippewa County Zoning Department for Stormwater Plan Review and Associated Engineering Services in Chippewa County……..	A6-1
Appendix 7	Format for Annual Interagency Soil & Water Conservation Work Plan……	A7-1

CHIPPEWA COUNTY LAND AND WATER RESOURCE MANAGEMENT PLAN

EXECUTIVE SUMMARY

In Wisconsin, counties have been assigned statutory authority to plan and implement soil and water conservation, and nonpoint source water pollution control programs to meet local needs. Wisconsin Stats., Chapter 92 requires the county to develop a county land and water resource management plan.

This plan has been developed by the Chippewa County Land Conservation Committee, serving as the County Land Conservation & Forest Management Committee, to meet state requirements and to serve as a guide for local conservation efforts administered by the county, and cooperating state and federal agencies.

The plan has been developed using input from a citizens advisory group representing a wide-range of local agricultural, forestry, land development, and environmental interests.

This plan describes the existing condition of land and water resources in Chippewa County, and outlines conservation issues of primary concern. It also describes how the county will direct its programs to address these issues.

The plan places a priority on land and water conservation programs that will conserve the natural resource base and contribute to the rural economy through sustained agricultural, forestry, and mining production.

A review of resource conditions has shown that global trends are placing an increasing demand on the local resource base.

The plan clarifies how the county will begin to respond to climate change, and how it will support efforts to pursue renewable energy production, assure mine reclamation, and encourage recycling.

The plan clarifies how the county will work with interested landowners and nonprofit conservation organizations to identify and preserve unique parcels of high environmental value.

The plan outlines an approach to preserve blocks of “agricultural working lands” and forests using voluntary conservation agreements. These agreements would be augmented through use of rural density limits and agricultural zoning, if established and adopted by individual towns.

Importantly, the plan clarifies how the county will manage soil erosion and nonpoint water pollution from both agricultural and nonagricultural sources.

In agricultural areas, public funds will be used to maintain a Voluntary Farm Evaluation and Certification Program that will be used to introduce and administer state mandated agricultural performance standards. This voluntary program will be augmented by a regulatory program that will be pursued through the county’s Manure Storage and Livestock Facility Ordinance and its comprehensive zoning ordinances.

In urbanizing areas, the county will work with municipalities to control storm water runoff. The county will work with the Village of Lake Hallie and the towns of Anson, Eagle Point, and Lafayette to maintain a joint storm water management program to meet state and federal storm water permit requirements for the Chippewa Falls Urban Area.

With regard to management of public lands, the county will work with town officials, state agencies, and nonprofit organizations to purchase conservation easements or select parcels from willing sellers in designated management areas.

The county will manage the Chippewa County Forest for timber production, resource protection, and public use as defined in the Chippewa County Forest Management Plan.

To implement the plan, the county will work closely with all other local, state, and federal conservation agencies, including the USDA Farm Service Agency (FSA) and Natural Resource Conservation Service (NRCS), the WI Dept. of Natural Resources (WNDR), the WI Dept. of Agriculture, Trade, and Consumer Protection (DATCP), and the University of Wisconsin – Extension (UWEX).

As a basis for this effort, the county will actively work with existing educational institutions and conservation and civic organizations, with the objective of providing opportunities for direct citizen involvement and community participation in the local conservation effort.

Chippewa County will implement this plan within the limits of available resources using a schedule of activities contained in the plan. The county will use an annual work planning and budget process to systematically evaluate progress toward plan implementation.

This plan was developed using a ten (10) year planning horizon to meet the requirements of Wis. Stats. 92.06 for a five (5) year period. If, at the end of those five years, no amendments are warranted, the county may seek a five (5) year extension to the plan.

1.0 INTRODUCTION

1.1 Overview of Statutory Authorities and Requirements

In Wisconsin, counties have been assigned responsibility to plan and manage the local land, soil, and water resource base. In carrying out this responsibility, counties work directly with individual landowners, other municipalities, state and federal agencies, and nonprofit conservation organizations.

Wisconsin Stats., Chapter 59 assigns counties the authority and responsibility to plan and regulate land use to protect the public health, safety, and welfare. Wisconsin Stats., Chapter 287 assigns the authority to plan and administer solid waste and recycling programs. Wisconsin Stats., Chapter 28 assigns the authority to establish, plan, and manage county forest land.

Wisconsin Stats., Chapter 92 establishes a general framework for land and water conservation programs. Wisconsin Stats. 92.06 requires that each county create a land conservation committee.

Wisconsin Stats. 92.10 establishes a state land and water resource management planning program and requires that each county prepare a land and water management plan. Wisconsin Admin. Code ATCP 50.10(1)(a) requires each land conservation committee to establish a land and water resource management plan and a program to implement that plan.

2.0 PURPOSE OF PLAN

This plan has been developed by the Chippewa County Land Conservation & Forest Management Committee to meet the requirements of WI Stats., Chapter 92.10(6). These requirements are specified as follows:

> *"92.10(6) IMPLEMENTATION; COMMITTEE DUTIES. (a) Plan preparation. A land conservation committee shall prepare a land and water resource management plan that, at a minimum, does all of the following:*
>
> *1. Includes an assessment of water quality and soil erosion conditions throughout the county, including any assessment available from the Department of Natural Resources.*
>
> *2. Specifies water quality objectives for each water basin, priority watershed, as defined in s. 281.65(2)(c), and priority lake, as defined in s. 281.65(2)(be).*
>
> *3. Identifies the best management practices to achieve the objectives under sub. 2. and to achieve the tolerable erosion level under s. 92.04(2)(i).*
>
> *4. Identifies applicable performance standards and prohibitions related to the control of pollution from nonpoint sources, as defined in s.281.65(2)(b), and to soil erosion control, including those under this chapter and chs. 281 and 283 and ss. 59.692 and 59.693.*
>
> *5. Includes a multi-year description of planned county activities, and priorities for those activities, related to land and water resources, including those designed to meet the objectives specified under subd. 2. and to ensure compliance with the standards and prohibitions identified under subd. 4.*
>
> *6. Describes a system to monitor the progress of activities described in the plan.*
>
> *7. Includes a strategy to provide information and education related to soil and water resource management.*
>
> *8. Describes methods for coordinating activities described in the plan with programs of other local, state, and federal agencies."*

In doing so, this plan has also been prepared by Chippewa County to serve the following purposes:

1. Define local environmental issues of priority concern, and to establish local natural resource management goals and conservation program objectives.

2. Provide an implementation framework and activity schedule that will be applied to pursue the natural resource management goals, as defined.

3. Serve as a guide for local, state and federally-sponsored soil and water conservation, and nonpoint source water pollution control programs and projects.

4. Document the procedures that will be used by Chippewa County to engage the community and to coordinate local land and resource management programs administered by county departments with those administered by state and federal agencies.

5. Serve as a contributing component to the Agricultural, Natural, and Cultural Resource Element of the Chippewa County Comprehensive Plan, and serve to support the implementation of the Chippewa County Strategic Plan.

3.0 PLANNING METHODS

This plan was prepared by the Chippewa County Department of Land Conservation & Forest Management using an interagency process for natural resource planning, adopted by Chippewa County and cooperating state and federal agencies through an interagency Memorandum of Understanding titled: Chippewa County Operational Agreement, (April, 1999).

Participating agencies under that agreement include the Chippewa County Land Conservation & Forest Management Committee, the U.S. Dept. of Agriculture, Farm Service Agency and Natural Resource Conservation Service, the University of Wisconsin-Extension Service, the Wisconsin Dept. of Natural Resources, and the Wisconsin Dept. of Agriculture, Trade, and Consumer Protection.

Minor changes to this process were made to meet requirements for planning and public participation, as defined in Wisconsin Stats. 92.10, and ATCP 50.12 and 50.16.

Planning oversight was provided by the Chippewa County Land Conservation & Forest Management Committee through scheduled committee meetings.

At the onset of the planning effort, the Department's web page was upgraded to inform the public of the plan revision process, post planning materials, and provide opportunities for public participation.

A local stakeholder advisory committee was appointed to assure structured input from a range of public interests. The assigned charge of the advisory committee and stakeholder representation is provided in Appendix 1, Figure 1.1.

To assure coordination between the Land Conservation & Forest Management Committee and the stakeholder advisory committee, a parallel planning process was used. Under this process, a coordinated meeting schedule was set, with identical planning materials provided to each group. Minutes of meeting discussions and working drafts of the plan elements were systematically exchanged through the course of the planning process.

The stakeholder advisory committee met a total of five (5) times in 2018 and 2019 to systematically review and revise the existing Chippewa County Land and Water Resource Management Plan. A series of focus questions were used to solicit comments and guide discussions. All meetings were publically noticed and posted on the Chippewa County website, www.co.chippewa.wi.us/lcfm, following requirements of the Wisconsin Open Meetings Law.

The planning schedule and public meeting dates are provided in Appendix 1, Figure 1.2. The meeting materials and minutes documenting points of discussion are on file as public record.

A revised working draft of the Chippewa County Land and Water Resource Management Plan, (2019-2023), was developed and forwarded on 1/23/19 to the Dept. of Agriculture, Trade, and Consumer Protection and the WI Dept. of Natural Resources for initial agency review.

Three (3) public listening sessions were held (2/19/19, 2/20/19, 2/21/19) to present an overview of the updated plan, with opportunities for public questions and dialogue.

The press release used to inform the public of the listening sessions is provided as Appendix 1, Figure 1.3. A summary of the listening sessions and information presented is provided in Appendix 1, Figure 1.4.

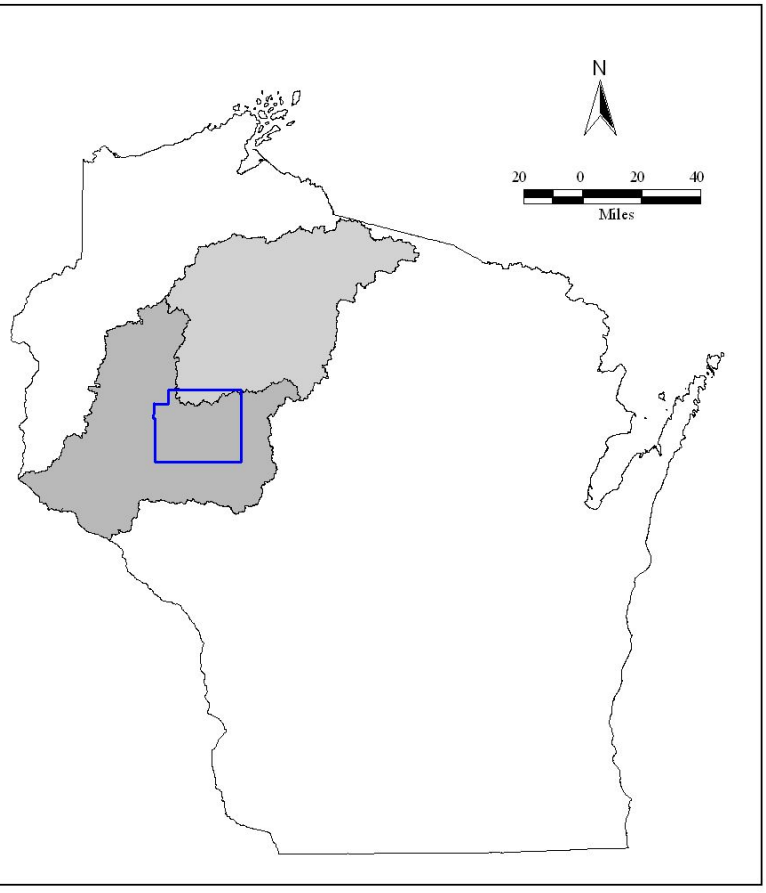
A public hearing was held on 3/11/19 with opportunities for formal public comment.

A copy of the published public hearing notice is provided as Appendix 1, Figure 1.5.

4.0 GEOGRAPHIC AND PHYSICAL CHARACTERISTICS OF THE COUNTY

Chippewa County is located in West Central Wisconsin. It encompasses 656,000 acres and lies entirely within the Chippewa River Basin of the Mississippi River Basin. Map 1 shows the location of the county in proximity to the upper and lower Chippewa River Basins.

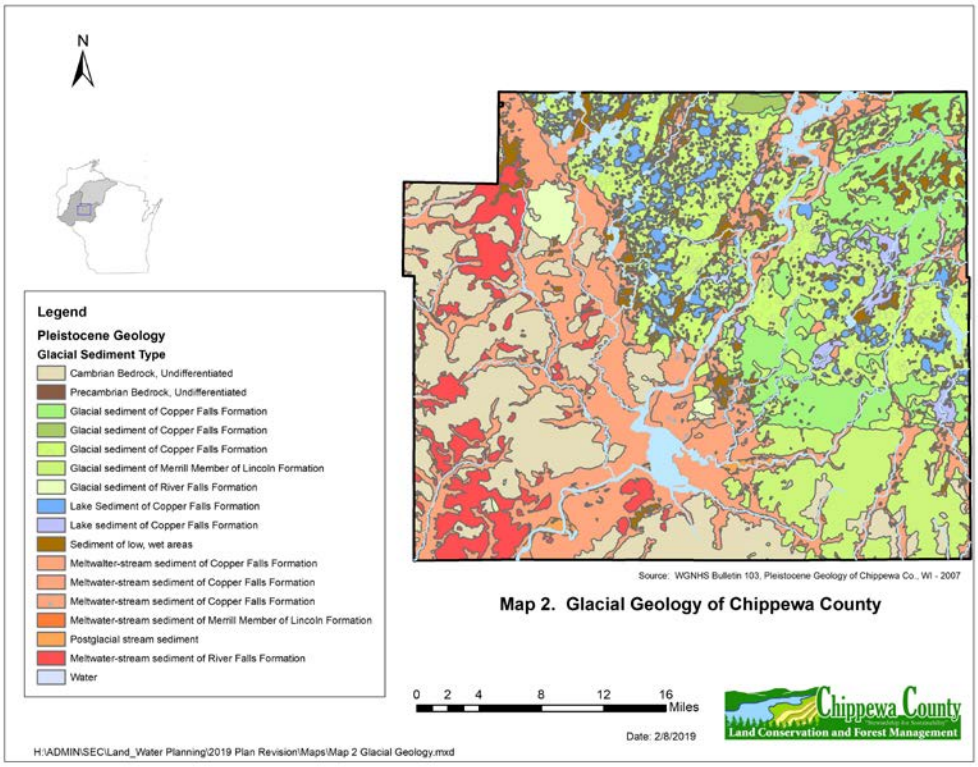
The county is located in an ecological transition zone and contains a diverse mix of high quality northern and southern plant communities.

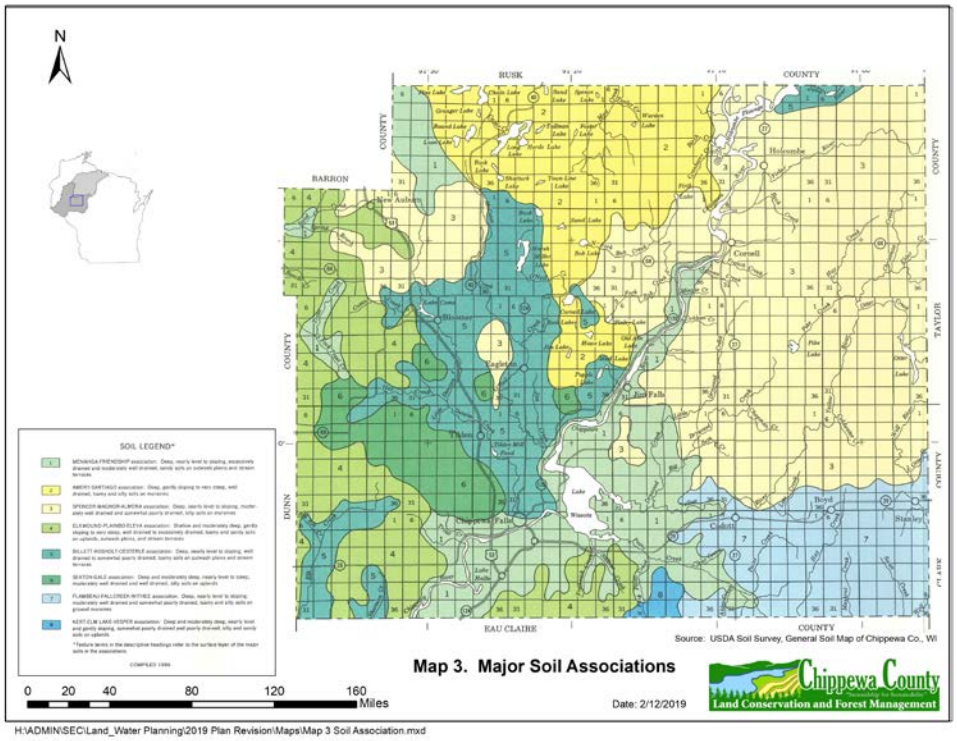


Map 1 - Location of Chippewa County

Map 2 illustrates the Pleistocene geology of Chippewa County with major glacial deposits.

Map 3 illustrates the corresponding soil associations.





The glacial geology and landscape in Chippewa County is complex.

Four (4) geographic areas can be distinguished based upon landscape type and drainage features: a well-defined recessional moraine, till plain, outwash plain, and a steeply rolling sandstone upland.

A description of these land forms and the corresponding influence on soil capability and land use can be summarized as follows:

Moraine

A well-defined recessional moraine extends southeast from New Auburn, in the northwest corner of the county, to Jim Falls on the Chippewa River. From Jim Falls, glacial deposits extend further southeast to Cadott providing evidence of earlier glacial advances. Surface features of the moraines are characterized by hummocky topography, closed surface depressions, and numerous kettle hole lakes, bogs, and wetlands. Soils of the area are of the Amery association. Land is used predominantly for forest production, outdoor recreation, and residential development.

Till Plain

A gently rolling till plain, drained by the Fisher River and Yellow River watersheds, extends north and east of Cadott to the borders of Clark, Taylor, and Rusk County. Drainage patterns in these watersheds are poorly defined and reflect glacial processes. Many perched and groundwater contact wetlands are found in closed surface depressions and along drainage ways.

Soils are generally of the Magnor-Almena-Spencer Association. Till deposits are in turn underlain by Cambrian sandstone or Precambrian granite or gneis. Land is used predominately for dairy-based agriculture.

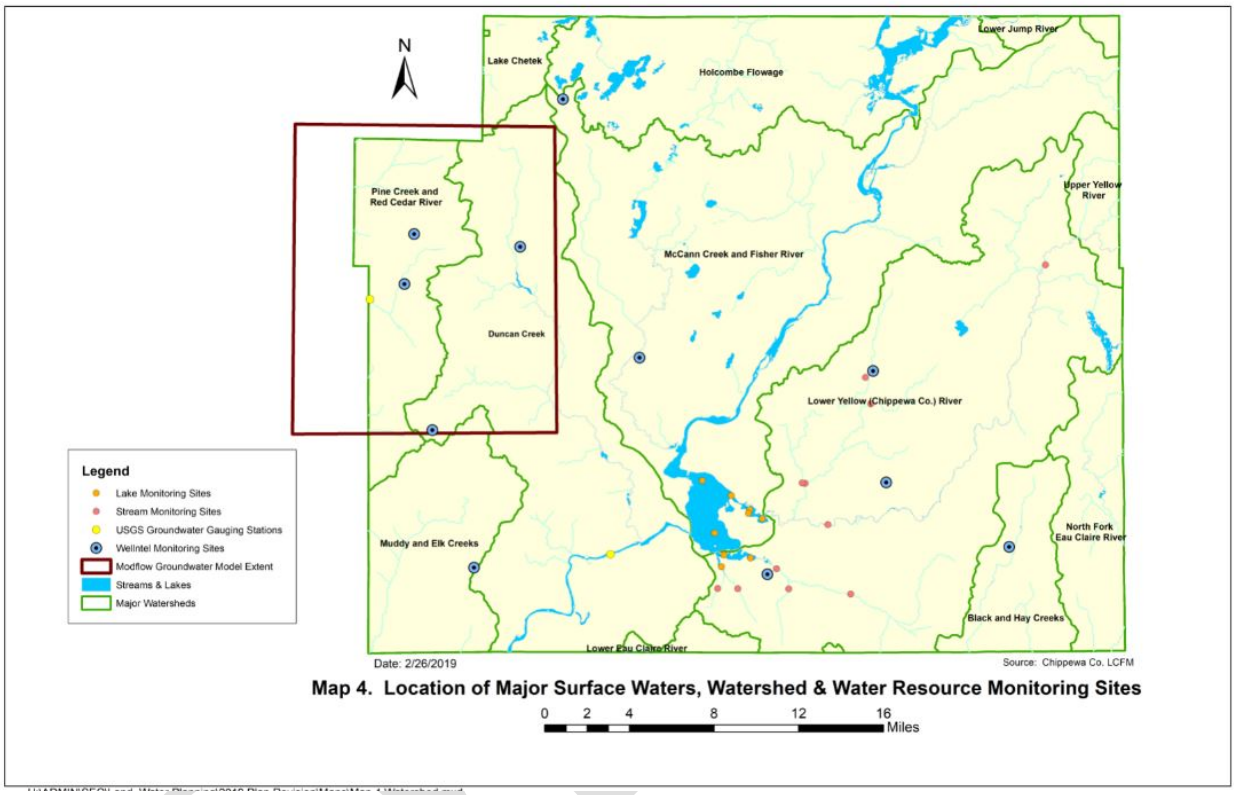
Outwash Plain

A broad, nearly level, outwash plain extends south from the recessional moraine to the Chippewa River. The area is drained by subbasins of the Duncan Creek, Fisher River, and Lower Yellow River watersheds. Drainage patterns are very poorly defined. Wetlands are limited to groundwater contact areas adjacent to surface waters. Soils are of the Menahga-Friendship and Billett-Rosholt-Oesterle associations. Outwash deposits may extend 100 feet below the land surface and are underlain by Cambrian sandstone and Precambrian Granite. Land is used predominately for cash grain agriculture.

Sandstone Upland

A steeply rolling sandstone upland abuts the central outwash plain and extends west to the Dunn County border. The area is drained by the Red Cedar, Muddy Creek, and Duncan Creek Watersheds. Drainage patterns are very well defined with channelized intermittent streams often extending to the upper reaches of the landscape. Wetlands are limited to groundwater seep areas found in association with contact springs in hillside draws or adjacent stream channels. Soils are generally of the Elkmound-Plainbo-Eleva association or the Seaton-Gale association. Land is used predominately for dairy and cash grain agriculture.

Map 4 shows the location of surface water resources and associated EPA HUC 12 watershed management areas. It also shows the location of active surface and groundwater gauges, and the location of known surface water quality monitoring sites managed by the WDNR and citizen volunteers.



Map 4. Location of Major Surface Waters, Watershed & Water Resource Monitoring Sites

5.0 OVERVIEW OF RESOURCE CONDITIONS & TRENDS

5.1 Overview of Recent Research Studies

From approximately 2009 to the present, there has been a significant development and expansion of irrigated agriculture, and non-metallic mining in western Chippewa County.

In response to public concerns over the cumulative impacts of this development, Chippewa County and the effected industries initiated environmental monitoring, and then collaborated to develop and conduct a series of scientific studies to assess the immediate and potential longer-term impacts of this on the land and water resource base.

These studies have documented the current physical condition of the affected soil, land, and water resources, the anticipated environmental impacts, and the resource management and conservation measures that can be applied to limit those impacts.

The purposes of these studies, as designed, can be summarized as follows;

1. Hydrogeologic Study of Western Chippewa County, (2012-2017), conducted by WI Geologic and Natural History Survey and US Geological Survey, (2012-2017) to evaluate how increased water demand by irrigated agriculture and industrial sand mines will affect groundwater levels and stream baseflows.

Note: Importantly, as part of this effort a groundwater model that has now been developed by the United States Geological Survey and the Wisconsin Geological and Natural History Survey (ModFlow 3D State Study) to evaluate the cumulative impacts of new and existing high capacity wells on groundwater elevations and surface water in western Chippewa County and eastern Dunn County.

2. Non-Metallic Mine Reclamation Research Study (2012-2024), conducted by UW-River Falls Dept. of Geology and Soil Science to demonstrate mine reclamation processes, and to document soil properties and functions before and during mine reclamation.

3. 2016 Chippewa County Groundwater Inventory and Well Sampling Project, conducted by UW-Stevens Point, UWEX Center for Watershed Science and Education (2016-2018), to update groundwater chemistry throughout Chippewa County, and to document spacial patterns and changes that have occurred from 1985 to 2007, and from 2007 to present.

4. West Central WI Groundwater Elevation Monitoring Network Feasibility Study, conducted by WGNHS, USGS, Wellntel, and Chippewa, Dunn, and Eau Claire Counties (2015-2018),to field test and document the feasibility of automated established groundwater elevation monitoring network to document continuous.

5.2 Information on Resource Conditions and Trends

A series of reports, maps, and data sets have been compiled that summarize the condition of land, water, and associated natural resources in Chippewa County. Much of this information is contained in published management plans developed by county departments, the Department of Natural Resources (DNR), and the West Central Wisconsin Regional Planning Commission (WCWRPC).

A listing of resource-based management plans and studies that describe natural resource conditions in Chippewa County, is provided in Table 1.

Table 1

A PARTIAL LISTING OF RESOURCE-BASED MANAGEMENT PLANS & SCIENTIFIC STUDIES FOR AREAS OF CHIPPEWA COUNTY PREPARED BY PUBLIC AGENCIES

Type of Plan	Responsible Agency	Date of Plan
Land Resource- Based Plans		
Chippewa County Farmland Preservation Plan	LCFM	1985
Chippewa County Erosion Control Plan	LCFM	1993
Chippewa County 10 Year Forest Plan	LCFM	2007
Chippewa County Outdoor Recreation Plan	LCFM	2008
Water Resource-Based Plans, Studies, Inventories		
Surface Water Inventory of Chippewa County	DNR	1963
Chippewa/Eau Claire Urban Area Sewer Service Plan	WCWRPC	1985
Chippewa Co. Baseline Groundwater Inventory & Water Quality Assessment	WGHNS	1985
Duncan Creek Priority Watershed Plan	DNR/LCFM	1995
Lower Chippewa River Basin Water Quality Mgt Plan	DNR	1996
Yellow River Nonpoint Source Pollution Inventory	LCFM	1998
Hallie Water Quality Management Plan - Phase I	DNR	1999
Upper Chippewa River Basin Water Quality Mgt Plan	DNR	2000
Hallie Water Quality Management Plan - Phase II	DNR	2000
State of the Lower Chippewa River Basin Report	DNR	2001
Phosphorus Loading & Trophic Status of Lakes in the Yellow River Watershed	DNR	2004
Biotic Inventory of Native Plant Communities & Threatened/Endangered Resources	DNR/LCFM	2006
Chippewa County Forest 15-Year Plan 2006-2020	DNR	2007
Pleistocene Geology of Chippewa County, WI	UWEC/WGNHS	2007
Chippewa Falls Urban Area Storm Water Mgt Plan	LCFM	2007
2007 Chippewa County Groundwater Inventory & Water Quality Assessment	LCFM	2008
Little Lake Wissota WQ Modeling Study & TMDL Plan	DNR	2008
Chippewa County Flood Plain Map & Report	FEMA	2008
Phosphorus Loading Model for Lake Eau Claire & Altoona	UWSP	2008
Little Lake Wissota Watershed Soil Test Inventory	LCFM	2009
Current Resource Inventories		
2016 Chippewa County Groundwater Inventory & Water Quality Assessment	UW-Stevens Point	2016
Hydrogeologic Study of Western Chippewa Co.	USGS/WGNHS	2018
Wellntel Groundwater Elevation Monitoring Network Study	WGNHS/LCFM	2018
Non-Metallic Mine Test Pilot Study	UW-River Falls	2018
Chippewa Falls Urban Area Storm Water Facilities Inventory	LCFM	2019

This information is augmented by a number of detailed resource inventories that are systematically updated and maintained by county, state, and federal agencies. A partial listing of pertinent resource inventories, data sets, and computer maps routinely maintained by Chippewa County is provided in Table 2.

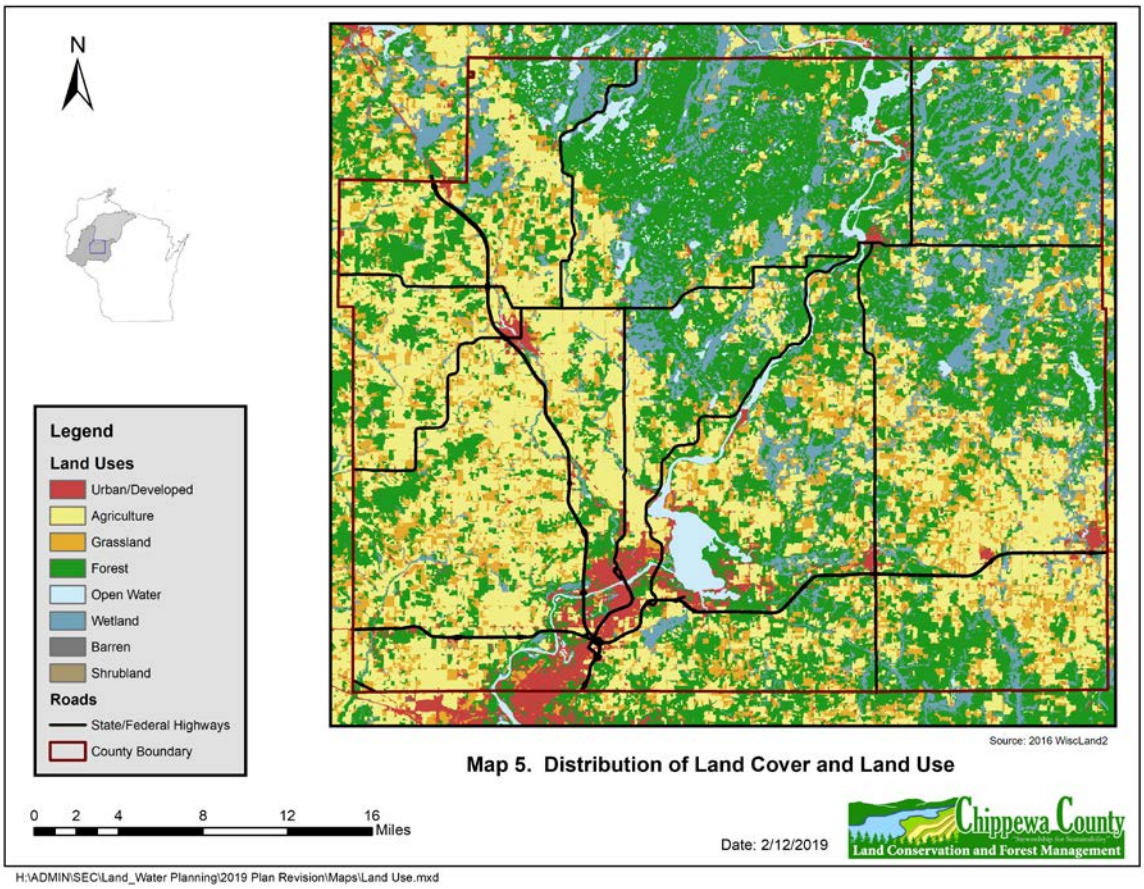
Table 2

A PARTIAL LISTING OF DYNAMIC GIS-BASED RESOURCE INVENTORIES AND DATA SETS MAINTAINED BY CHIPPEWA COUNTY

Dynamic GIS Layers	Maintenance Responsibility
Ownership Management Units	
Tax parcel boundaries	Land Records
Aerial Imagery	
1995 Landsat	
1998 Isc	
02, 04, 05, 06, 08, 10, 12, 14, 16, 18	USDA; NAIP
2012 LIDAR	Land Records
Farmland Management	
Farmland Preservation tracts and parcels	LCFM
USDA field and tract boundaries	USDA
Animal Waste Ordinance - manure storage sites	LCFM
Animal Waste Ordinance - nutrient mgt. fields	LCFM
NR151 Standard - evaluated parcels	LCFM
Erosion monitoring - individual fields	LCFM
Conservation Easements	
CREP	LCFM
Stewardship	LCFM
Non-Point Source	LCFM
Chippewa County Groundwater Inventory	
New well and replacement permits	LCFM
Private well chemistry	LCFM
Private well geology	LCFM
Wellntel groundwater elevations	LCFM
County Ordinance Monitoring	
NR135 non-metallic mines	LCFM
CF urban area storm water mg - BMP's	LCFM
Stormwater plan reviews	LCFM
Wetlands	
WDNR wetlands	WDNR
NRCS wetlands	USDA
Forestry Land Use	
County Forest Land Forest Management Units	LCFM
Natural Resource Features	
Perennial and intermittent streams	WGNHS
Drainageways	USDA
Lakes	WGNHS
Soils	USDA
Geology	WGNHS
Surface contours	WGNHS
Groundwater contours	WGNHS
Bedrock	WGNHS
Land cover	WDNR

5.21 Assessment of Land Cover and Land Use

The type and extent of current land cover and land use in the county has been established through satellite-based remote sensing techniques (1993 State LANDSAT, 1995 Chippewa County Land Use Project; 1998 WISCLAND). Land use changes are monitored through time using USDA (NAIP) and WDNR aerial photography and remote sensing data. Map 5 illustrates the current distribution of land cover and land use.



Map 5. Distribution of Land Cover and Land Use

Ongoing land use trends in unincorporated areas of the county are currently determined by monitoring agriculture land sales, the location of new domestic well permits, and general agricultural statistics.

Figures 1, 2, 3, reflect an ongoing land use and economic trend in Chippewa County whereby small dairy farms are being replaced by cash grain operations, or by large-scale dairy, swine, and poultry operations.

Figure 1 and 2 show the reduction of milk cow herd and cattle. Table 3 and Figure 3 show the corresponding change in crops grown as the crop producers have shifted from dairy-based forages to cash grain crops.

Figure 1

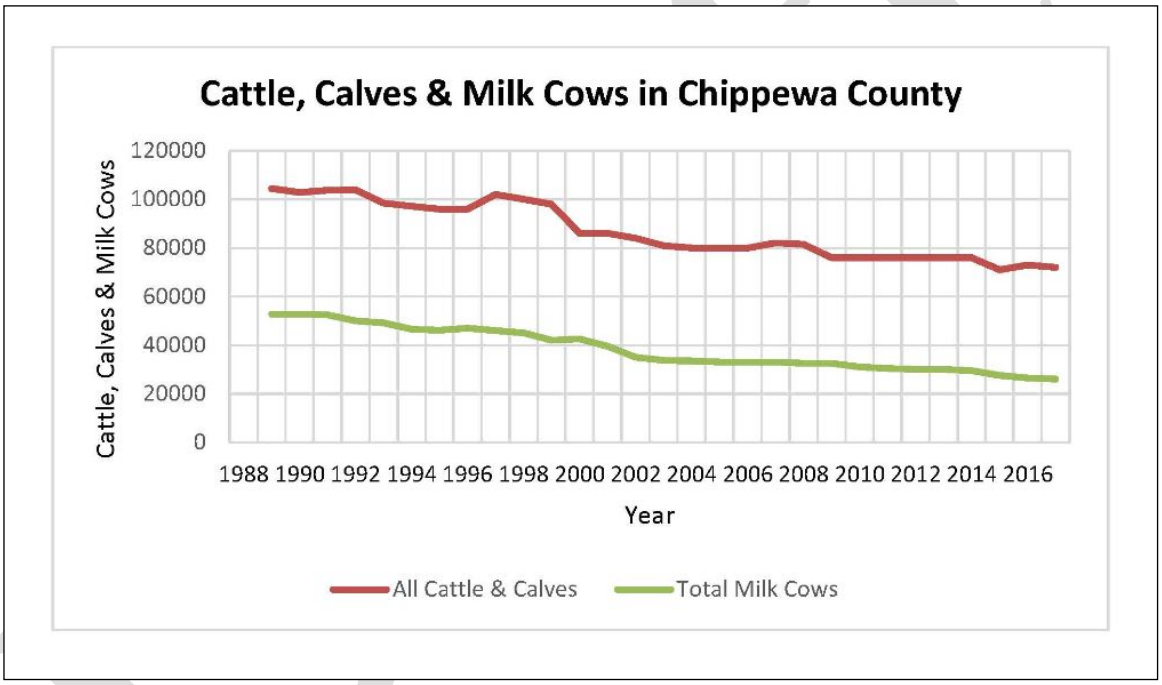


Figure 2

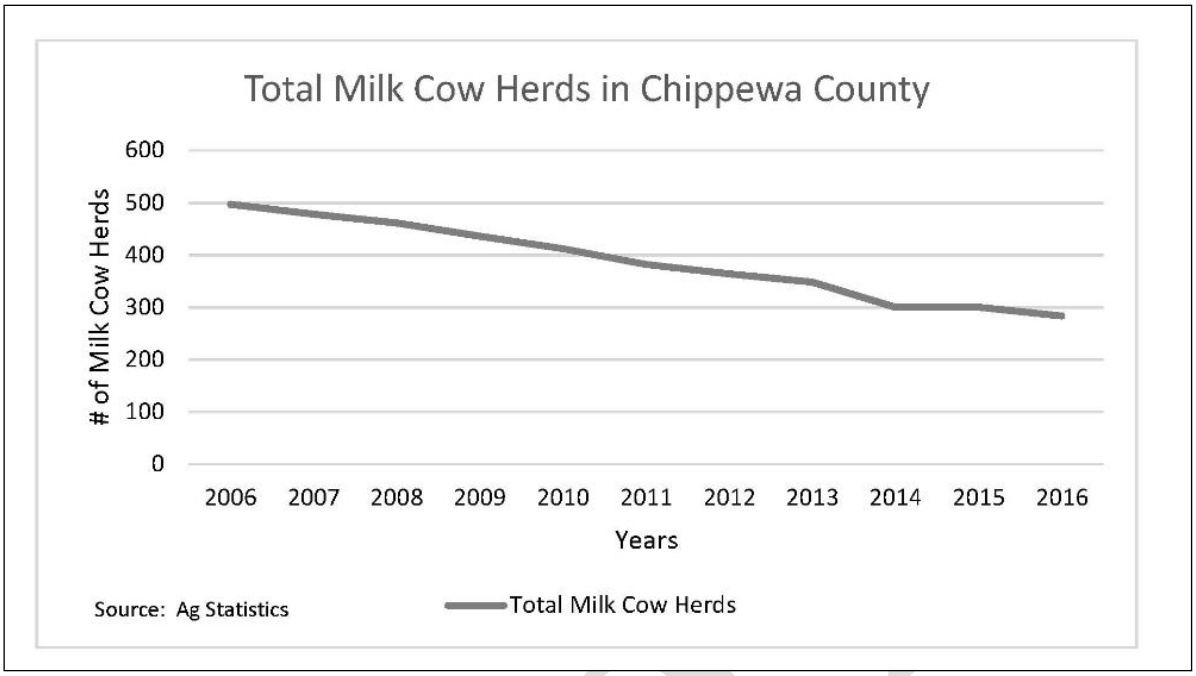


Table 3

ACRES PLANTED/HARVESTED FOR CROPS IN CHIPPEWA COUNTY, WISCONSIN

Year	Corn Harvested for Grain	Corn Harvested for Silage	Total Corn Harvested	Soybeans Planted	Oats Planted	Alfalfa Harvested as Dry Hay	Other Hay Harvested as Dry Hay	Specialty Crops Plants
1988	21,500	43,600	65,100	8,000	27,400	75,100	28,200	4,150
1989	49,300	21,900	71,200	7,250	26,300	82,000	20,900	3,770
1990	51,000	21,000	72,000	7,400	25,400	80,000	18,700	2,550
1991	54,400	17,400	71,800	9,600	20,900	81,000	13,800	3,050
1992	45,200	25,800	71,000	13,300	21,600	62,200	22,500	3,100
1993	37,700	26,800	64,500	9,900	20,800	60,000	25,500	3,100
1994	63,900	17,200	81,100	15,400	19,400	62,000	16,200	3,000
1995	61,800	15,900	77,700	12,700	18,300	62,200	16,400	3,100
1996	64,500	24,200	88,700	12,700	13,100	59,400	16,400	*1,900
1997	67,700	21,000	88,700	13,700	16,900	55,900	18,400	*1,600
1998	66,400	21,400	87,800	14,000	11,400	55,800	17,900	*2,000
1999	63,400	20,700	84,100	15,300	12,800	62,400	20,500	*2,200
2000	56,500	20,600	77,100	20,200	10,800	54,100	9,700	*1,900
2001	54,000	21,000	75,000	22,800	7,700	50,700	9,400	*1,300
2002	62,200	19,500	81,700	23,100	11,800	48,100	13,100	*1,700
2003	65,500	22,700	88,200	30,100	10,700	41,000	16,400	*1,400
2004	65,800	21,700	87,500	32,200	10,800	40,100	14,600	*1,800
2005	63,000	22,500	85,500	32,800	11,200	39,800	15,600	*1,600
2006	63,900	22,300	86,200	33,600	10,200	42,000	15,500	*2,100
2007	76,400	18,100	94,500	27,300	8,300	42,300	11,500	*1,700
2008	66,500	23,100	89,600	34,400	7,700	✶51,700	-----	*1,900
2009	91,000	22,500	113,500	37,400	8,000	41,500	10,400	Not Available
2010	92,000	18,200	110,200	39,300	7,800	36,400	10,000	♦700
2011	86,800	12,800	99,600	41,700	4,700	31,100	Not Available	Not Available
2012	78,000	24,600	102,600	47,800	5,400	24,900	Not Available	Not Available
2013	68,500	24,600	93,100	36,400	5,900	19,600	Not Available	Not Available
2014	76,900	Not Available	76,900	43,100	Not Available	25,000	Not Available	Not Available
2015	67,100	24,300	91,400	47,300	6,300	25,700	Not Available	Not Available
2016	75,900	19,200	95,100	52,600	4,600	24,600	Not Available	Not Available

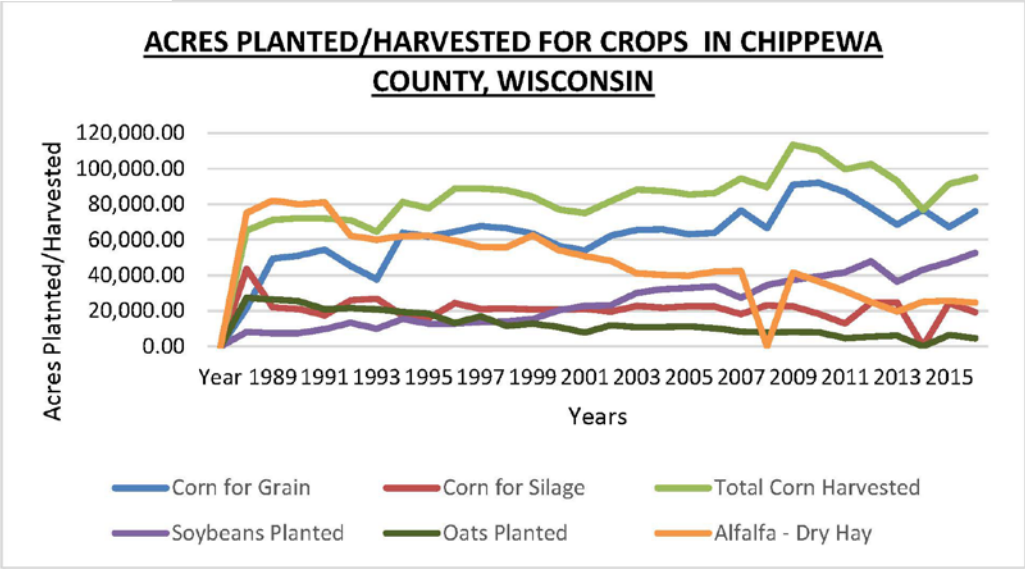
Specialty crops include barley, winter wheat, snap beans, green peas, and sweet corn.
♦Winter Wheat Only
*Barley Only

✶All dry hay (alfalfa & other hay harvested)

Source: Wisconsin Agricultural Statistics, 1988 - 2016

crops chart xls

Figure 3



Additional statistics on farm ownership compiled by the USDA Farm Service Agency (FSA) indicates that approximately 50% of the agricultural cropland in Chippewa County is now "owner operated" with the remaining 50% being owned by rural landowners and leased to agricultural producers.

Nearly all of this leased land is rented to immediate neighbors or to a limited number of larger-scale cash grain producers who use the acreage to accrue an economically viable land base. From discussions with producers, rental agreements in Chippewa County generally range in length from one to five years, with approximately 50% of the agreements based upon a three to five year lease, and 50% of the rental agreements conducted on an annual basis with year to year renewals.

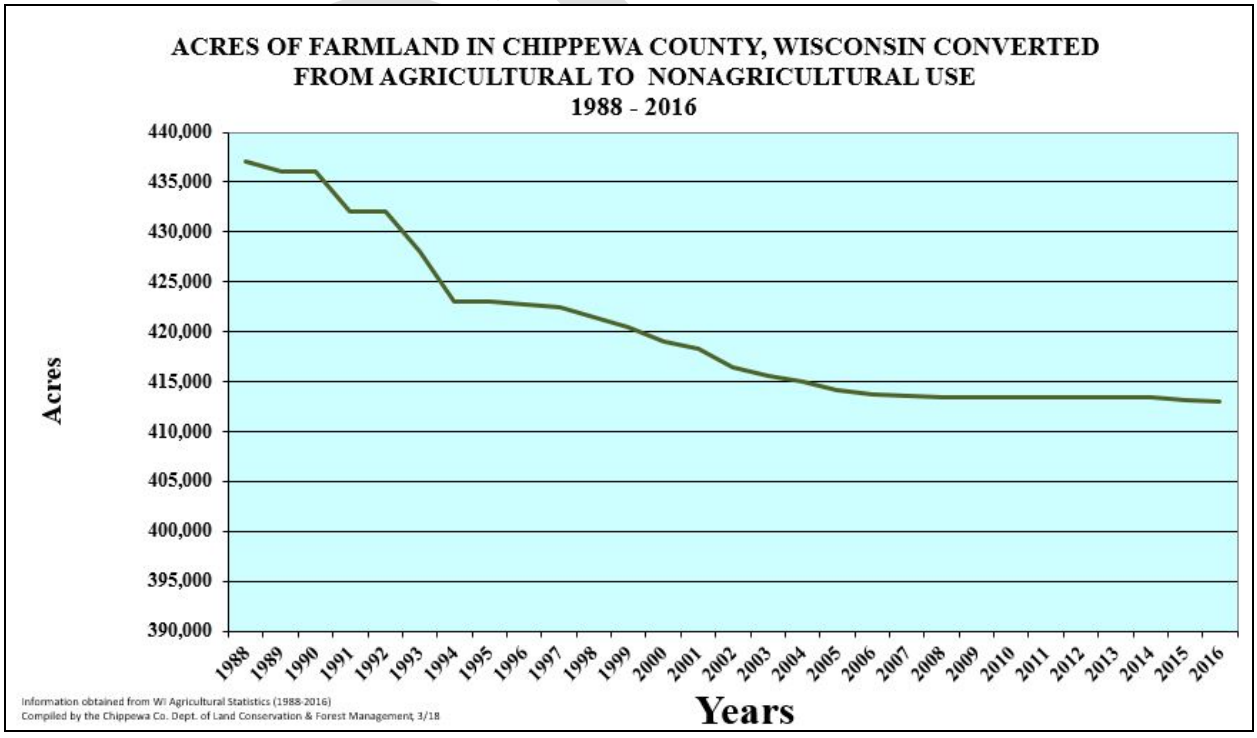
Table 4

A Summary of Chippewa County Land Sales
Total Number of Annual Agricultural Land Sales and Percent Converted to Nonagricultural Use

Year	Total of all agricultural land			Agricultural land continuing in agricultural use			Agricultural land being diverted to other uses			The percent of acres of agricultural land sold and converted to nonagricultural use
	No. of transactions	Acres sold	Dollars per acre	No. of transactions	Acres sold	Dollars per acre	No. of transactions	Acres sold	Dollars per acre	
1996	38	1503	480	29	1300	487	9	203	433	14%
1997	39	1893	599	30	1615	539	9	278	946	15%
1998	89	5877	1067	68	4826	1030	21	1051	1235	18%
1999	86	5010	1274	62	3893	1138	24	1117	1748	22%
2000	100	6050	1297	66	4638	1226	34	1412	1533	23%
2001	74	3727	1398	50	3046	1307	24	681	1807	18%
2002	86	4446	1732	52	2676	1627	34	1770	1889	40%
2003	84	5492	1598	56	4573	1460	28	919	2284	17%
2004	81	4961	1854	60	4386	1886	21	575	1610	12%
2005	52	2687	2464	35	1794	2178	17	893	3038	33%
2006	33	2573	1983	26	2149	1838	7	424	2718	16%
2007	51	3571	2150	48	3478	2084	3	93	4590	4%
2008	50	3607	2978	48	3498	2717	2	109	11370	3%
2009	35	2166	3061	34	2154	3065	1	12	2353	1%
2010	42	3458	3076	42	3458	3076	*			*
2011	52	3704	2476	50	3624	2494	2	80	1655	3%
2012	56	3374	3038	56	3374	3038	*			0%
2013	49	2443	3510	48	2408	3474	1	35	6000	1%
2014	43	3025	4536	42	3015	4546	1	10	1730	0%
2015	37	1871	4583	31	1631	3804	6	240	9880	13%
2016	31	2285	4497	27	2132	4417	4	153	5613	7%
2017	16	990	3967	15	939	3729	1	51	8335	5%

Information obtained from Wisconsin Agricultural Statistics (1996-2016)
Compiled by the Chippewa County Dept. of Land Conservation & Forest Management., 6/11/18
**Information not available through Wisconsin Agricultural Statistics (2010) or (2012)*

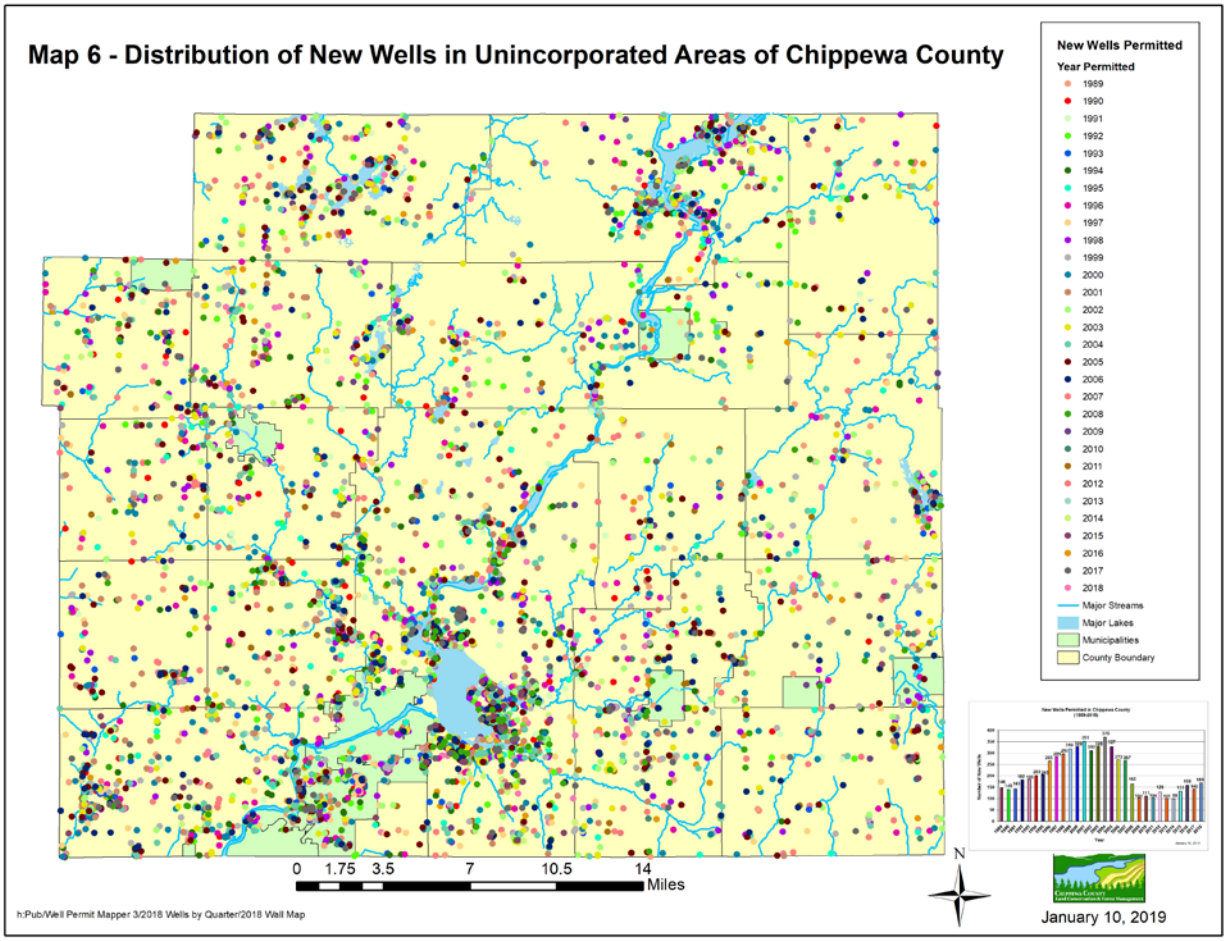
Figure 4



Map 6 illustrates the location, distribution, and rate of new residential development in unincorporated areas of the county. Table 4 documents the number of agricultural land sales from 1996-2017 and the percent of those sales converted to non-agricultural use. Figure 4 shows the rate at which agricultural land in Chippewa County is being converted to nonagricultural use.

Results of this monitoring show a trend where land historically used to support agricultural production is being converted to rural residential, commercial, and other nonfarm use.

Importantly, results of this monitoring would suggest that the rate of agricultural land conversion has slowed and stabilized since 2005, with most new rural residential development occurring on single lots in shoreland areas and residential subdivisions located in Chippewa Falls.



5.22 Assessment of Soil Condition

The Chippewa County Soil Survey (USDA, 1987) documents the distribution of soil types in Chippewa County. This soil survey provides a benchmark of soil conditions using measurements of soil depth, organic matter, and extent of topsoil loss.

The current rate of agricultural soil erosion was first estimated in the Chippewa County Erosion Control Plan, (1985), based upon a representative sample of small watersheds and farm fields.

Efforts have since been made by the USDA Natural Resource Conservation Service (NRCS) to periodically monitor soil condition and erosion rates through use of a transect survey conducted as part of a nationwide Natural Resource Inventory (NRI). This survey was last conducted in 2002 to document cropping practices and land cover at predetermined sample locations.

Results of the year 1985 soil erosion inventory and the 2002 transect survey are similar and suggest that approximately 80% of farm fields are being managed within the erosion control standard for sustained production (T - value; USLE). The remaining 15% are farmed at a rate 1-2 times T-value, with 5% farmed at a rate greater than 2T. Results of these assessments indicate that higher rates of erosion occur on fields situated on sandstone uplands located in the western one-third of the county.

NRCS now conducts annual 5% spot checks of conservation plans developed for highly erodible lands (HEL) to monitor erosion rates and the extent of compliance with federal erosion standards. Results of this compliance monitoring from 2015-2018 are now being compiled and reflect a growing use of no-till and cover crops applied to corn and soybeans harvested as grain.

Results of field spot checks during this period indicate a growing use of no-till applied to corn and soybeans harvested as grain.

The extent of soil erosion from nonagricultural sources has not been formally evaluated or qualified. Current land use trends suggest that there is the potential for accelerated rates of erosion on construction sites in urbanizing areas and on recreational trails subject to high intensity use on county forest lands.

From 2008-2019, there has been a number of recorded high intensity rainfall events that have routinely exceeded the 25 year, 50 year, and 100 year storms of record for the area.

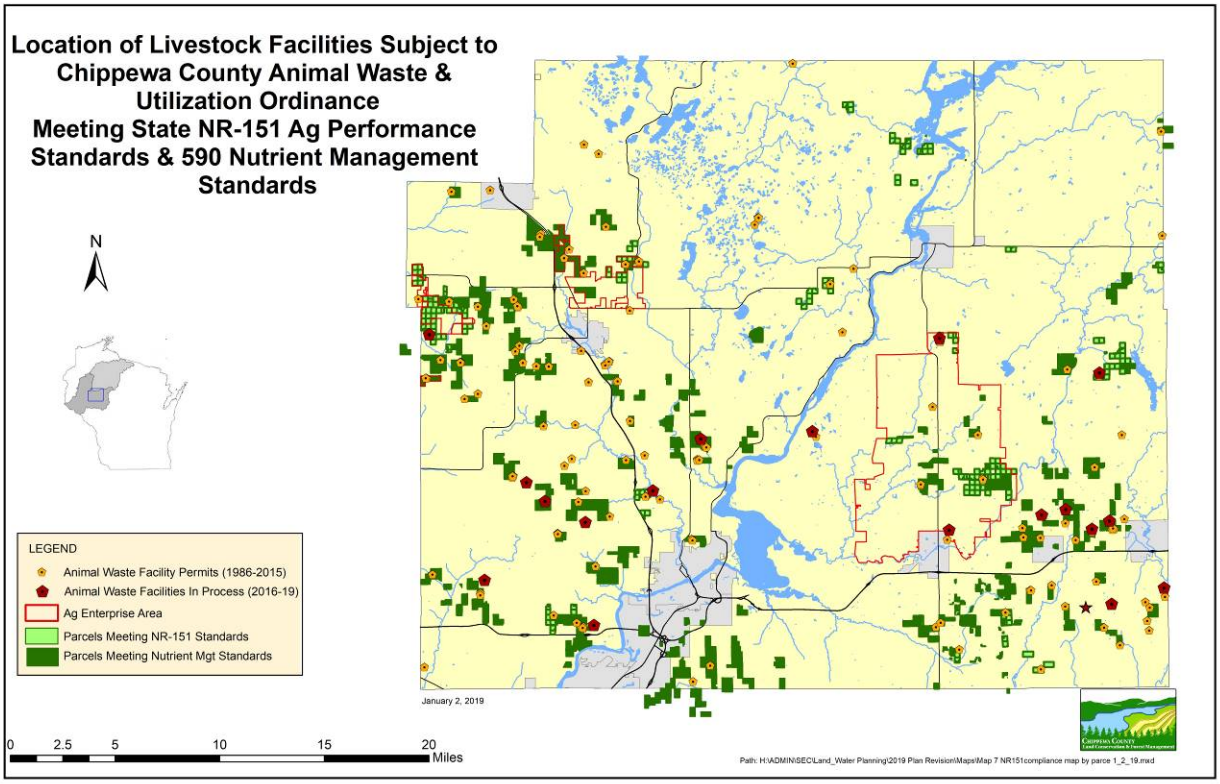
These extreme weather events have resulted in significant sheet, rill, and gully erosion, as reported and observed on both agricultural and non-agricultural lands, and are a part of significant concern.

In 1987, the Chippewa County Land Conservation Committee instituted an annual crop reporting process to systematically monitor the management of farms subject to compliance with county soil and water conservation standards, and more recently, on farms subject to compliance with state agricultural runoff performance standards.

Map 7 shows the location of farm parcels that have been evaluated by the LCFM, are routinely monitored, and are in compliance with the NR151 agricultural performance standards.

No other information has been gathered by the LCFM or other public agencies regarding the NR 151 compliance status of the other farm parcels or operations.

Map 7



5.23 Assessment of Surface Water Resource Condition

As a result of location, geology, and land cover, there are many high value and high quality surface water resources in Chippewa County.

The location and physical characteristics of these water resources are documented in an extensive inventory titled: Surface Water Resources of Chippewa County, (Wis. Conservation Dept., 1963).

The condition of each lake, stream, and river in Chippewa County has been evaluated and characterized by the Wisconsin Department of Natural Resources (WDNR) through use of a classification code assigned under the State of Wisconsin Surface Water Classification System. The code provides information regarding the current physical characteristics of the water resources, the degree and source of impairment, the potential optimal use, and the need for additional assessment, monitoring, and management. This information is maintained by WDNR, and is posted on the WDNR website at https://dnr.wi.gov/topic/surfacewater/swdv/

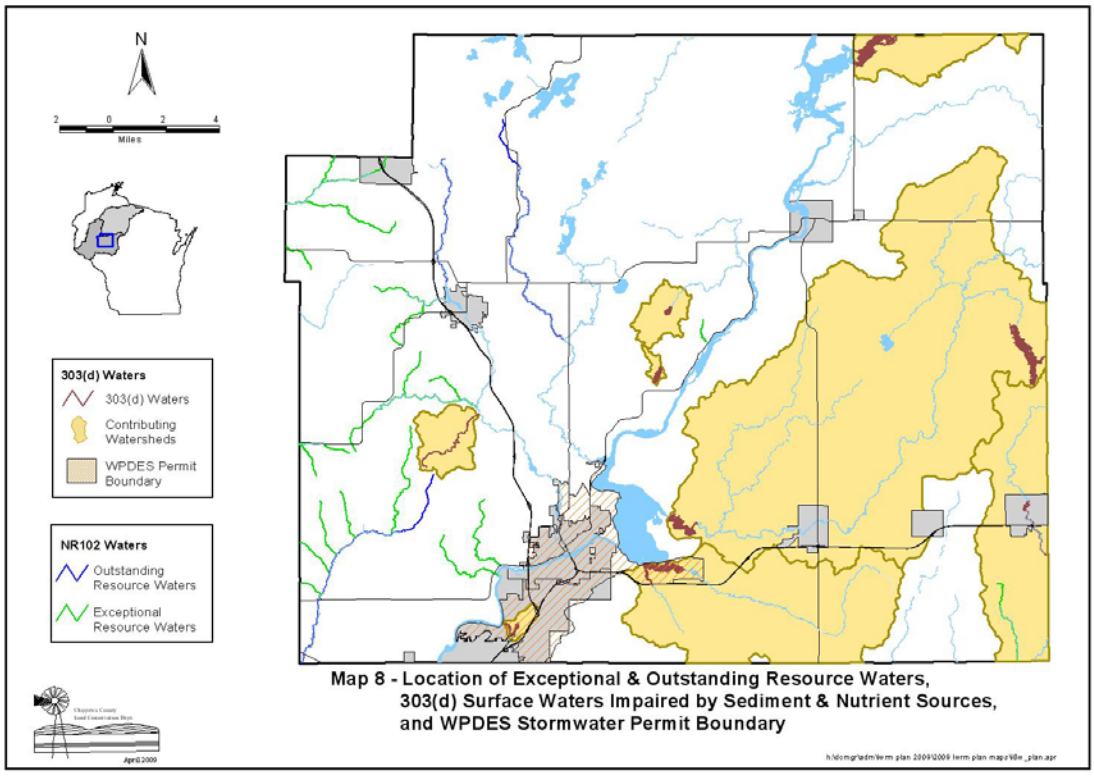
This information has been compiled in a series of watershed tables that summarize water resource conditions, as contained in detailed basin reports. (The State of the Upper Chippewa River Basin, WDNR, 1996; and The State of the Lower Chippewa River Basin, DNR, 2002). An explanation of these tables and information available for watersheds in Chippewa County is provided in Appendix 2, Figure 2.1, with most current updates posted at the site listed above.

The WDNR has also established instream water quality standards that apply to select classes of water resources. These water quality standards are subsequently used by WDNR to develop and implement strategies to meet water quality goals, set effluent discharge limits, and as a basis for making other regulatory, permitting, or funding decisions. The categories of water quality standards, which exist for each class of water, are defined by State Administrative Code NR102. This information is provided in Appendix 2, 2.2.

In response to requirements of Section 303 of the Federal Clean Water Act, WDNR has prepared a list of impaired waters. Through this list, the state identifies water bodies that do not currently meet water quality standards and those where the potential use of the water body is restricted by a specific pollutant or physical degradation.

The WDNR Bureau of Watershed Management is responsible for Wisconsin's 303(d) Impaired Waters Program and for the development of a Total Maximum Daily Load (TMDL) strategy to improve the condition of impaired waters. As part of current state program efforts, WDNR West Central Region has initiated and completed the resource monitoring, data collection, and modeling phase of the TMDL planning process for three (3) impaired water bodies in the Lower Chippewa River Basin located in Chippewa County: Otter Lake, Little Lake Wissota and Moon Bay of Lake Wissota. Results of that effort have been summarized in a report titled: Phosphorus Loading and Trophic Status of Lakes in the Yellow River Watershed, West-Central Wisconsin, (C.O.E. Feb. 2004).

Map 8 shows the location of exceptional and outstanding resource waters, the location of impaired surface waters included on the 303(d) list as a result of sediment or nutrients, and the location of urban storm water management areas subject to WPDES permit. The rivers and streams with 303(d) designation include those located in the Yellow River and Paint Creek Watersheds, as contributing to Otter Lake, Moon Bay of Lake Wissota, and Little Lake Wissota.



Map 8 - Location of Exceptional & Outstanding Resource Waters, 303(d) Surface Waters Impaired by Sediment & Nutrient Sources, and WPDES Stormwater Permit Boundary

The DNR West Central Region has now completed the TMDL planning process for Little Lake Wissota and has completed results in a report titled: Total Maximum Daily Load (TMDL) for the Little Lake Wissota Embayment of Lake Wissota Chippewa County, Wisconsin, (DNR Draft Report, 1/22/09).

In response to that designation, the Jacob Leinenkugel Brewing Company and Chippewa County LCFM worked with cooperating state and federal agencies to develop and implement a community-based public/private watershed business model titled: Little Lake Wissota Stewardship Project.

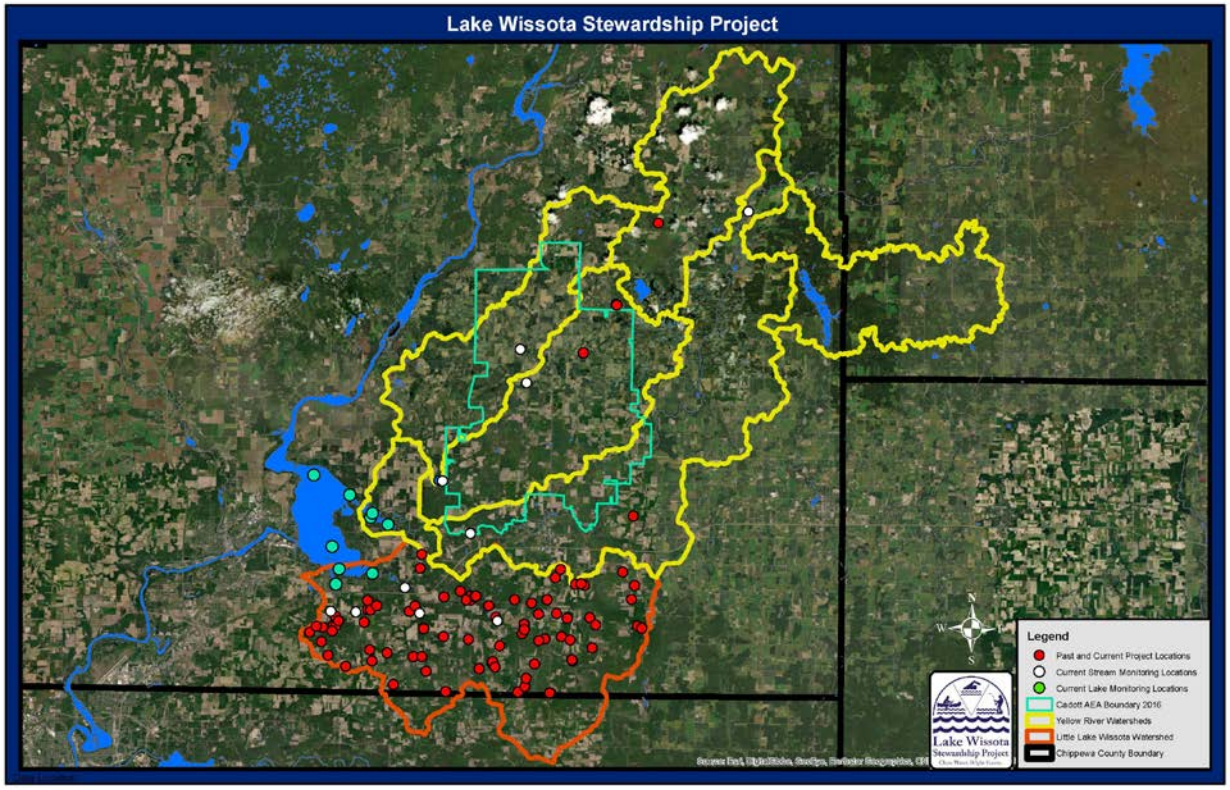
The project was implemented from 2009-2018 as a pilot project to document the extent of nonpoint source pollution control that could be achieved through use of targeted agricultural shoreland buffers and wetland restorations.

In 2019, Chippewa County entered a new five (5) year agreement with the Lake Wissota Improvement & Protection Association (LWIPA) to extend the project and expand it to include the Lower Yellow River Basin and Moon Bay of Lake Wissota.

As part of that effort, the LCFM is now working through WDNR to develop EPA Nine (9) Key Element Watershed Plans for Little Lake Wissota, and for Moon Bay of Lake Wissota.

Map 9 shows the location of the Little Lake Wissota, Moon Bay of Lake Wissota, and the contributing watersheds. It also shows the location of stream and wetland buffers that have been installed in the project areas under the current Lake Wissota Stewardship Project initiative.

Map 9



5.24 Assessment of Groundwater Condition

The condition of the groundwater resource in Chippewa County was initially established through the Chippewa County Groundwater Inventory, (WGNHS, 1985). The inventory was based upon information compiled from approximately 3,000 recorded well locations and documented aquifer characteristics, groundwater elevation, and groundwater chemistry throughout the county.

Since its establishment, this groundwater inventory has been systematically expanded and is routinely maintained by the Dept. of Land Conservation & Forest Management, with support of the Planning & Zoning Dept., which administers the state well permitting program, under the authority of NR 812.

The Chippewa County Groundwater Inventory is a collection of hydrogeologic and well data that can be used to characterize, monitor, and model current groundwater conditions.

The sources of information used to create and maintain the inventory include:

1. The ongoing and systematic collection of permitted domestic well point locations and well construction logs used to characterize subsurface geology, groundwater elevations, and groundwater chemistry.

2. Scheduled county-wide groundwater sampling projects conducted at approximately ten (10) year intervals, used to characterize groundwater chemistry, determine spacial trends, and to document changes over time.

3. The ongoing and systematic collection of groundwater chemistry through the Chippewa County rural drinking water testing program, used to encourage rural residents to test their wells, and to collect and map data on NO_3-N concentrations and point locations on an ongoing basis.

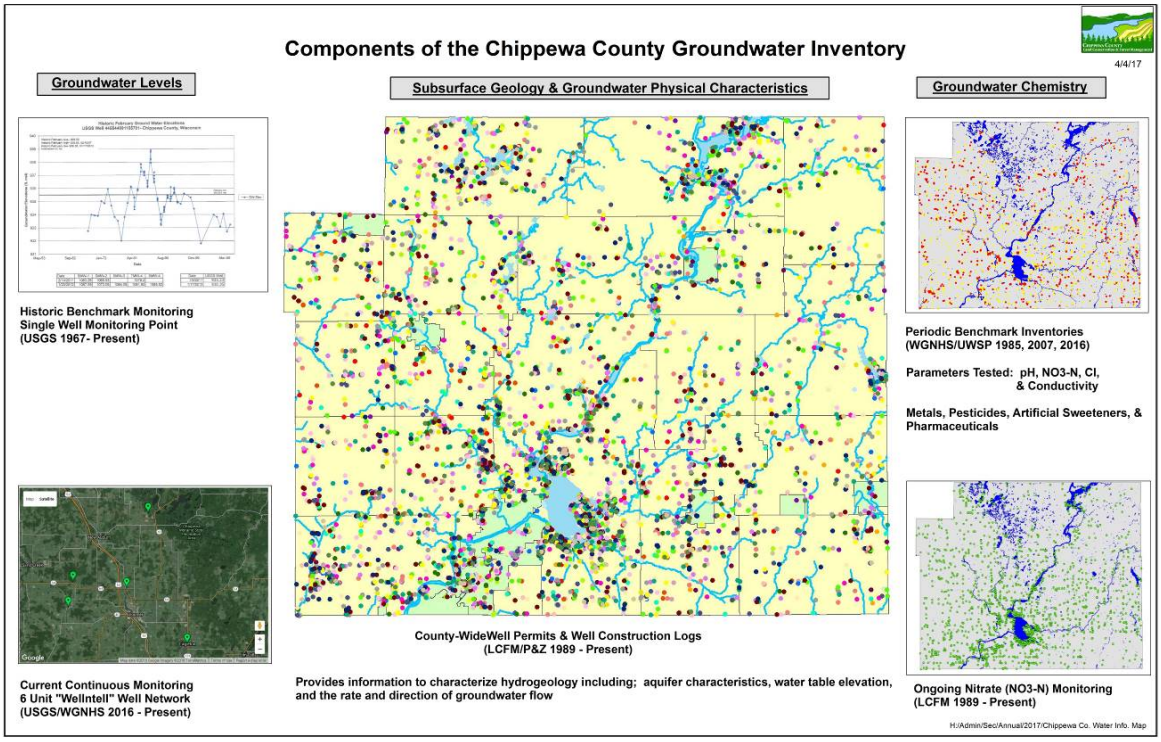
4. The ongoing and systematic collection of groundwater elevation monitoring information through the Chippewa County automated groundwater elevation monitoring network (Wellntel) used to continuously monitor groundwater elevations, determine aquifer trends and to document changes over time.

5. Scheduled research studies, conducted by universities, geologic agencies, and accredited consultants to collect and evaluate scientific data, and to model groundwater systems.

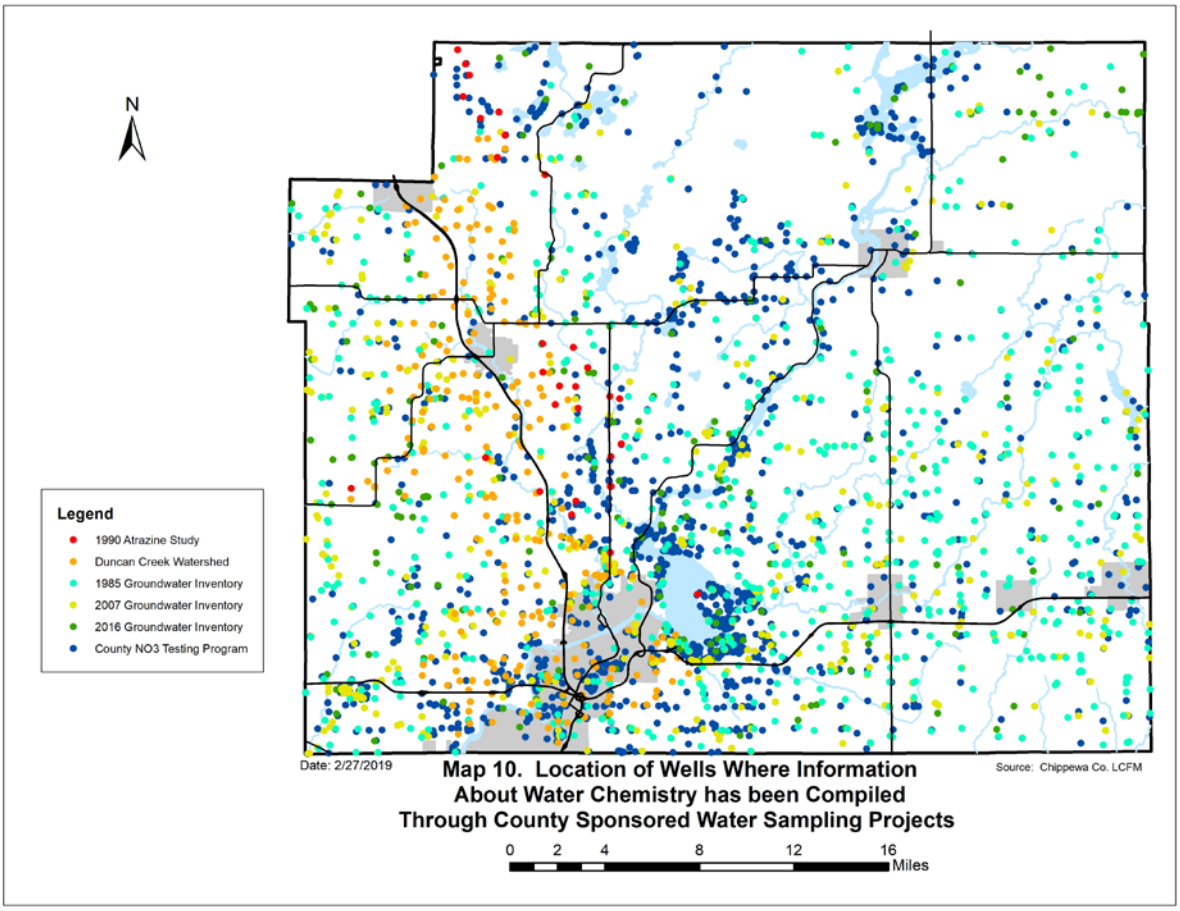
In 2018, Chippewa County amended Chapter 30 of its Code of Chippewa County, directing the LCFM to actively maintain this inventory on an ongoing basis, to provide a scientific basis for future groundwater management efforts.

The contributing elements of the groundwater inventory are illustrated in Figure 5.

Figure 5



Map 10 shows the location of wells where all domestic groundwater water chemistry has been compiled since 1985.



Map 10. Location of Wells Where Information About Water Chemistry has been Compiled Through County Sponsored Water Sampling Projects

The last scheduled county-wide groundwater sampling project was conducted in 2016 and 2017 by the UW-Stevens Point Center for Watershed Science and Education. Results of this effort are documented in a report titled: 2016 Chippewa County Groundwater Quality Inventory.

Under this project, approximately 750 domestic wells were sampled for a wide range of chemical parameters, including pH, standard metals, nitrates, chlorides, and phosphorus.

The chemical results of this sampling project, as summarized by geological deposit and aquifer type are provided in Figure 6.

Figure 6

2016 water quality by Pleistocene geology category

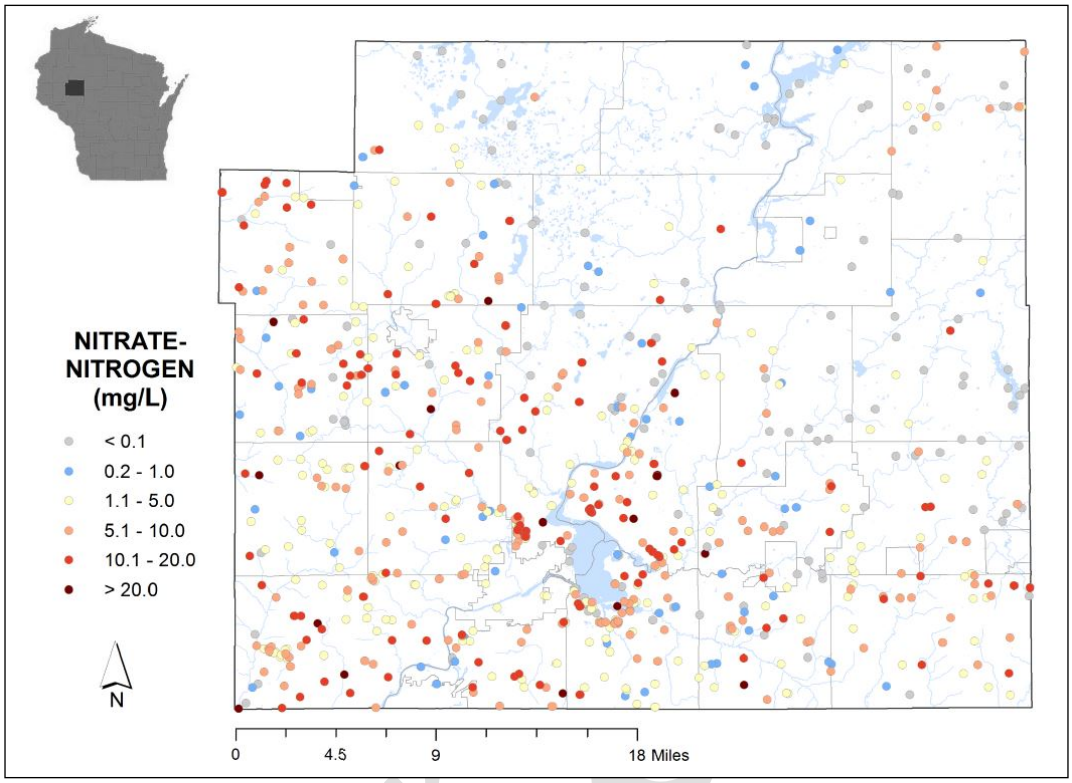
Analyte	Cambrian (n=170)					Glacial Sediment (n=207)					Meltwater Stream Sediment (n=360)				
	Mean	StDev	Median	Min	Max	Mean	StDev	Median	Min	Max	Mean	StDev	Median	Min	Max
Alkalinity (mg/L as $CaCO_3$)	**28**	34	**16**	2	268	**121**	73	**137**	5	358	**48**	42	**32**	4	289
Arsenic (mg/L)	**<0.003**	0.001	**<0.003**	<0.003	0.005	**<0.003**	0.001	**<0.003**	<0.003	0.008	**<0.003**	0.001	**<0.003**	<0.003	0.007
Calcium (mg/L)	**15.8**	9.0	**15.0**	<0.2	50.4	**37.3**	24.8	**36.3**	<0.2	207.7	**22.2**	15.3	**20.7**	<0.2	139.5
Chloride (mg/L)	**18.6**	18.2	**12.8**	0.9	102.2	**35.6**	118.4	**11.8**	0.8	1520	**27.3**	41.7	**14.2**	0.6	451
Conductivity (umhos/cm)	**168**	109	**139**	26	759	**359**	399	**302**	29	5220	**222**	156	**192**	31	1561
Iron (mg/L)	**0.066**	0.345	**0.055**	<0.004	4.092	**0.427**	1.106	**0.032**	<0.004	6.963	**0.495**	2.061	**0.019**	<0.004	22.1
Magnesium (mg/L)	**5.2**	4.2	**4.2**	<0.2	31.7	**13.8**	10.3	**13.2**	<0.2	87.9	**7.8**	5.7	**7.0**	<0.2	43.7
Manganese (mg/L)	**0.025**	0.088	**0.005**	<0.002	0.014	**0.166**	0.325	**0.010**	<0.002	1.849	**0.138**	0.572	**0.005**	<0.002	7.17
Nitrate (mg/L)	**5.9**	4.7	**5.0**	<0.1	29.6	**3.6**	4.3	**1.9**	<0.1	18.1	**6.4**	6.3	**4.8**	<0.1	34.9
Phosphorus (mg/L)	**0.359**	0.333	**0.301**	<0.004	1.813	**0.080**	0.135	**0.040**	<0.004	1.334	**0.126**	0.203	**0.028**	<0.004	1.11
pH (standard units)	**6.3**	0.7	**6.18**	406	9.78	**7.2**	0.7	**7.36**	5.17	8.31	**6.8**	0.5	**6.70**	5.48	8.87
Potassium (mg/L)	**4.5**	14.9	**2.1**	<0.2	167.9	**1.6**	1.4	**1.2**	<0.2	9.7	**1.5**	2.2	**1.2**	<0.2	38.4
Sulfate (mg/L)	**9.9**	6.3	**8.2**	0.8	37.1	**10.8**	8.0	**9.5**	<0.2	58.6	**7.8**	4.7	**6.9**	<0.2	31.9
Total Hardness (mg/L as $CaCO_3$)	**61**	37	**56**	<4	211	**150**	103	**147**	<4	881	**88**	61	**80**	<4	529

Results were then compiled, analyzed, and mapped.

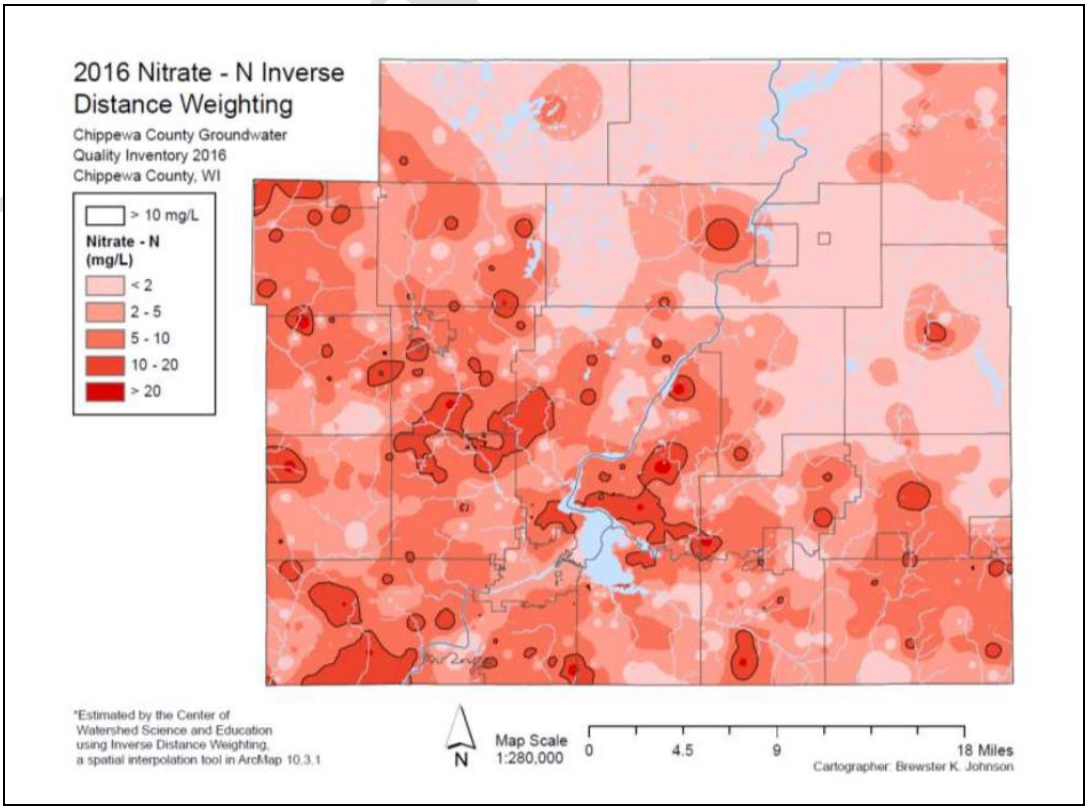
Results show that nitrate and chloride concentrations in agricultural and urbanizing areas are elevated above background levels. In these areas, fifty percent (50%) of the wells tested had concentrations of nitrate-nitrogen (No_3-N) that reflected cultural influences, ranging from 3-9 mg/l. Approximately 25% of the wells tested approached or exceeded the safe drinking standard of 10 mg/l, with 18% exceeding the standards.

Map 11 and 12 illustrate the concentration of NO_3-N located throughout the county using the well point locations and then depicted using spacial analysis.

Map 11



Map 12

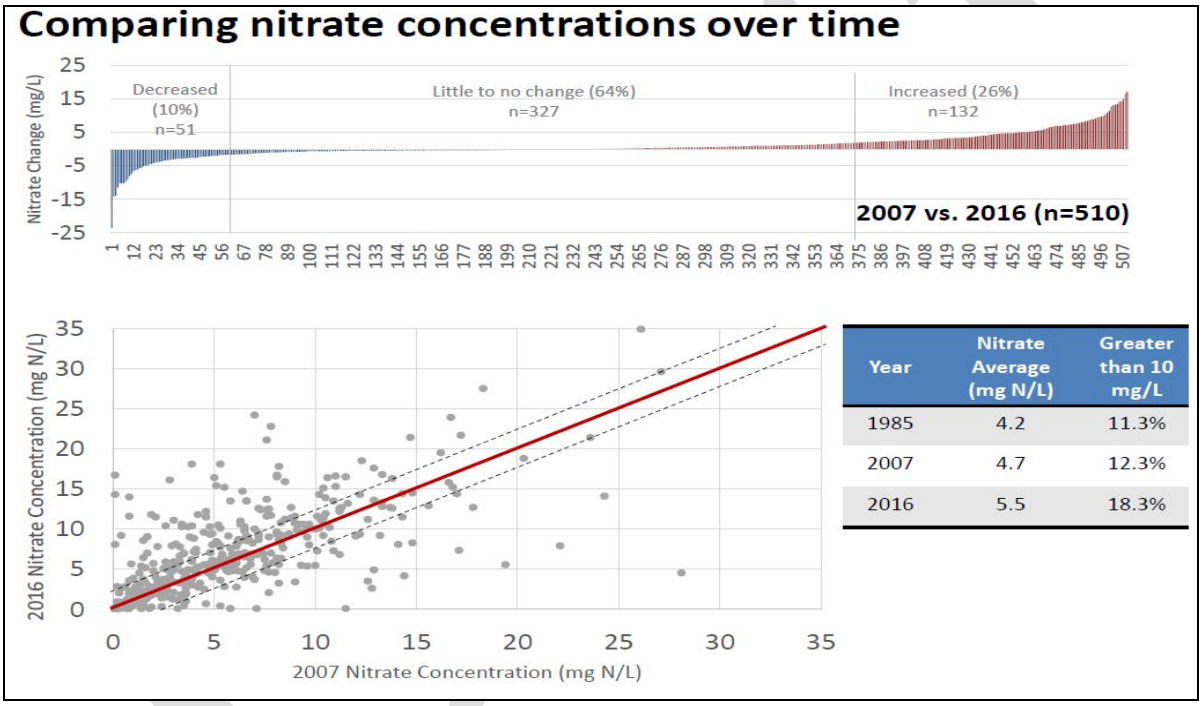


In circumstances where wells had been previously sampled through earlier county-wide projects (1985 and 2007), a statistical analysis was conducted to determine the extent and rate of change over time.

A separate nitrate source analysis was conducted using a subset of 200 wells to determine the source of nitrate in circumstances where elevated concentrations were detected..

Figure 7 provides a comparison of NO_3-N concentrations generated from three (3) separate county-wide sampling projects conducted in 1985, 2007, and 2016, which attempted to use the sample wells with known point locations and well construction logs.

Figure 7



Results show that in 1985, 11.3% of the wells sampled exceeded the 10 mg/l standard, with concentrations increasing to 12.3% in 2007, and then to 18.3% in 2016.

Importantly, a direct comparison of 510 wells sampled in both 2007 and 2016 showed that 64% showed little change in NO_3-N concentrations while 10% decreased and 26% increased in concentrations.

Results of the nitrogen source analysis shows that both agricultural land use and septic systems contribute to elevated nitrate concentration. Results indicated that higher concentrations of NO_3-N in agricultural areas with low density of septic systems, attributed largely to agricultural sources while higher concentrations of NO_3-N in urbanizing areas with higher density of septic systems attributed largely to urban sources.

5.25 Assessment of Wetland Condition

The type, size, and location of wetlands in the county have been documented in the Chippewa County Wetland Inventory, (WDNR, 1983, 1996). A second, more detailed inventory of agricultural areas has documented the location of wetlands, farmed wetlands, and converted wetlands (NRCS, 1987, 1996).

As a result of the location, glacial geology, and land cover, there is a wide range of wetland hydrologic types and associated wetland plant communities.

The condition of these wetlands vary greatly based upon their location, extent of disturbance, and surrounding land use.

Results of recent biological surveys suggest that there are many diverse and high-quality wetland sites in undisturbed areas throughout the county. Surveys also suggest that there are many drained or highly degraded wetland sites that could be readily restored.

Activities that contribute to wetland degradation include agricultural drainage and drainage system maintenance, wetland fills associated with urban development, changes in wetland hydrology from increased urban runoff, and sediment from urban and agricultural sources.

As a result of agricultural production trends and deregulation, there has been a recent increase in the number of agricultural drainage systems installed in farmed wetlands and in isolated wetlands, as authorized under the Section 313 of the Clean Water Act or the WDNR Administrative Rules.

Similarly, as a result, state deregulation has seen a recent increase in the number of small wetland fills that have occurred, primarily in shoreland areas associated with urban development.

6.0 Land and Water Issues of Priority Concern

Land and water issues of priority concern have been identified using planning methods described in Sec. 3.0, and the information about current resource condition and use, as described in Sec. 5.12. These issues are complex and significantly interrelated. Issues or priority concern have been defined for the local environmental setting as follows:

Issue 1

There is a global trend toward climate change that will have direct impacts on the growing season, weather events, and the land, water, and natural resource base.

The impacts of climate change, as modeled for Wisconsin, suggest that the state will become warmer and wetter overall, have higher seasonal temperatures, and experience more extreme storm events.

If realized, these changes will directly affect the duration of the growing season, the hydrology of surface and groundwater systems, and will impact all associated aspects of the environment.

Issue 2

As a result of changing demographics, and current agricultural trends, there are fewer members of the community who are directly engaged in agricultural production, processing, or related agribusiness service support.

As a consequence, there is a diminished understanding of local agriculture and the linkages between food, land, and water.

Issue 3

As a result of current agricultural and land use trends, there are now fewer farms in the county, with a growing portion of the agricultural land base that is either owned by, or leased to larger scale producers.

There now remain a number of smaller-scale agricultural operations, (supported by on or off farm income), that continue to produce agricultural products. Many of these operations produce or house livestock on farmsteads, that do not have animal waste management systems, that are located in close proximity to surface waters.

As a result, there are separate groups of landowners and producers that have a different set of soil and water conservation challenges that are unique to the type and scale of their operations.

Issue 4

There is an ongoing trend in production agriculture where small-scale dairy operations are being replaced by cash grain operations.

These cash grain operations now produce corn and soybeans to meet domestic and international market demand.

The resulting change from forage-based livestock agriculture to cash grain agriculture has significantly reduced the amount of grasses, forages, and small grains on the landscape.

Given market forces and economics of scale, these operations are seeking greater assurance of sustainable yields by installing irrigation and agricultural drainage systems to overcome soil limitations at select locations.

If not properly managed, these changes may result in higher rates of soil erosion, increased runoff, and increased potential for surface and groundwater pollution.

Issue 5

There is an ongoing trend in production agriculture where small-scale dairy operations are being replaced by larger-scale dairy, hog, or poultry operations, or by small-scale beef operations.

If not properly managed, the change from a forage livestock-based cropping system to a cash grain cropping system will reduce the diversity of crops grown and may result in higher rates of soil erosion, the depletion of soil organic matter, and higher rates of commercial fertilizer and pesticide use.

The change from small dairy operations to large-scale livestock operations will result in higher concentrations of animals and animal waste at select locations. If not properly managed, these higher concentrations at select locations increase the potential for point and nonpoint source air and water pollution.

In conjunction with unlimited residential development in unincorporated areas, this trend toward more intensive agricultural use will increase the potential for rural land use conflict between agricultural producers and rural nonfarm residents.

Issue 6

There is an ongoing demand and need for non-metallic minerals available from finite deposits, located in select locations throughout the county.

Commercial grade sand and gravel deposits in Chippewa County are generally located in proximity to lakes, streams, and rivers, and are used to supply aggregate to build and maintain infrastructure.

Commercial grade sandstone deposits in the county occur at or near the surface in bedrock control landscape in western Chippewa County in proximity to high quality streams. These deposits are used to supply industrial sand for natural gas and oil production.

These commercial grade mining deposits occur at sites that are also highly sought for residential development, and agricultural and forest production.

If left undisturbed, these sites have an inherent environmental value and contribute to the natural ecology of the area.

If not properly planned, managed, and restored, nonmetallic mining operations may cause land use conflicts, create runoff and nonpoint pollution, and degrade the value and productivity of the land base.

Issue 7

There is a land use trend in Chippewa County where most new residential development is occurring outside of municipal service urban service areas, in shoreland areas, and in rural areas historically used for agricultural production.

If not property planned and managed, unsewered lots and subdivisions in urbanizing areas and shorelands will increase stormwater runoff and pollutant loads from private onsite waste treatment systems (POWTS).

These nonpoint pollution sources can, in turn, cause direct impacts to groundwater, lakes, streams, and flowages.

If not properly planned and managed, residential and commercial development in shoreland corridors will increase storm water runoff and nonpoint pollution, causing direct impacts to lakes and streams.

If not limited or properly managed, nonfarm development in agricultural areas will have a negative effect on the viability of ongoing agricultural operations. Nonfarm development in agricultural areas causes land values to escalate, removes land from production, and increases the potential for conflict between farm and nonfarm residents.

Issue 8

As a result of ongoing land use trends, many undisturbed areas located throughout the county, will be either converted to other uses, or will be used more intensively, resulting in a potential loss of ecological diversity and an accelerated increase in exotic and invasive species.

If not properly managed, there will be greater fragmentation, site conversion, and more intensive use of undisturbed forested tracts, wetlands, stream drainage corridors, and shoreland areas.

This fragmentation and more intensive use of relatively undisturbed areas will result in the further degradation of native plant communities and will contribute to the spread and proliferation of nonnative and invasive species, both plant and animals, terrestrial and aquatic.

Issue 9

As a result of agricultural and land use development trends, there has been a documented increase in the concentration of nitrate-Nitrogen in groundwater, (above the established safe drinking standard of 10mg/l), as measured in domestic wells from 1985 to 2016, with the rates of increase accelerating significantly from 2009 to 2016.

NO_3-N concentrations in groundwater can be used as an indicator of other pollutants that may be entering groundwater. NO_3-N concentrations occurring above 10 mg/l are a public health concern.

If not properly informed of these facts, county residents who consume water from domestic wells may unknowingly be assuming undue health risks.

If not properly managed, nitrate concentration in groundwater from agricultural sources and from private onsite waste treatment systems can be expected to increase throughout the county and over time, particularly at sites with a limited capacity to attenuate groundwater pollutants.

Issue 10

In response to ongoing growth and recreational trends, there is an increasing demand for landscape-scale outdoor recreational trails and supporting facilities on public land.

Recreational trails and supporting facilities are primary vectors for invasive plants, animals, and associated pathogens. These pests disrupt native species and communities, disrupt physical, chemical, and biologic cycles, reduce biodiversity, and devaluation of sustainably harvested forest products.

If not property developed and managed, public use of recreational trails and supporting outdoor recreational facilities may cause soil erosion and soil compaction, resulting in loss of soil productivity and the degradation of aquatic habitat, and water quality.

Issue 11

Recent changes to the organizational structure and service delivery areas of cooperating State and Federal agencies, have negatively affected communications among agency staff and, in turn, the capacity of the county and public agencies to coordinate local service delivery at the county level.

A lack of structured communication among agency staff now limits the ability of the county and public agencies to exchange information and to explore opportunities to optimize the use of available resources (staff hours, skill sets, and $), to pursue local resource management objectives.

7.0 Resource Management Objectives

General goals and management objectives for land and natural resource management in Chippewa County have been outlined in a series of previous planning efforts conducted by the Wisconsin Dept. of Natural Resources and Chippewa County (Chippewa County, the Present and the Future, 1971; Chippewa County Farmland Preservation Plan, 1985; Chippewa County Erosion Control Plan, 1987; Duncan Creek Clean Water Plan, 1991, and Chippewa County Land and Water Resource Management Plan, 2004, 2008, 2014), the Chippewa County Forest Comprehensive Land Use Plan (2006 – 2020), and the Chippewa County Comprehensive Plan (2010).

7.1 Land Management Objectives

Public goals and policies for land use, agricultural land preservation, and environmental preservation have been previously adopted through the Chippewa County Farmland Preservation Plan, (1985), the Chippewa County Comprehensive Plan, (2010), and the Chippewa County Land & Water Resource Management Plan (2014).

To meet the planning requirements of Wisconsin Stats., Chapter 91 and 92, the resource management objectives for land conservation, agriculture, and natural resource management are as follows:

Objective 1
Maintain the physical condition, biodiversity, ecology, and environmental functions of the landscape, including its capacity for flood storage, groundwater recharge, water filtration, plant growth, ecological diversity, wildlife habitat, and carbon sequestration.

Objective 2
Maintain the capacity of the land to support productive forests and agricultural working lands to sustain food, fiber, and renewable energy production.

- Manage soil quality to maintain the land's capacity to support sustained production.
  - -Measure and monitor soil quality using soil organic matter, carbon content, moisture holding capacity, fertility, and current erosion rates.

- Identify and preserve designated blocks of working lands to maintain an adequate landmass to support agricultural and forestry operations that are production-oriented and that contribute to the county's economy.
  - -Identify the location, size, and boundaries of working land conservation areas through use of town or county-based planning processes, and landowner registries.

•Limit the fragmentation and urban development of productive forests and agricultural working lands.

-Manage the extent of fragmentation and urban development through the adoption and use of rural density standards and land division ordinances, as established by towns in cooperation with the county.

-Manage the type and location of new development in unincorporated areas through the adoption and use of voluntary land conservation agreements developed with interested landowners; and zoning districts and structural setbacks, as established by towns in cooperation with the county.

-As a priority, seek to protect those productive forest and agricultural lands identified as prime agricultural land, Land Capability Classes I-III.

Objective 3

Encourage future urban development to occur within incorporated municipalities; or in designated urban service areas where development and associated public services have been planned by a responsible municipality (Note: altered from Chippewa County Farmland Preservation Plan, 1983).

•Identify the location, size, and boundaries of urban service areas through the use of public planning processes initiated by the towns, cities, or villages.

Objective 4

Protect areas of special environmental, natural resource, or open space significance.

•As a priority, seek to conserve:

-Land located in a planned conservation or land management area, formally designated and adopted by a public agency or municipality.

-Land located immediately adjacent publicly owned forest, park, or recreational land.

-Undisturbed stream corridors, undeveloped lakes, and areas where threatened or endangered species have been inventoried and documented.

•Inventory, monitor, and control terrestrial invasive species to protect and maintain the ecological value of high-value plant communities and natural resource areas.

Objective 5

Restore the condition, environmental functions, and productive capacity of abandoned or degraded lands.

•Reclaim and revegetate abandoned farmland, surface mined lands, and brownfields to:

-Produce biomass for energy production.

-Reestablish native plant communities through planting or natural progression.

7.2 Surface Water Management Objectives

General management objectives for surface waters located in Chippewa County have been established in a report published by the Wisconsin Department of Natural Resources, titled The State of the Lower Chippewa River Basin Plan, (2001). These state objectives are recognized by Chippewa County as a foundational element of interagency efforts to manage water resources.

For the purpose of this plan, the resource management objectives for surface water in Chippewa County are as follows:

Objective 1
Manage storm runoff to limit flood peaks and maintain current stream base-flow conditions and lake elevations.

- Accelerate the use of best management practices (BMP's) to increase soil moisture holding capacity, landscape depressional storage, and groundwater infiltration and recharge.

Objective 2
Reduce sediment and nutrient loading to surface waters from nonpoint sources to levels necessary to meet:

- The potential use classification for the waterbody, as designated in the Wisconsin Surface Water Classification System, or

- The planned water resource management objective, or the prescribed Total Maximum Daily Load Limits (TMDLs), as developed through a formal watershed planning process, or

- Instream water quality standards as established for individual lakes, streams, or stream reaches.

Objective 3
Maintain, improve, and restore the natural condition of the shoreland corridor, littoral zone, and instream habitat of streams and lakes.

Objective 4
Inventory, monitor, and control aquatic invasive species, both plant and animal.

7.3 Groundwater Management Objectives

For the purpose of this plan, the resource management objectives for groundwater in Chippewa County are established as follows:

Objective 1

Manage concentrations of contaminants in groundwater aquifers to pursue Preventative Action Limits (PAL), as established in Wisconsin Admin. Code NR140.

Reduce or reverse the rate of increase in NO_3-N concentrations as measured in groundwater, using a defined network of domestic wells, established as the "Chippewa County Groundwater Monitoring Index".

Objective 2

Maintain historic groundwater levels and limit impacts to surface waters, wetlands, and well water supplies by managing the depletion of groundwater resources from high and low volume consumptive uses:

- Monitor the groundwater elevations in aquifers that are used to support municipal water supplies, as measured by the extent of permanent drawdown in wellhead protection zones.

- Monitor the groundwater elevations in rural subdivisions and high density developments, as measured by the extent of drawdown in the affected private wells.

- Institute urban and rural water conservation programs to conserve groundwater supplies.

Objective 3

Manage concentrations of groundwater contaminants in the zone of influence of municipal water supplies, to within prescribed standards for public and municipal water supplies, as defined in NR140.10 and NR140.12.

7.4 Wetland Management Objectives

For the purpose of this plan, the resource management objectives for wetlands in Chippewa County are established as follows:

Objective 1

Seek to achieve a net gain of wetland acres through wetland restoration and creation, as measured through program tracking and wetland inventory monitoring.

Objective 2

Avoid the destruction of existing wetlands, and maintain the environmental functions that these sites provide by seeking development alternatives that will not impact the wetland site.

When destruction cannot be avoided, minimize the degradation of wetland sites and the loss of environmental functions by incorporating principals of engineering into site design.

When site avoidance and minimization through engineering design are not feasible, compensate for the loss of wetlands through onsite mitigation conducted to reestablish the natural functions, hydrologic values, and plant communities in the immediate watershed of wetland loss.

When inkind, onsite mitigation is not feasible, compensate for wetland losses using the concept of a wetland mitigation bank.

8.0 Program Goals and Objectives

Program goals and objectives have been developed to describe how the county will address land and water issues of environmental concerns, in order to pursue resource management objectives.

Broad goals have been established for the following program areas: energy conservation and waste reduction, land conservation and sustainability, water conservation, nonpoint source pollution control, and planning and environmental regulation.

Individual program objectives are provided as a means to pursue each goal. These program objectives are outcome-based, measurable, and are intended to be accomplished over a period of years. A series of stepped actions are then listed that could be used to advance each program objective.

8.1 Energy Conservation and Waste Reduction

Goal 1

Develop, support, and advance county initiatives that prepare the county to adapt to climate change, including initiatives that conserve energy, reduce waste, and serve as a catalyst for broader community efforts to conserve energy, limit carbon emissions, and increase renewable energy production.

Objective 1

Fac**tor climate change into county operational plans as these plans affect:**

1. Emergency response and disaster relief.

2. Road and dam infrastructure as managed and mandated by the county departments.

3. Management of the County Forest timber resources.

4. Soil and water conservation, stormwater management, and flood and prevention on private lands.

Objective 2

Develop and implement an energy conservation program for county operations.

Action 1

Review and evaluate the operational status of the existing Chippewa County energy conservation plan.

Action 2

Consider the costs and benefits of updating the plan to systematically record and monitor energy use and to identify, select, and implement new energy conservation projects.

Action 3
Establish an energy conservation education and outreach project and program to inform the employees, other municipalities, and the public of the energy conservation savings achieved to date, and plans and opportunities for future savings.

Objective 3
Encourage alternative energy production that uses wind, waste stream bi-products, or biomass generated from agricultural or forestry operations.

Action 1
Design and implement a pilot project to evaluate, further refine, and advance the use of agricultural biodigesters using animal waste as a fuel source for local heat, fuel, or electrical energy production.

Action 2
Design and implement a pilot project to evaluate the use of industrial scale composting technology, using animal waste and crop residue from a working livestock facility, to evaluate the feasibility and cost efficiency of producing compost as a soil amendment.

Action 3
Design and implement a pilot project to determine the feasibility of producing renewable electrical energy from distributed sources, including manure digesters and small-scale farmstead-based wind generators.

• Assess interest by local electrical utilities and farm organizations to explore and evaluate this technology.

•Prepare a project proposal that includes funding and site selection.

•Assist interested operator(s) to plan, implement, monitor, and evaluate a renewable energy project.

Objective 4
Develop and administer recycling and solid waste management programs that reduce, reuse, and ensure the proper disposal of waste materials and maintain the county's role as Responsible Unit Coordinator for municipalities.

Action 1
Maintain the Chippewa County Household Recycling Revenue Sharing Program to identify cost effective and efficient service delivery options from the private sector.

Action 2
Conduct evaluations and collaborate with public and private schools (K012) to encourage, increase the rate of recycling.

Action 3
Conduct evaluations and collaborate with municipalities to encourage recycling at all public facilities, including public parks, campgrounds, ballfields, and facilities.

Action 4

Design and implement a project to collect and market office paper from all county-owned and other municipal and public institutional facilities.

8.2 Land Conservation and Sustainability

Goal 2

Develop and administer conservation programs that preserve the land, support sustainable production, provide biodiversity, and protect the natural ecology.

Objective 1

Actively support the economic viability and sustainability of existing agricultural Operations, the local agricultural economy, and rural communities.

Action 1

Establish structured and ongoing communication with the Chippewa County Economic Development Corporation (CCEDC) to identify and support economic development opportunities for agricultural producers, processors, and related business enterprises.

Action 2

Working in association with local agricultural producers and processors, agricultural organizations, UWEX and CCEDC, define and implement project initiatives that seek to assure a diverse mix of agricultural operations that are approximately scaled to provide local job opportunities, maintain and support the local agricultural economy, and sustain rural communities.

Actively explore and support initiatives that maintain existing family-owned operations and agri-businesses, establish local food to table markets, encourage farm-based renewed energy production, and encourage cooperative development and business ventures.

Action 3

Develop a pilot project working through agricultural producers in an established Agricultural Enterprise Area (AEA) to meet a defined community need and agricultural business objective.

Objective 2

Support the efforts of individual landowners, private nonprofit conservation organizations, and local municipalities to protect farmland and to preserve productive "working lands" under WI Stats., Chapter 91.

Action 1

Actively support the efforts of landowners and agricultural producers who petition to develop and implement an Agricultural Enterprise Area (AEA), or who seek to participate in Farmland Preservation Zoning under WI Stats., Chapter 91.

Action 2

Provide technical, financial, and administrative support to landowners and producers who enter farmland preservation contract or who participate in Farmland Preservation Zoning to meet State program requirements.

•To meet state and county program requirements, conduct NR 151 farm evaluations and provide technical services to all new and existing program participants.

•Provide ongoing agronomic and conservation technical support to assist landowners and producers to adopt and install agricultural best management practices to meet and exceed state agricultural performance standards.

•Conduct annual reporting and certification process to verify landowner compliance.

Objective 3

Administer the Wisconsin Conservation Reserve Enhancement Program (CREP) to establish stream and wetland buffers and assess program options for continued county administration.

Action 1

Maintain and expand an annual buffer evaluation and maintenance program to assure contract compliance and to assist landowners to maintain the biodiversity and environmental functions of buffers over time.

Action 2

With DATCP and FSA, explore USDA Program options to establish special area designation to facilitate expanded program functions as targeted to watersheds with poorly defined drainage patterns located east of the Chippewa River.

Action 3

With DATCP and FSA, explore USDA program options to allow periodic mowing and harvest of perennial hay to control woody vegetation , maintain grassland habitat cover, and remove nutrients.

Note: Assuming a strong local USDA Farm Service Agency commitment, the CREP Program will be administered and managed in 2019-2023 as the county's highest priority for implementation of state and federal conservation programs. As a priority, county services will be directed to assist landowners to participate in either the 15 year or permanent conservation easement program option.

Objective 4

Encourage biodiversity and sustainable agriculture, forest, and biomass production on private lands by providing technical assistance and conservation program services to landowners.

Action 1

Administer educational services, technical services, and financial incentives to agricultural producers through state/federal agricultural conservation and nonpoint pollution control programs.

Action 2

Administer educational services, technical services, and financial incentives to woodland producers through local producer networks, woodland management organizations, and state/federal forestry programs.

Action 3
Provide technical services to the owners and operators of non-metallic mine sites, abandoned mines, and brown fields to reclaim disturbed sites and achieve end land uses that are productive and sustainable.

Objective 5
Support the efforts of major farm and forestry organizations and public agencies to develop and pursue market-based mechanisms to sequester carbon and increase soil organic matter as part of ongoing agricultural and forestry operations, including efforts to compile, market, and monitor carbon credits.

Objective 6
Support the efforts of individual landowners, private nonprofit conservation organizations, and municipalities to preserve unique lands with high public and environmental value.

Action 1
Actively administer and maintain the Chippewa County Stewardship Program to support the acquisition of land and/or conservation easements by municipalities or nonprofit organizations for conservation purposes.

Action 2
Initiate a project to increase public awareness of the "Living Land Endowment", as an established agency directed endowment of the Chippewa County Community Foundation, to encourage and facilitate county giving to support public acquisitions of land with high natural, ecological, or scientific value.

Action 3
With private, nonprofit conservation organizations, define the location of high priority conservation areas having significant public value or unique ecological significance.

Action 4
In cooperation with nonprofit conservation organizations, maintain a wild lakes registry for undeveloped lakes, as a companion to the Wisconsin Scientific and Natural Areas Program.

Objective 7
Encourage land conservation and biodiversity through use of corridor initiatives.

Action 1
Work in association with local landowners, the US Park Service, the Ice Age Council, and the Chippewa County Chapter of the Ice Age trails, to plan and establish the location of the Natural Ice Age Trail corridor and trail, east of the Chippewa River.

Action 2
Work in conjunction with the WI Dept. of Natural Resources, and interested landowners to determine the feasibility of establishing an environmental corridor linking the McCann Creek Fishery Area to the Nature Ice Age Scientific Reserve.

Objective 8

Encourage and support efforts to reclaim surface mined lands to native plant communities with high ecological value or to working lands with limited potential for surface water or groundwater pollution by applying meets reclamation performance standards of NR 135 and non-point source pollution control standards of NR 151.

Action 1

Develop and expand working relationships with permitted non-metallic mines and university researchers to establish test plots to demonstrate non-metallic mine reclamation processes and to establish reclamation test plots.

Action 2

Establish and maintain a working relationship of ecological consultants to assist landowners restore, manage, and maintain native plant communities on private lands.

Action 2

Establish and maintain a working relationship with consultants and the WDNR to provide controlled burn services on public and private lands.

Objective 9

Encourage biodiversity and sustainable forest and biomass production on public lands by supporting the efforts of the custodial agencies responsible for developing and administering property management plans.

Action 1

On county forest lands managed by Chippewa County, identify areas of unique ecological significances and apply the County Forest Plan to manage and monitor these areas.

Action 2

On public lands managed by state agencies, actively participate in the public participation process used to develop and periodically revise property management plans.

Objective 10

Protect and buffer the existing public land base by pursuing conservation easements or fee title purchase options on select parcels located within and immediately adjacent the designated blocking boundaries of public forests, parks, or conservation management areas.

Action 1

Implement a project to identify select parcels of high environmental or ecologic value located within or adjacent public land management areas.

Action 2

Contact landowners to explain options for permanent resource protection through use of conservation easements or fee title sale.

Objective 11

Support efforts by public agencies and nonprofit conservation organizations to inventory and control upland and aquatic invasive species on public and private land.

Action 1

Participate in information exchange and networking opportunities through the Lower Chippewa Invasive Partnership, Inc., to raise public awareness, monitor and control upland invasive species populations.

Action 2

Support efforts by individuals, lake organizations, and local municipalities to inventory, monitor, and control aquatic invasive species.

Action 3

Working through the Chippewa County Forest Comprehensive Land Use Plan and land management program, further develop and continually refine efforts to control upland and aquatic invasive species on lands managed as part of the Chippewa County Forest system.

Action 4

Working through the Dept. of Administration, Facilities and Parks Division, develop and refine efforts to control upland and aquatic species on land managed as part of the County Parks system.

Objective 12

With WDNR and interested non-profit conservation organizations, develop a community-based habitat improvement and access program to expand public hunting, fishing, trapping, and outdoor recreation uses on private lands.

Objective 13

Working with interested landowners and farm operators, encourage and facilitate the use of standardized conservation leases to provide economic stability to assist landowners to meet agricultural performance standards for cropland and to improve soil health.

8.3 Water Conservation

Goal 3

Develop, support, and implement water conservation programs to maintain current aquifer volumes and to protect the county's drinking water supply.

Objective 1

Develop and implement soil and water conservation programs that protect wetlands, restore hydrology and improve storm water storage capacity, soil infiltration, and groundwater recharge.

Action 1

Develop a small watershed project proposal to restore natural hydrology by implementing cropping systems and structured practices to improve groundwater recharge in select watersheds where infiltration has been reduced as a result of non-metallic mining.

Action 2

Develop and support project proposals and local, state, and federal initiatives to protect, restore, and enhance wetlands.

Objective 2

Maintain and expand the utility of groundwater quantity and groundwater quality programs conducted to maintain the Chippewa County Groundwater Inventory.

Action 1

Routinely administer and compile data to support the contributing components of the Chippewa County Groundwater Inventory.

Action 2

Establish and actively maintain the groundwater index monitoring network to continuously monitor annual groundwater chemistry at representative wells located throughout the county over time.

Action 3

With WDNR, evaluate the feasibility and develop formal agreements to exchange water quality information generated through state well sampling conducted under NR 812.27, and well permit locations generated through county well permitting under NR 845.05.

Objective 3

Upgrade and actively maintain the Chippewa County's Wellntel groundwater monitoring network to remotely monitor and record groundwater elevations and associated stream baseflow conditions at representative locations throughout the county.

Action 1

Actively maintain the existing Wellntel network, as established at select well locations to continuously monitor groundwater elevations.

Action 2

Compile and post existing groundwater elevation monitoring data to extend the record of groundwater monitoring and to document fluctuations through time.

Action 3

Develop a project design and grant proposal to further refine, enhance, and improve the utility of the monitoring network by linking groundwater elevation monitoring to stream baseflow monitoring and gauged stream locations.

Objective 4

Actively encourage and support the development of water conservation programs to protect and maintain public and private water supplies.

Action 1

Distribute, actively apply, and support the use of the USGS ModFlow Groundwater Model that has been created to evaluate high capacity wells in western Chippewa County.

Action 2

Contact municipalities to determine the status of wellhead protection programs and to determine any municipal concerns or interests.

Support the efforts of municipalities that implement wellhead protection planning projects and programs.

8.4 Lake and Flowage Management

Objective 1

Establish mechanisms to facilitate structured communication between the county, DNR, and established lake district(s), lake associations, and other lake organizations to improve institutional capacity for lake and flowage management.

Action 1
Conduct a formal survey to assess interest on behalf of lake districts and associations.

Action 2
Establish web page links to network and share lake management information of common value to riparian residents and shoreland owners.

Action 3
Plan and conduct an annual Chippewa County Lake Conference sponsored by cooperating lake organizations on a round robin basis.

Objective 2

With WDNR and interested lake organizations, design, implement, and maintain a county-based lake water quality program and database, and using remote sensing technology to monitor changes over time.

Objective 3

With DNR and interested conservation non-profit organizations, establish a Wild Lakes Program for the purpose of scientific study, ecological monitoring, and permanent lakes protection.

Action 1
With DNR, conduct an inventory of native lakes with no development, including a compilation of available data.

Action 2
With interested landowners and interested land trusts, establish a wild lakes registry to facilitate scientific study and permanent lake protections.

Objective 4

With WDNR, evaluate interest and feasibility of sponsoring a phased hydrologic study of the Holcombe Flowage to:

- **Design and implement a water quality monitoring program for the Holcombe Flowage.**

- **Model the estimated values, phosphorus concentrations, and residency time of streamflow contributed from the Chippewa River and Jump River subbasins, and**

- **Model the relationship between phosphorus concentrations, phosphorus loads, chlorophyll, and the frequency of algae blooms on the Jump River embayment.**

Objective 5

Refine the existing flowage management plans for each of the managed flowages in the Chippewa County Forest to identify the specific management goals for each based upon the physical site limitations, the intended outdoor recreational seasonable use, and any broader County Forest management objectives.

Objective 6

For each of the dams, lakes, and flowages managed by the county, conduct all scheduled inspections, associated engineering analysis, and required dam maintenance to meet State dam licensing and safety requirements.

8.5 Nonpoint Source Water Pollution Control

Goal 4

Develop and administer nonpoint sources of water pollution control programs to pursue state and local water quality objectives.

Objective 1

Administer the NR 151 agricultural nonpoint source pollution control performance standards on a county-wide basis, using authority of Wisconsin Stats. 59, 92, 281, and Administrative Rules NR 115, NR 243, NR 151, and ATCP 50.

Action 1

Assess interest on behalf of the major farm organizations to implement an educational outreach project to inform agricultural producers, rural landowners, and the general public about the performance standards and the county's program to administer them.

Action 2

Systematically schedule and conduct site specific farm walkovers and farm evaluations on priority farms to explain the agricultural performance standards and to prepare written reports that document the extent of current compliance.

Action 3

Administer a voluntary farm evaluation and certification program following the practices and management approach established in this plan.

Action 4

Implement a well-defined county regulatory framework to enforce the NR 151standards.

In doing so, evaluate and update the DNR/County MOU that clarifies the local/state regulatory framework, and the role of the county and state under NR 243 permitting and enforcement authorities.

Action 5

Actively participate in the Wisconsin WPDES Permitting Processes for livestock facilities administered by DNR under NR 243 or NR 151.

Note: When administering the State standards for tillage setback from streams, as established under NR 151, recognize and apply a 20' tillage setback under NR 151.03(2) as a minimum requirement in all physical settings.

Objective 2

Support efforts of crop and livestock producers, their agronomic service providers, and associated certified crop advisors, to develop, implement, and maintain nutrient management plans that meet the WI NRCS Technical Guide 590 standards.

To support nutrient management plan development by private sector consultants:

Action 1
Conduct farm walkovers to identify soil and water conservation needs and objectives.

Action 2
Gather information on current soil testing, cropping, and nutrient management procedures to create baseline information in selected field record keeping format, compatible with prescribed nutrient management software (SNAP Plus Map or state approved alternative).

To assure ongoing plan implementation and quality control:

Action 1
Encourage direct involvement by individual crop and livestock producers as annual plan updates are prepared by state certified crop advisors (CCA).

Action 2
Compile, review, and maintain a record of all annual plan updates and submittals. Track and monitor cropland field erosion rates, soil organic material, and cropland field and farm weighted average phosphorus index values.

Action 3
Arrange and participate in a state and local quality control program using a system of annual farm spot checks to assure compliance with Wisconsin Admin Rules, county ordinances, and county, state, or federal contracts.

Action 4
With UWEX, sponsor annual meeting of all certified crop advisors, consultants, custom manure and fertilizer applicators, and other agronomic service providers who provide nutrient and pest management services to agricultural producers.

Objective 3

Develop and implement a climate change flood control stream and wetland buffer initiative to mitigate the impacts of extreme weather events associated with climate change, with the objective of reducing runoff controlling flood peaks, and limit nonpoint source pollution.

Apply the initiative to augment and expand the scope and utility of the WI Conservation Reserve Enhancement Program (CREP) using the administrative framework of that program.

Action 1

Create a conceptual proposal for a pilot project using permanent conservation easements and advance a funding request through the County Capital Improvement Program (CIP) planning process/

Objective 4

With interested lake associations and WDNR, determine interest and feasibility of advancing a basin-wide management approach to manage water quality on the impounded flowages of the Chippewa River.

Objective 5

Support state and local efforts to pursue water quality objectives through the development and implementation of Total Maximum Daily Load (TMDL) limits in designated EPA 319 watersheds.

Action 1

Develop and seek approval of an EPA Nine Key Element watershed implementation plan for Little Lake Wissota.

- Systematically implement the watershed plan using the established administrative framework of the Lake Wissota Stewardship Project.
- Systematically evaluate the progress that is being made during and at the end of the prescribed project period (2018-2023).

Action 2

With the Lake Wissota Protection & Improvement Association, co-sponsor and participate in an EPA Nine Key Element watershed planning process to develop water resource management and pollution load reduction goals and water quality objectives for Moon Bay of Lake Wissota.

- Develop, enter, and if appropriate, periodically renew formal working agreements and service contracts with project sponsors and participating municipalities and funding agencies.

Action 3

With the Lake Wissota Protection & Improvement Association, administer the Lake Wissota Stewardship Project as the water resource management mechanism to account for, reduce, and monitor point and nonpoint source pollutant loads to Little Lake Wissota, and to meet any established TMD pollution load reduction goals and water quality management objectives for Moon Bay of Lake Wissota.

- Support efforts to actively solicit corporate and business co-sponsors using the existing public/private sector watershed business model.
- Actively pursue state and federal grants, private grant sources, and community contributions to meet planned program objectives.

Objective 6

Administer a joint storm water management program, that meets EPA and NR 216 storm water permit requirements, with affected municipalities in the Chippewa Falls Urban Area to meet requirements of WPDES Permit #WI-S050121-1.

Action 1

Administer components of the joint program following process and commitments defined in the Chippewa Falls Urban Area Storm Water Plan, the Chippewa County Stormwater and Construction Site Erosion Control Ordinance, and associated Chapter 66.03 agreement between Chippewa County, the Village of Lake Hallie, and the Towns of Eagle Point, Anson, and Lafayette.

Objective 7

Administer the NR 151 stormwater nonpoint pollution control performance standards in select circumstances using the authority of Wisconsin Stats. 92, 281, and Administrative Rules NR 103, NR 115, and NR 216.

Action 1

Review and revise the existing working agreement between Chippewa County and DNR as it applies to storm water plan review in unincorporated areas, subject to NR216 storm water permit requirements.

8.6 Planning and Environmental Regulation

Goal 5

Facilitate community-based land use planning, and develop and administer local ordinances that address local needs and augment the community's voluntary conservation efforts.

Objective 1

Track the location and rate of new development in unincorporated areas using approved subdivision plats, certified survey maps, and new well permits.

Action 1

Maintain current Chippewa County well permitting and Chippewa County groundwater inventory GIS database.

Action 2

Establish and implement a land division mapping and tracking procedure to monitor the location and rate of development in unincorporated areas of the county.

Objective 2

Provide opportunities for greater communication and cooperation in land use planning and land use regulation between the county, towns, cities, and villages.

Action 1

Sponsor periodic land use educational conferences to encourage communication and provide information of value to town and county officials.

Objective 3

Provide ongoing planning, administrative, and enforcement services to towns that participate in County Comprehensive Zoning, and to towns or other municipalities that have entered agreements or contracts for specified services.

Action 1

Provide information and educational support to towns regarding procedures to develop and implement town-based comprehensive plans and ordinances.

Action 2

Provide information, educational support, and consultation to towns that have adopted comprehensive plans to assist them to develop, administer, and enforce local ordinances.

Objective 4

With the WI Dept of Safety & Professional Services (DSPS) and the University of Wisconsin system, develop and implement a field-based research project to:

- Conduct a literature review of current regulatory authority and best available science.
- Document the pollutant loads to groundwater from conventional private onsite waste systems on sites susceptible to groundwater contamination and
- Evaluate the feasibility and the specific costs and benefits of requiring alternative POWTS technology in high density areas on site susceptible to groundwater pollution.

Objective 5

Systematically review and update selected county land use and environmental ordinances to be consistent with the County Comprehensive Plan and State Administrative Rule changes.

Action 1

Evaluate and revise the Chippewa County Animal Waste Management and Utilization Ordinance, within the authority of WI Stats., Chapter 92 and 59, to redefine the purpose and scope of regulation , incorporate state agricultural performance standards, and better define enforcement authority under State Administrative Rule NR 243, NR 151, and ATCP 50 (LCFM).

Action 2

Evaluate and revise the Chippewa County Non-Metallic Mining Reclamation Ordinance, within the authority of NR 135 to more directly reference and incorporate policy and procedures, and administrative guidance used in ordinance administration (LCFM).

Action 3

Initiate a comprehensive revision to the Chippewa County Comprehensive Zoning Ordinance, within the authority of WI Stats., Chapter 59, to define and apply new zoning districts as they apply to rural residential development and livestock facility siting (P&Z).

Action 4

Evaluate and revise the Chippewa County Storm Water Management and Construction Site Erosion Control Ordinance, within the authority of WI Stats. 59, and NR 216, to refine administrative requirements and processes to meet the requirements of the Chippewa Falls Urban Area Permit, #WI-S050121-1 (P&Z/LCFM).

9.0 PLAN IMPLEMENTATION

Chippewa County has prepared this plan to guide its operations, and to document local issues of environmental concern so that they might be considered by other municipalities, public agencies, and cooperating nonprofit conservation organizations as they allocate staff and funding.

Chippewa County will apply this plan to deliver programs and conduct scheduled activities that will be directed to meet local needs. The actual extent of program support and service levels allocated by the county, will be determined by the county through the annual budget process.

To optimize efficiency and the use of available resources, it is the intent of Chippewa County to develop and maintain an ongoing working relationship with all public agencies and nonprofit conservation organizations that provide conservation services in the county.

The public agencies that now implement land conservation related programs and regulations in Chippewa County are the Farm Service Agency (FSA), the Natural Resource Conservation Service (NRCS), the U.S. Fish and Wildlife Service (USFWS), the U.S. Army Corps of Engineers (USACE), the Wisconsin Dept. of Natural Resources (DNR), the Wisconsin Dept. of Commerce (DOC), the University of Wisconsin-Extension (UWEX), and the Wisconsin Dept. of Agriculture, Trade, and Consumer Protection (DATCP).

Private nonprofit conservation organizations that now implement important conservation related services and programs in Chippewa County include local lake organizations, the Landmark Conservancy, the Chippewa County Land Conservancy, local chapters of Pheasants Forever, the Turkey Federation, Trout Unlimited, Musky, Inc., and numerous local sportsman's organizations.

In Chippewa County, several standing committees have a shared responsibility to implement the contributing components of a coordinated conservation program. The standing committees of county government with well-defined responsibility in conservation, land use, agriculture, forestry, and public health include: the Chippewa County Land Conservation & Forest Management Committee, the Chippewa County Planning & Zoning Committee, the Agricultural Extension Committee, and the Chippewa County Public Health Committee.

The lead responsibility for advancing and implementing the program activities, outlined in this plan, will be that of the committee and department with the assigned program and ordinance authority to implement the activity.

To encourage structured communication between the county and state and federal agencies, the Department of Land Conservation & Forest Management will, on an annual basis, convene a work group and sponsor an interagency planning process, as outlined in the Chippewa County Operational Agreement. This planning process will be scheduled to coincide with the county's annual budget process.

County departments and cooperating agencies will be encouraged to use this process to evaluate progress toward plan implementation and to develop grant requests, budget proposals, and individual staffing plans to advance program objectives.

Chippewa County Land Conservation & Forest Management Committee and Department will use the county budget process to routinely review this plan and to develop a recommended annual LCFM budget proposal that will be used to pursue the program objectives and activities determined to be of highest priority.

This Land & Water Resource Management Plan will be formally reviewed and updated in accordance with to a five (5) year schedule, as established by the State, but may be amended if warranted before that time following procedures established in ATCP 50.12.

9.1 Land Conservation & Forest Management Committee Program Support and Service Levels

Efforts will be made to maintain core conservation program services, historically funded through the current county tax levy.

The county's commitment to extend services beyond that core levy commitment will be based upon its ability to secure funds through outside grant sources, including revenue generated through local service fees, agency and municipal service contracts, and public and corporate contributions.

Importantly, the priorities for plan implementation and associated service levels will be set based upon the extent of funding that can be secured to pursue program objectives and associated project initiatives.

At present, the demand for conservation related program services exceeds the county's capacity to deliver those services. Given current economic conditions and environmental concerns, it is anticipated that the level of state and federal funding support, administered through DATCP, DNR, and USDA grant programs, will remain constant, or may increase modestly, under the 2019-2020 and 2021-2022 State budget cycles.

To address anticipated shortfalls, additional sources of revenue will be actively sought by the LCFM to meet service demand. These revenue sources will include federal service contracts, direct service fees charged to those receiving conservation services and short-term project-based bridge grants that may be available through public agencies, private corporations, and nonprofit conservation organizations.

9.2 Annual Work Plan Development and Reporting

The program goals, objectives, and associated activities contained in this Land & Water Resource Management Plan will be prioritized and implemented through an annual work plan prepared by the Department.

The annual Department work plan will be reviewed annually by the LCFM Committee, in conjunction with the county budget process. This review will be conducted to evaluate progress toward meeting planned objectives, and to solicit feedback on scheduled activities and program priorities.

The resulting Department work plan and budget will be used by each LCFM staff member as a basis for developing individual staff work plans that will be implemented to pursue scheduled activities.

To assure full accountability, the Department and the LCFM Committee will present an annual department performance report to the County Board during Qtr. 2 of each year. This report will outline the work that was accomplished in the previous year and the activities planned in the current year.

To meet its core responsibilities under WI Stats., Chapter 92.10 it is the intent of the county to establish and facilitate structured agricultural agency reporting, both to and between, the Chippewa County LCFM Committee and Chippewa County Farm Service Committee.

At a minimum, the reports should be planned on either a quarterly or semi-annual basis, and should focus on natural resource conditions, resource management tracking and monitoring results; and the status of soil and water conservation and other related program activities that are being planned and implemented by the agencies.

9.3 Overview of Approach to Conduct Public Education and Community Outreach

It is the intent of the county to work with and use the structure of existing educational institutions and community organizations to deliver the community outreach and educational programs that will be applied to pursue natural resource management and program objectives, established in this plan.

9.31 Educational Service Delivery

Historically, community outreach efforts to support conservation programs in Chippewa County have been developed and administered independently by each agency to meet the program objectives of individual agencies.

The specific community outreach and educational programming support necessary to advance identified program objectives will be the responsibility of the county department or cooperating agency that intends to pursue the objective.

To advance this general management objective, the county will establish and support mechanisms that will serve to facilitate structured communication and coordination among agencies responsible for soil and water conservation, and natural resources management.

The county departments and cooperating agencies will be encouraged to work collectively through the county's annual work planning process to identify common educational needs and to work in collaboration with local educational service providers and community organization.

9.32 Agricultural Agency Education Coordinating Council

To assure that there is an ongoing institutional commitment toward public education and community outreach, it is the intent of Chippewa County to establish and support a standing Chippewa County Agricultural Agency Education Coordinating Council. This council that will serve to:

1. Facilitate structured communication among public agencies responsible for agricultural outreach, agricultural education, and agriculturally-based program administration.

2. Develop and oversee the implementation of an annual interagency soil and water conservation education work plan, to advance the goals and objectives of the Chippewa County Land & Water Resource Management Plan.

3. Apply the annual education work plan to identify and pursue opportunities to improve the public's understanding of agriculture and agricultural operations and associated linkages to food, land, and water.

4. Develop and oversee the implementation of other educational outreach activities of value to agriculture and the public in Chippewa County.

At a minimum, the group will be comprised by the UWEX agent and the agricultural agency directors representing UWEX, Land Conservation & Forest Management (LCFM), USDA Farm Service Agency (FSA), USDA Natural Resource Conservation Services (NRCS), Chippewa Valley Technical College (CVTC), and representatives from high school agricultural, vocational, and FFA programs.

The suggested format for the annual interagency soil and water conservation work plan is provided in Appendix 7.

9.33 Internet Web and Social Media Access

To assure that there is an ongoing institutional commitment to engage the public and to provide access to conservation and natural resource related information, it is the intent of the county to:

1. Update, upgrade, and actively maintain the LCFM web page to improve its utility and function. In doing so, the county will establish live links to the web pages of cooperating agencies and organizations, and live links to resource monitoring and remote sensing data.

2. Evaluate the costs and benefits of engaging in social media as a public service, including the appropriate platform and staff position(s) responsible for managing a social media presence.

9.34 Relationships with Educational Institutions

To establish synergies and to optimize the use of public resources, it is the intent of the county to cooperate with and support the efforts of existing educational institutions that have a shared objective toward conservation of natural resource related education. To do so, the county will seek to:

1. Expand working relationships and develop agreements with youth-based community organizations (Scouts, 4-H, FFA, others) to provide opportunities for applied environmental education and civic engagement.

2. Establish working relationships with public educational institutions (K-12) to identify existing educational programs that focus on the earth, biological, and agricultural sciences.

3. Maintain and expand working relationships with post-secondary education institutions (technical college, UW system,) to sponsor applied research, special environmental studies, and opportunities for student internship.

9.35 Community Outreach

To facilitate community outreach efforts, it is the intent of the county to:

1. Develop institutional framework and management structure to further engage citizen volunteers, civic organizations, and youth to pursue resource management program objectives:

2. Apply existing policy and program framework developed by the LCFM Forest & Trails Division (F&T Div.) to recruit, train, and manage volunteers.

    a. Conduct needs assessment to evaluate LCFM staff & conservation organization capacity to expand community engagement.

    b. Evaluate the "Rusk County Volunteer Challenge" model to determine concepts that may transfer.

3. Explore the feasibility of establishing a working arrangement with the county court system to provide opportunities for conservation-based community service projects for troubled youth or for low risk non-violent offenders.

9.4 Overview of Approach to Preserve Unique Parcels and Working Lands

The county will work cooperatively with individual landowners, local municipalities, state and federal agencies, and nonprofit conservation organizations to conserve and permanently protect the land base.

In doing so, the county will provide educational, technical, and administrative services that will assist the landowner to determine and select the site specific development and conservation options that meet the landowner's management objectives.

9.41 Cooperating Municipalities and Agencies

In administering its land conservation programs, the county will work cooperatively with the local municipalities that choose to plan and manage land use within their respective jurisdictions.

Similarly, the county will work cooperatively with the state and federal agencies that have historically administered a broad range of incentive-based programs to encourage conservation on private lands. These programs include nonpoint pollution control and farmland protection programs administered by the U.S. Dept. of Agriculture, the WI Dept. of Agriculture, Trade, and Consumer Protection, and the WI Dept. of Natural Resources, and programs intended to preserve natural ecology on private lands, administered through the U.S. Fish and Wildlife Service, the U.S. Dept. of Agriculture, and the WI Dept. of Natural Resources.

In conjunction with these public efforts, the county will work cooperatively with individual volunteers and private nonprofit conservation organizations to pursue land conservation objectives.

In Chippewa County, local sportsman's organizations have a long history of working directly with landowners to sponsor conservation and habitat improvement projects on private and publically held land.

In recent years, these efforts have been augmented by local land trusts and other nonprofit conservation organizations, including the Chippewa County Land Conservancy, Inc., the West Wisconsin Land Trust, and the Chippewa County Outdoor Resource Alliance, who offer options for permanent resource protection through use of conservation easements or fee title purchase.

9.42 Use of Chippewa County Stewardship Fund

Chippewa County has established the Chippewa County Stewardship Fund and will administer this program to support the voluntary land conservation efforts of individual landowners working in cooperation with the county, nonprofit conservation organizations, and public agencies.

The program provides the policy and administrative framework that enables the county to accept gifts of land or conservation easements from the public, and to receive and distribute matching grants to municipalities and nonprofit conservation organizations for permanent resource protection. The policy for administration of this program is titled: Chippewa County Stewardship Fund Policy and Procedures for Program Administration, (LCD 12/7/99), and is provided as Appendix 3.

Chippewa County will use this framework to support ongoing efforts to permanently preserve select working lands and areas of high environmental and public value.

9.5 Overview of Approach to Control Agricultural Nonpoint Source Pollution Using NR 151 Agricultural Nonpoint Performance Standards

In 2004, given the limits of state funding, the county changed its water resource management approach, from an effort to improve water quality in select watersheds, to an effort to maintain water quality throughout the county, by controlling runoff from urban development and from new and expanding agricultural operations. In circumstances where the state initiates a targeted watershed planning effort, the county will assist and cooperate in that effort within the limits of accelerated state funding.

As a basis for its efforts to control nonpoint pollution from agricultural sources, the county will implement a voluntary farm evaluation and certification program. Participation in the farm evaluation process will be a prerequisite and eligibility requirement for the allocation of technical services or state cost-share funds administered by the county.

The county will seek to work cooperatively with the USDA Farm Service Agency and Natural Resource Conservation Service to develop and optimize voluntary opportunities which will enable producers to use USDA conservation programs to meet state performance standards.

The process that will be used to administer the standards is that outlined in state planning guidance titled: Implementation Strategy for NR151, Agricultural Performance Standards and Prohibitions, (April 2002, Appendix E, Land and Water Resource Management Guidelines).

The specific roles and responsibilities of Chippewa County and state agencies in implementing these standards have been outlined in a Memorandum of Understanding (MOU) between the county and the Wisconsin Department of Natural Resources. This agreement will be used to assure compliance with the agricultural nonpoint performance standards. A copy of the MOU is provided as Appendix 4.

To support these local program efforts, a detailed information and education program has been developed to explain the agricultural nonpoint pollution control standards and the local delivery system that will be used to administer the standards. This plan defines target audiences, informational messages and delivery mechanisms, and outlines state agency and county responsibilities to implement the program.

To date, the state and local resources have not been available to systematically deliver that outreach program. To address this shortfall, the county will attempt to work on a regional basis through local farm organizations and cooperating agency networks to deliver core educational messages.

Under this program approach, onsite evaluations will be systematically scheduled and conducted to introduce and explain the agricultural nonpoint performance standards.

In conducting evaluations, the county will pursue a comprehensive approach toward parcel evaluation. In conducting the evaluation, the county will determine which of the state standards apply to parcels being evaluated and determine the extent of compliance for each of the applicable standards.

Upon completion of the evaluation, the county will review the results with the landowner and provide the opportunity for review, comment, and appeal. In circumstances where full compliance has not yet been achieved, the county will work with the landowner to secure technical assistance and cost-share funding available to pursue compliance.

The voluntary component will be augmented by a regulatory option. Farms subject to direct regulation will be limited to:

1. Operations which require permits under the Chippewa County Animal Waste Storage Ordinance to install or alter manure storage facilities.

2. Livestock operations which are new or expanding, and which require zoning or conditional use permits for livestock expansion through the Chippewa County Comprehensive Zoning Ordinance.

3. Operations which are subject to state jurisdiction under Wisconsin Stats. 281 and Wisconsin Administrative Rules NR 243 or NR 151 that are found to be out of compliance with the NR 151 agricultural standards, as determined by a site evaluation conducted as part of routine permit monitoring or in response to a public complaint.

   In responding to public complaints, priority will be assigned to livestock facilities and cropping operations located in water quality management areas and shoreland corridors.

Copies of current ordinances are on file as public record with the Chippewa County Clerk.

9.51 Fiscal Policy

To encourage participation in the voluntary farm evaluation and certification program, and to optimize the use of available cost-share funds, the county will attempt to dovetail state funds with federal funds to increase the public cost-share rate for operations that seek to meet the state's agricultural performance standards and prohibitions.

In circumstances where cost-share funding is required to support non-voluntary enforcement action, the county will attempt to secure state grant funding available through state programs.

9.52 Priority for Servicing Farms

Public requests for administrative, technical, and regulatory services, administered through the Land Conservation & Forest Management Committee, currently exceed the capability of the county to provide these services.

It is anticipated that the cost of fully servicing state conservation programs, administered under ATCP 50, NR 151, and NR 216, will exceed the state staffing grant allocations offered under ATCP 50.30(3).

In establishing its service priorities, the county will require that landowners that request services or funds allocated by the Land Conservation & Forest Management Committee to provide information about past and ongoing field and crop management practices, participate in a voluntary farm evaluation process (Section 4.54), and commit to meet the Chippewa County Soil and Water Conservation Standards. These standards are provided as Appendix 5.

In allocating its resources, the county will recognize legal requirements imposed by ATCP 50.16, and attempt to meet those requirements within the limits of state staffing grant funding.
In administering the agricultural performance standards and prohibitions, the county will allocate its staff and financial resources to farm operations according to the following priorities:

Priority 1

•New and expanding livestock operations, subject to regulation under the Wisconsin WPDES permit system or the Chippewa County Manure Storage and Livestock Facility Ordinance.

Note: Chippewa County will provide cost share funding to new and expanding operations and only in circumstances where it is required under NR 151.

•Existing agricultural operations subject to public complaint or state enforcement action under NR 243 or NR 151.

Priority 2

•New and expanding livestock operations, and existing agricultural operations that participate in the Chippewa County Voluntary Farm Evaluation and Certification Program.
•New and expanding cropping operation that use agricultural irrigation.

Priority 3

•Existing operations that participate in the Wisconsin Conservation Reserve Enhancement Program (CREP).

9.53 Priority for Public Cost-Share Allocations

The agricultural performance standards and prohibitions, established in NR 151, have been adopted to control nonpoint pollution. Public funds available from state and federal sources are expected to be limited.

To most cost effectively pursue water resource management objectives, the county will pursue a comprehensive full farm, all standards approach toward farm evaluations. In administering this approach, the county will assign cost-share funding priority to those farms agreeing to pursue full compliance.

In circumstances where public cost-share funds are limited, the agricultural standards and prohibitions have been prioritized so that they may be implemented through a phased approach. These priorities have been established based upon the source of nonpoint pollution and the environmental cost effectiveness of implementing each performance standard.

The priority for implementing the standards, when conducted through other than a fully funded whole farm, all standards approach, is outlined in Table 5. It is the intent of the county that the local system of priorities be considered by state and federal agencies as local strategies are developed and decisions are made regarding public cost-share allocations.

Table 5

Local Priorities for Implementing Agricultural Nonpoint Standards
In Chippewa County
Based Upon Need, Type, and Location of Practice

RELATIVE PRIORITY	AGRICULTURAL STANDARD OR PROHIBITION
High Level	
	□NR151.08 - Manure Management Prohibitions -No unlimited livestock access to streams. -No overflow of manure storage facilities. -No unconfined manure pile in Water Quality Management Areas (WQMA) -No direct runoff from feedlot or stored manure. □NR151.05 - Manure Storage Facilities -New facilities to meet 313 siting and design standards. -New facilities operators to meet 590 nutrient management standards. -Closure of abandoned structures. □NR151.06 - Clean Water Diversions in Water Quality Management Areas -Runoff to be diverted from feedlots.
Medium Level	
	□NR151.05 - Manure Storage Facilities -Repair or replacement of failing and leaking facilities. □NR151.02 - Sheet, Rill and Wind Erosion -Control within water quality management areas. □NR151.07 - Nutrient Management -Operators using agricultural irrigation.
Low Level	
	□NR151.02 - Sheet, Rill and Wind Erosion -Control outside of water quality management areas. □NR151.07 - Nutrient Management -Operators not associated with storage, or WPDES permits, or irrigation

In circumstances where watershed studies have been completed, this priority schedule will be considered and may be amended for the purpose of developing a watershed-based implementation strategy that would meet the management needs of the water resource and of the water pollution control objectives that have been established for the watershed.

9.6 Overview of Approach to Control Urban Nonpoint Source Pollution Using NR 216 and NR 151 Urban Runoff Performance Standards

To control nonpoint pollution from nonagricultural sources, the county will work cooperatively with local municipalities and state agencies to implement performance standards for storm water runoff, as established in NR 151.10.

The extent of the county's commitment and service level will be determined by its legal obligation to meet EPA urban storm water permit requirements, as established in WPDES Permit #S050121-1, as it applies to the City of Chippewa Falls urban storm water area and its ongoing capacity to allocate staff support and technical services outside of the Chippewa Falls urban area.

9.61 Storm Water Services Within the Chippewa Falls Urban Area

As a basis for its efforts, the county will work with affected municipalities in the Chippewa Falls urban area to develop and implement a storm water management program under the EPA MS4/DNR WPDES permitting process. To accomplish this, the county has worked with the affected municipalities to develop the Chippewa Falls Urban Area Storm Water Management Plan, (2007).

9.62 Storm Water Services Outside of the Chippewa Falls Urban Area.

To augment this core effort, the county will work cooperatively with DNR to provide storm water plan review and post-construction plan verification of all developments subject to State NR 216 storm water permit requirements, that are regulated by the county under the Chippewa Co. Manure and Livestock Facility Ordinance and the Chippewa Co. Non-Metallic Mining Reclamation Ordinance. These storm water management services will be provided within the limits of available funding and staff resources in accordance with a storm water services MOU between Chippewa County and DNR, dated 3/6/02. This MOU is provided as Appendix 6.

To further augment this effort, the Chippewa County Highway Department and DNR will work cooperatively with the towns and municipalities to meet standards for roads and transportation related facilities, as established in NR 151.20.

> *Explanatory Note: Under subchapter III of NR 216, Wisconsin Adm. Code, a notice of intent shall be filed with the DNR by any landowner who disturbs one or more acres of land. This disturbance can create a point source discharge of storm water from the construction site to waters of the state and is, therefore, regulated by DNR Agriculture is exempt from this requirement for activities such as planting, growing, cultivating and harvesting crops for human or livestock consumption, and pasturing or yarding of livestock as well as sod farms and tree nurseries. Agriculture is not exempt from the requirement to submit a notice of intent for one of more acres of land disturbance for the construction of structures such as barns, manure storage facilities, or barnyard runoff control systems. (See s. NR 216.442(2), Wisconsin Adm. Code). Furthermore, construction of an agricultural building or facility must follow an erosion and sediment control plan consistent with s. NR 216.46, Wisconsin Adm. Code, and meet the performance standards of s. NR 151.11, Wisconsin Adm. Code. An agricultural building or facility is not required to meet the post-construction performance standards of NR 151.12, Wisconsin Admin. Code.*

9.7 Application of Nonpoint Performance Standards and Best Management Practices to Pursue Land and Water Resource Objectives

Wisconsin Stats., Chapter 92.07 authorizes the Land Conservation & Forest Management Committee to develop and adopt standards and specifications for management practices to control erosion, sedimentation, and nonpoint source water pollution.

Wisconsin Stats., Chapter 281 requires the Wisconsin Department of Natural Resources (DNR) to develop performance standards to control nonpoint source water pollution from agricultural and nonagricultural sources. These performance standards have now been established in Administrative Rule NR 151. Wisconsin Stats. 92.10(6)(4) requires that this plan identify the applicable standards that will be used to control nonpoint source pollution.

9.71 State and County Standards

In Chippewa County, the performance standards to be applied to control agricultural and non-agricultural sources of nonpoint pollution will be those established in WI Administrative Rules NR151.

With the adoption of the 2004 Chippewa County Land and Water Resource Management Plan, the county clarified its intent to:

1. Retain the previously adopted county non-metallic mining siting reclamation standards.

2. Retain the previously adopted Chippewa County storm water standards for use in select applications where storm water quantity and flood control are identified as management issues of local concern.

   Explanatory Note 1: It is the intent of the county to apply state storm water quality standards, established in NR151 and NR216, as a requirement in all circumstances where these standards apply.

   In conducting storm water plan reviews, the county will recognize and administer other, more restrictive water quantity-based standards, but only in circumstances where these local standards have been adopted or are administered by the county or a municipality through local ordinance.

   The existing county storm water standards will be retained as a reference for use in local zoning and subdivision applications, at the discretion of local municipalities.

In circumstances where it is deemed necessary to develop or apply more restrictive performance standards to control nonpoint pollution, the county will follow administrative processes for State review and approval, as established in WI Stats., Chapter 92 and 281.

In the event that the legislature changes the state standards or alters the scope of their application to state administrative programs, the county will apply the new standards, as established by law.

9.72 Best Management Practices

The best management practices, which will be used to control nonpoint source pollution from agriculture, forestry, and urban sources, will be those established in the following guides:

- •Wisconsin Adaptation of the USDA, NRCS Technical Guide.
- •The Wisconsin Handbook of Forestry Best Management Practices.
- •Wisconsin Construction Site Erosion Handbook.
- •Wisconsin Standards Oversight Council (S.O.C.) Standards.
- •Others as published and updates.

In circumstances where public cost-share is provided, producers are obligated, under State and Federal administrative rules, to install conservation practices. The conservation practices are established in ATCP 50.61 - 50.98, in accordance with prescribed technical standards. Examples of these practices include structural measures such as surface water diversions, barnyards, sediment basins, manure storage structures, and non-structural practices such as field layout, crop rotations, crop residue management, and stream buffers.

As an alternative to cost-shared practices, Chippewa County will actively encourage agricultural producers to meet performance standards through the use of innovative management techniques, which may not be contained in the State's technical standards or best management practice handbooks. These innovative techniques may include structural or non-structural measures which enable the landowner to demonstrate that a performance standard has been achieved and can be maintained on a continuous and ongoing basis.

10.0 PERFORMANCE MEASURES, TRACKING AND PUBLIC ACCOUNTABILITY

Progress toward achieving the natural resource management, and program goals and objectives established in Sec. 5.3 and 5.4 will be measured through direct environmental monitoring, environmental modeling, and tracking.

10.1 Land Based Monitoring, Modeling, & Tracking

A series of land-based resource inventories will be systematically maintained by the county to monitor ongoing land use and existing land cover. These inventories will be reviewed annually as part of the interagency planning process to track land use trends. The inventories that will be used in this monitoring, include current satellite imagery and GIS map compilations.

10.2 Nonpoint Source Pollution Control and Mine Reclamation Tracking

Chippewa County has designed and implemented a land-based tracking system to systematically record and monitor the location of farm operations and tax parcels where farm evaluations have been conducted and where state (NR 151) nonpoint pollution control standards have been met. This system is managed as a data base and associated map layer on the Chippewa County Geographic Information System (GIS).

The farm operations tracked through this system provide annual cropping and nutrient management information. This information is, in turn, applied to model current erosion rates and to monitor soil phosphorus concentrations and potential nutrient and sediment loads.

For the purposes of evaluating progress toward meeting resource management and program objectives for nonpoint source water pollution control on agricultural lands, the following measures and tracking method will, at a minimum, be applied:

a. The number, acres, and mapped location of farm evaluations and NR 151 compliance reports, completed per year to explain and implement state agricultural performance standards established in NR 151.09 and NR 151.095.

b. The number, acres, and mapped locations of the farms evaluated, that fully meet, and those that ~~or~~ partially meet specific agricultural~~ly~~ performance standards for cropland, including field soil erosion, tillage setbacks, phosphorus index (PI), and the 590 nutrient management standard.

c. The number, acres, and mapped locations of the farms evaluated, that fully meet, and those that ~~or~~ partially meet specific agricultural~~ly~~ performance standards for livestock facilities.

d. The number, acres, and mapped locations of farms that have been evaluated that self-certify annually that they are operating in compliance with the standards.

e. The number, acres, and mapped locations of conservation lands that have been removed from production that, are managed under, State or Federal conservation contracts or conservation easements, including lands enrolled in the USDA

Conservation Reserve Program (CRP) and the Wisconsin Conservation Reserve Enhancement Program (CREP).

For the purpose of evaluation, progress toward meeting program objectives of non-metallic mine reclamation at permitted mine sites, the following performance measures will, at a minimum, be applied:

a. The number, acres, and mapped location of permitted non-metallic mines, including the acres at each mine site that are disturbed, undergoing reclamation and certified as meeting reclamation standards.

10.3 Water Based Monitoring, Modeling, & Tracking

Surface Water

Surface water quality monitoring will be conducted by DNR following a monitoring plan that will be applied to meet state and local priorities. The monitoring approach will address a variety of natural resource information needs, as required to support ongoing management decisions.

Statewide baseline monitoring using standardized sampling protocols will be used to identify broad trends affecting aquatic resources.

Data from these sites along with others selected statewide will be used to develop expectations for different aquatic stream communities. Data collected from these sites include: fishery and habitat surveys, continuous temperature monitoring, one time growing season water chemistry sampling and macroinvertebrate sampling.

Where environmental problems are identified locally, more intensive sampling can occur under targeted evaluation monitoring to determine the cause and extent of the problem. This site-specific monitoring of targeted areas can be used to develop management plans for corrective action.

Groundwater

Progress toward meeting defined resource management objectives for groundwater quality will, at a minimum, include:

a. The number and mapped location of wells sampled per year ($NO_{3\text{-}N}$ results) contributing to the Groundwater Quality Index.

b. The number, mapped location, and percent of wells sampled with $NO_{3\text{-}N}$ concentrations that increase or decrease from the prior year.

c. The number, mapped location, and percent of wells sampled with NO_3-N concentration that fall into standardized reporting ranges.

10.4 Administrative Tracking

Progress toward achieving the program goals and objectives established in Sec. 5.4 will be measured through administrative tracking.

Under this approach, the plan will be reviewed on an annual basis as a part of the county's work planning and budgeting process. Scheduled activities will be recognized as benchmarks and will be applied to monitor progress toward long-term program goals.

To measure performance and account for accomplishments, an annual activities report will be prepared to document the status and outcome of the activities planned under Sec. 8.0.

For the purpose of evaluating the implementation of planned activities initiated to pursue established program objectives, the following measures and tracking method will, at a minimum, be applied:

a. An annual plan review will be conducted to assess the status of each activity listed or the activity schedule.

b. The results of the review will be documented and provided to the LCFM Committee and funding agencies as part of annual reporting.

11.0 YEAR 2019-2023 ACTIVITY SCHEDULE

This plan will be systematically implemented using an annual work plan to pursue the program objectives and actions established in Sec. 5.4.

Table 6 is a five (5) year schedule of activities, as planned to advance program objectives during the years 2019-2023. Those activities identified as a priority for consideration in the development of annual work plans and budgets during that period are highlighted. Table 7 lists these priority activities and the performance-based benchmarks that will be applied to measure progress toward plan and program implementation.

Table 8 is a program budget for the same time period. The budget shows the amount of projected local property and sales tax that has historically been allocated by the county by major program area, and the amount of state grant funding that is now anticipated based upon historic state budget allocations to implement the planned program activities.

This activity schedule and budget is subject to change and will be systematically evaluated and updated using an annual interagency working planning process, conducted in conjunction with the county's annual budget process.