2016

Ashland County Comprehensive Plan

Volume 3: Ashland County Farmland Preservation Plan

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ASHLAND COUNTY

UW Extension
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ASHLAND COUNTY
LAND & WATER
CONSERVATION
DEPARTMENT

VOLUME 3
FARMLAND PRESERVATION PLAN
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Chapter 1 - Introduction

BACKGROUND

Farmland around the nation is being lost at an alarming rate and once it is gone it is lost forever. Much of the best agricultural areas in the nation are located in the upper Midwest, stretching from Ohio to the Dakotas. While Wisconsin does not contain as much prime farmland areas as some of the other upper Midwest states, there are still many areas where agriculture is important, and many areas where nonagricultural development is squeezing out agriculture. Agriculture has a profound affect on the economy of Wisconsin – the industry was valued at $59 billion in 2012 and provided 354,000 jobs, or about 10% of the state's total. Farmland preservation planning is crucial to preserve the agricultural land remaining in Wisconsin, because of the economic importance of agriculture in the State and the potential for loss of our agricultural land base. Agricultural lands in Ashland County have not yet experienced the intense pressures of urban sprawl and land use conversion that have occurred in other parts of the state. Industries reliant on natural resources and open space such as agriculture, forestry, recreation, and tourism provide a strong foundation to the economy of the county. Despite its importance in the "northwoods", agriculture faces many challenges: a short growing season, heavy clay soils in parts of the county, extensive wetlands, small fields dissected by waterways, long distances to services and markets, and increased precipitation and runoff due to climate change.

OVERVIEW OF WORKING LANDS INITIATIVE AND FARMLAND PRESERVATION PLANNING

Wisconsin's Working Lands Initiative (WLI) was adopted in 2009 as part of the 2009-2011 biennial budget. The law is specified in Chapter 91 of Wisconsin State Statutes. The main components include:

1. Modernization of the state's farmland preservation plans;
2. Establishment of agricultural enterprise areas;
3. Increased tax credit opportunities and certainty of credit value; and
4. Development of the Agricultural Conservation Easement Program.

A Farmland Preservation Plan (FPP) provides a vision and guidelines for future growth, development, and land preservation in the County. The plan functions as the primary policy document setting forth directions for how the County intends to preserve agricultural production capacity, farmland, soil and water resources, and rural character. The plan also reviews the economic and cultural importance of agriculture in the County. Primary components of a FPP are detailed maps that identify farmland areas for preservation based on locally established criteria.

OVERVIEW OF CURRENT PLAN

The existing Ashland County Farmland Preservation Plan (FPP) was adopted in 1982 with the intent to delineate those lands most suited for agriculture, to determine the need for and benefit of preserving agricultural lands, and to encourage agriculture as a major part of Ashland County's economy and lifestyle. The plan identifies policies related to four goals: Preservation of Agricultural Lands; Urban Growth, Environmental and Cultural Resources, and Public Facilities. The plan also provided data on the general characteristics of the county including physiography, demography, agriculture, and forestry and outlined recommended mapping criteria and districts. Implementation of the plan recommendations and development of Farmland Preservation Agreements by farmers is totally voluntary.

PLAN MAINTENANCE AND AMENDMENT

The Farmland Preservation Plan is an element of the County's Comprehensive Plan. On December 31, 2016 (after extension), the 1982 Farmland Preservation Plan is set to expire. The 2016 farmland preservation plan is intended to fulfill the statutory requirements for both the Farmland Preservation Plan (Chapter 91, Subchapter II, WI Stats.) and the agricultural element of the Comprehensive Plan (§66.1001(2), WI. Stats.).

Wisconsin Statute §66.1001 requires that an adopted plan be reviewed and updated at least once every ten years. This is not a static plan, but one that may change over time. Changing land uses, policy changes, regulatory changes, or shifting economics are some reasons to review and update the plan.

ASHLAND COUNTY

Ashland County is located in far northern Wisconsin and is bordered on the north by Lake Superior, Bayfield County to the west, Iron County to the east, and Price and Sawyer Counties to the south. The county is approximately 2,294 square miles (1,468,160 acres) in size, with more than half in the form of open water (Lake Superior, inland lakes, rivers, and streams). Seventeen of the Apostle Islands are found within the county, but 16 of the 17 islands are managed as part of the National Park Service's Apostle Islands National Lakeshore. There are 13 townships in the county: (Agenda, Ashland, Chippewa, Gingles, Gordon, Jacobs, LaPointe, Marengo, Morse, Peeksville, Sanborn, Shanagolden, White River), 2 cities (Ashland, Mellen), the Village of Butternut, and the Bad River Tribal Reservation (Figure 3-1).

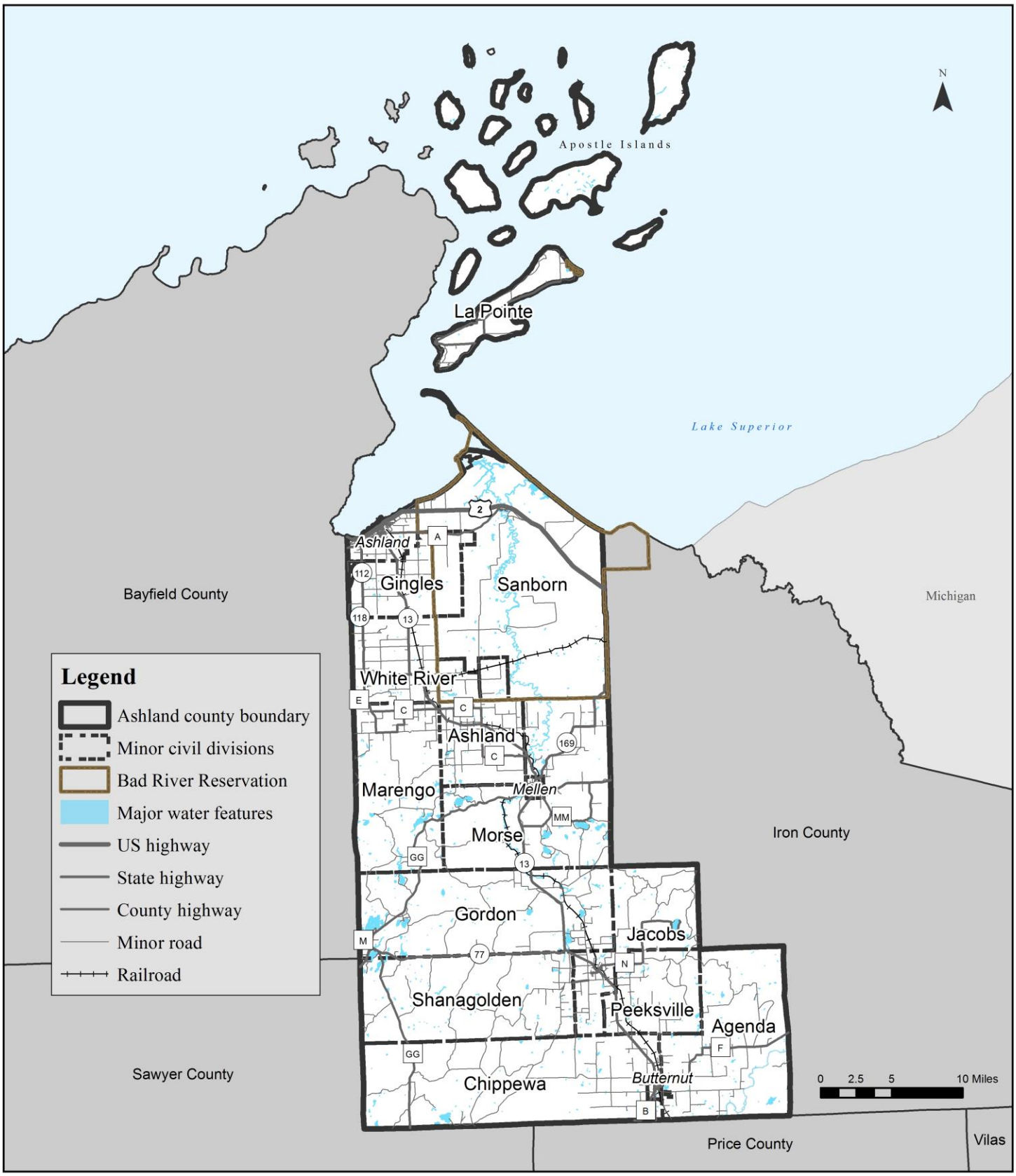
DATA CONSISTENCY

Many different sources of information from many different years were used to update the 2016 Ashland County Comprehensive Plan and the Farmland Preservation Plan. Data is presented throughout both documents, but are found primarily within the Background Document (Volume 1) of the Comprehensive Plan and the Existing Conditions (Chapter 3) of the Farmland Preservation Plan. Because both plans were updated concurrently, efforts were made to resolve inconsistencies and reference data sources whenever possible. None the less, the reader will find differences between the plans and even within each document in some statistics (acres, miles, numbers, etc.) that could not be resolved. The exact statistics are not as important as the general depiction of the county in most cases. However, if inconsistencies between the Farmland Preservation Plan and the County Comprehensive Plan exist (maps and text), the Farmland Preservation Plan shall supersede and inconsistencies shall be resolved in favor of the Farmland Preservation Plan.

MAPS AND SPATIAL DATA

Farmland Preservation Area Maps and other maps created in a Geographic Information System (GIS) by the Ashland County Land & Water Conservation Department were projected in the TM, NAD1983 UTM Zone 15N coordinate reference system. Map scales vary by map based on limitations and compromises due to page size of printed documents and the need to discern detail. The Farmland Preservation Area map is presented on a county-wide scale (Figure 3-17) and also as a series of 1:24,000 maps for each minor civil division within the county (Appendix 3-H).

Figure 3-1: Ashland County including the Apostle Islands and minor civil divisions



Funded in part by:

This map is neither a legally recorded map nor a survey and is not intended to be used as one. This drawing is a compilation of records, information and data used for reference purposes only. Ashland County is not responsible for any inaccuracies herein contained.

Created by:
Brittany Goudos-Weisbecker
Ashland Co. Land & Water Conservation Department
09/22/2016

The planning process considers existing and future agricultural conditions, the local economy, existing and future growth trends, and current and future prospective participation in the program. The plan tries to coordinate all of this with other agencies who work with landowners, as well as offer the public the opportunity to have input into the planning process.

PLANNING REQUIREMENTS

The Farmland Preservation Plan must address certain elements as specified in Chapter 91, Wisconsin Statutes. There are several required plan elements to develop for the farmland preservation plan including population growth, economic growth, housing, transportation, utilities, communications, business development, community facilities and services, energy, waste management, municipal expansion, and environmental preservation.

The county FPP provides additional agricultural information about land use and specialties, resource availability, infrastructure, trends, goals, and actions. The county FPP clearly identifies areas for preservation of agriculture and agriculture-related uses - including undeveloped natural resource and open space areas. The county must include the FPP in its comprehensive plan and ensure that the FPP is consistent with the comprehensive plan.

PLANNING PROCESS

The Ashland County Farmland Preservation Plan was developed during calendar years 2015-2016 in conjunction with an update of the county Comprehensive Plan. The Ashland County Board established an "ad-hoc committee", the Comprehensive and Farmland Preservation Planning Committee, to guide the development and approval of the two plans. As such, multiple meetings were held during the development of this plan. The meetings were advertised ahead of time and held in an easily accessible public place in accordance with the Americans with Disabilities Act. A Class I Public Hearing was held as part of the formal plan adoption process and published as required by law. Holding numerous public meetings provided the opportunity for participation of a wide variety of farmers, rural landowners, local officials, and interested citizens.

Residents, non-resident landowners, business owners, and other stakeholders in Ashland County had the opportunity to participate in the planning process by attending meetings of the Comprehensive and Farmland Preservation Planning Committee and other department committees (Land Conservation, Zoning, Agriculture & Extension, Health & Human Services) where planning elements were discussed, issues and concerns were raised, and needs and opportunities identified. The committees invited participation from resource protection agencies, townships and municipalities, tribal government, concerned citizens, and local farmers. They discussed farming issues and identified areas where farmland should be preserved over the next 15 years. Input was taken from all groups to identify issues, opportunities, and actions needed to implement the updates to the county Farmland Preservation Plan and the county Comprehensive Plan.

AGRICULTURAL SURVEY

Additional public involvement was encouraged through completion of the *Ashland County Agricultural Land Use & Preservation Survey 2016.* Ashland County conducted a survey of landowners as part of the farmland preservation planning process. The survey was directly mailed to over 300 stakeholders, advertised in the local newspaper, distributed by email, and made available (both electronically and as a hardcopy download) on several websites. The survey was used to substantiate issues, concerns, and opportunities related to agriculture. The survey was directly mailed to all known agricultural producers and to quite a few rural landowners who have shown an interest in conservation programs in the past.

Additional opportunities to complete the survey were provided through the internet, either as a survey that could be downloaded and printed or as an "on-line" survey. Fifty responses were received from people who were directly mailed to and another 13 responses came by other means. Not all respondents completed the entire survey. The survey responses provided insight that was used to affirm and refine agricultural goals and objectives, suggest action items to accomplish the objectives and to identify issues, concerns, and opportunities that may have changed since 1982. The complete results of the agriculture survey can be found as APPENDIX III-A

A chronological history of the plan update activities is as follows:

- January – October, 2014: The Ashland County Land & Water Conservation Department (LWCD) and Committee (LCC) discussed the need for and requirements of a revised Farmland Preservation Plan during regularly scheduled committee meetings.
- November 3, 2014: The LWCD applies for a Coastal Resources and Community Planning Grant from the Wisconsin Coastal Management Program (WCMP) to help fund updates to the Comprehensive and Farmland Preservation Plans, ensure consistency between the plans, evaluate the need and desire for agricultural ordinances, and display watershed protection and restoration priorities through the use of computer models.
- November 20, 2014: The LWCD applies for a County Farmland Preservation Planning Grant and requested a one-year extension on the expiration of the existing FP plan to coincide with the update of the county Comprehensive Plan.
- December 17, 2014: The Department of Agriculture, Trade, and Consumer Protection (DATCP) approves the request to extend the certification of the FPP for one year to December 31, 2016.
- December 30, 2014: The LWCD receives a grant from DATCP to prepare a revised FPP during the time period January 1 2014 through December 31, 2016.
- April 14, 2015: The LWCD receives the grant from the WCMP for the period July 1, 2015 through June 30, 2016.
- May 18, 2015: Ad Hoc County Comprehensive and Farmland Preservation Planning Committee established by Board Chair Pete Russo
- October 1, 2015: Introductory meeting with Town Representatives held at the Town of Morse Town Hall.
- October 13, 2015: A tour of farmland conservation practices and an introduction to Farmland Preservation Planning was provided to the full County Board at their annual retreat
- February 10, 2016: Agricultural Land Use Survey directly mailed to 310 households, provided download through several websites, and offered as an online survey.
- March 10, 2016: Dairy Producer's Meeting at Town of Marengo Town Hall
- June 29, 2016: Special meeting of the Comprehensive and Farmland Preservation Planning Committee held at the Town of Morse Town Hall
- June 30, 2016: WCMP grant extended to December 31, 2016
- Land Conservation Committee - Comprehensive and Farmland Preservation Planning was an agenda item at all the meetings: 10/17/14, 12/12/14, 1/30/15, 2/17/15, 4/10/15, 5/15/15, 6/17/15, 8/7/15, 9/17/15, 12/11/15, 1/22/16, 3/11/16, 4/22/16, 7/1/16, 7/29/16, 9/9/16, and 11/4/16.
- Agriculture and Extension Committee - Comprehensive and Farmland Preservation Planning was an agenda item at all the meetings: 1/15/15, 3/2/15, 4/9/15, 7/7/15, 8/5/15, 9/10/15, 10/20/15, 11/19/15, 12/22/15, 1/14/16, 2/24/16, 3/31/16, 4/27/16, 5/24/16, 6/30/16, 7/26/16, 8/15/16, and 9/28/16

- Zoning and Land Committee – The topic of agricultural/farmland preservation zoning was an agenda item at the following meetings: 12/7/15, 1/7/16.
- County Comprehensive and Farmland Preservation Planning Committee Meetings: 7/30/15, 8/20/15, 9/9/15, 9/23/15, 12/4/15, 12/17/15, 1/15/16, 2/26/16, 3/24/16, 4/28/16, 5/23/16, 6/29/16, 7/27/16, 8/12/16, and 9/14/16.
- August 12, 2016: Decision to hold Public Hearing for Comprehensive and Farmland Preservation Plans on September 20, 2016.
- August 20, 2016: Class I Notice published in the Ashland Daily Press for the September 20, 2016 Public Hearing. Notice of hearing sent to each town, DATCP, and draft text and maps were available for public review online and at County Clerk's office.
- September 9, 2016: Draft Farmland Preservation Plan reviewed by Land Conservation Committee.
- September 20, 2016: Public Hearing held on updates and revisions to the County Comprehensive Plan and Farmland Preservation Plan.
- September30, 2016: Application for Farmland Preservation Plan Certification and supporting documentation sent to DATCP for review.
- October 5, 2016: DATCP notification that application for certification is administratively complete.
- October 27, 2016: DATCP comments on draft plan received.
- November, 2016 (projected): Plan modifications and corrections made based on DATCP review and comments.
- December 2016 (projected): DATCP certifies approval of Farmland Preservation Plan
- December 2016 or January 2017 (projected): Ashland County Board of Supervisors adopts the Farmland Preservation Plan and Comprehensive Plan through County Board Resolution

POPULATION, HOUSING, AND MUNICIPAL GROWTH

Demographics

Between 1990 and 2010, Ashland County experienced an overall population decline of about 150 people. Nine municipalities showed population declines while seven municipalities had increases. Most notable are the decrease of 479 people within the City of Ashland and the increase of 286 and 333 people in the Town of Gingles and Town of Sanborn, respectively. These two towns are in close proximity to the City of Ashland and the data indicates that there is a movement out from the city and in to the unincorporated rural areas adjacent to the city. This trend may impact the growth of traditional farming as larger blocks of suitable agricultural land are split up and converted to single family "rural residential" use.

Housing

Ashland County saw a 8% increase in the number of housing units from 2000 to 2010. This is a large growth relative to the 0.92 percent population decrease during the same time period. Single family dwellings comprise over 70% of the housing types, with mobile homes constituting the second most common dwelling type at 11.5%. Between 1990 and 2010, owner-occupied housing units dropped slightly, while vacant units and those used seasonally or occasionally increased by 5-6%. All municipalities displayed growth in the number of housing units during this period except the City of Mellen which showed a decline of 17 units. While the population in the county declined overall, the number of housing units increased. These trends may impact the growth of traditional farming as larger blocks of suitable agricultural land are split up and converted to single family "rural residential" use. Further, because much of the growth of housing units is attributable to the increase in seasonal or occasional use, understanding or tolerance of farming operations may be reduced.

Municipal Expansion

The three incorporated municipalities within Ashland County are the City of Ashland, the City of Mellen, and the Village of Butternut. The population of the county (like most of the state and nation) is ageing, so the need for assisted living and nursing homes will continue to grow. Housing facilities for the elderly tend to be close to cities and towns providing other services. The tendency to build facilities for the elderly close to population centers may ease the pressure to build on suitable farmland.

AGRICULTURAL RESOURCES AND LAND USES

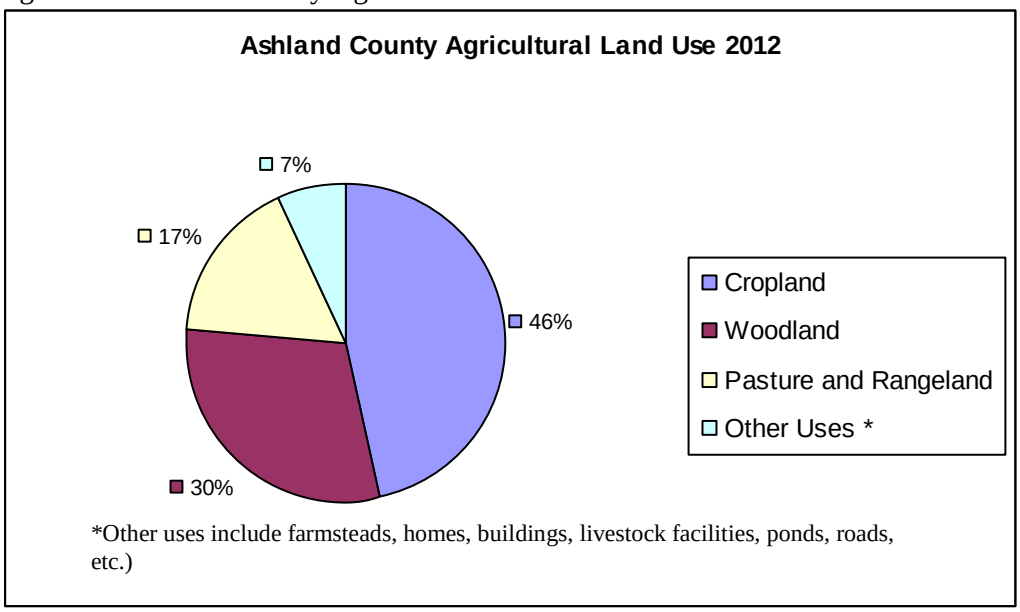
Ashland County is 1,468,160 acres in size. Over half of that acreage is in the form of open water, primarily Chequamegon Bay and Lake Superior. There are 647,235 acres[1] of land and open water in the county of which there were 45,815 acres (7.1%) in farms in 2012 (Table 3-1) Woodlands and forests make up nearly 88% of the land base, including wooded lands found on farms. Table 3-1 also shows the changes in agricultural land use in Ashland County between 2002 and 2012. In 2012, the majority of land in farms was used for crops (46%), followed by agricultural woodlands (30%) (Figure 3-2). While the total amount of land in croplands dropped less than 4% between 2002 and 2012, there has been a shift from woodland acres to permanent pasture and rangeland during that same period.

[1] USDA 2015 - http://nassgeodata.gmu.edu/CropScape

Table 3-1: Ashland County Agricultural Land Use 2002 to 2012[2]

	2002		2007		2012	
Land Use	**ACRES**	**%**	**ACRES**	**%**	**ACRES**	**%**
Total Land in Farms	**58,746**		**55,370**		**45,815**	
Total Cropland	29,353	50.0%	26,529	47.9%	21,243	46.4%
Total Woodland	23,905	40.7%	21,813	39.4%	13,699	29.9%
Permanent Pasture and Rangeland	2,134	3.6%	4,464	8.1%	7,658	16.7%
Other Uses (Land in farmsteads, homes, buildings, livestock facilities, ponds, roads, wasteland, etc.)	3,354	5.7%	2,564	4.6%	3,215	7.0%

Figure 3-2: Ashland County Agricultural Land Use in 2012[3]



The total number of acres in farms in Ashland County declined 17% between 2007 and 2012 while the number of farms and the average size of farms decreased by smaller amounts during the same period. The total market value of the farms increased slightly overall, with a 1% decrease in livestock value but a 96% increase in crop value (Table 3-2).

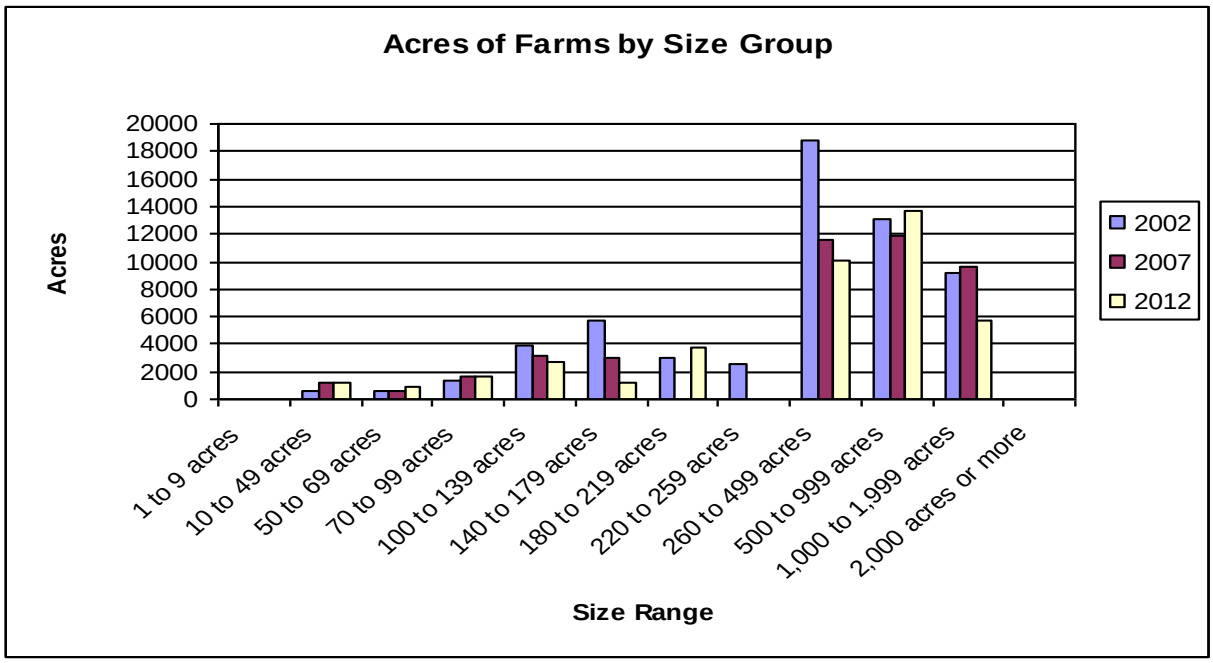
[2] USDA 2002, 2007 and 2012 Census of Agriculture
[3] Source: USDA 2012 Census of Agriculture

Table 3-2: Ashland County Farms 2002 to 2012[4]

Measure	2002	2007	2012	% Change 2007-2012
Land in Farms (ac.)	58,746	55,370	45,815	-17%
Number of Farms	227	203	187	-8%
Average Farm Size (ac.)	259	273	245	-10%
Total Market Value	$6,232,000	$11,947,000	$12,036,000	+1%
Crop Value	*$919,000 (15%)*	*$1,283,000 (11%)*	*$2,517,000 (21%)*	*+96%*
Livestock Value	*$5,313,000 (85%)*	*$10,665,000 (89%)*	*$9,518,000 (79%)*	*-1%*

Between 2002 and 2012, the number of acres in farms less than 100 acres in size increased while farms between 100 and 500 acres generally showed a decline in total acres. Ashland County does not have farms larger than 2,000 acres, and the largest farm group – 1,000 to 1,999 acres, also declined in total acres. In 2012, the greatest number of farms was found in the 500 to 999-acre group, which also increased between 2007 and 2012 (Figure 3-3).

Figure 3-3: Ashland County Farms by Size 2002-2012[5]



Data from the Wisconsin Agricultural Statistics publications 2004-2014 are spotty for dairy and corn production, but fairly complete for alfalfa and hay production (Table 3-3). The number of milk cows remained steady, but production increased slightly between 2010 and 2014. From 2004 to 2014 the total number of all cattle and calves fluctuated between 6,800 and 8,000

[4] USDA 2002, 2007 and 2012 Census of Agriculture
[5] USDA 2002, 2007 and 2012 Census of Agriculture

animals. The number of acres in corn grown for grain and silage increased from 2008 to 2014, while the number of acres in alfalfa and other hay declined during the same period.

Table 3-3: Wisconsin Agricultural Statistics 2004-2014: Dairy Cows, All Cattle and Calves, Corn Production, and Hay Production[6]

MEASURE	2004	2006	2008	2010	2012	2014
# of Milk Cows	*	*	*	2,000	2,000	*
Lbs. of Milk/Cow	*	*	*	20,300	20,900	*
Lbs. of Milk Production/1000 lbs. cow	*	*	*	40,600	41,800	*
# of All Cattle & Calves	7,500	8,000	7,000	6,800	7,000	7,300
# Acres of Corn for Grain	*	*	700	*	1,100	910
Bushels/acre yield of Corn for Grain	*	*	91	*	100.0	95.6
Bushels Produced of Corn for Grain	*	*	64,000	*	110,000	87,000
# Acres of Corn for Silage	*	*	900	*	*	1,130
Tons/acre yield of Corn for Silage	*	*	15.5	*	*	15.0
Tons Produced of Corn for Silage	*	*	14,000	*	*	17,000
# Acres of, Alfalfa Hay	6,000	6,100	7,000	4,200	3,170	3,280
Tons/acre yield of Alfalfa Hay	2.0	1.50	2.2	1.8	1.90	1.95
Tons Produced of Alfalfa Hay	11,800	9,200	15,300	7,400	6,100	6,400
# Acres of Other Hay	13,700	14,800	16,100	9,900	11,200	10,300
Tons/acre yield of Other Hay	1.40	1.00	1.97	2.0	1.45	1.65
Tons Produced of Other Hay	18,900	14,900	31,700	19,800	16,000	17,100

* Not Reported

The 2015 Cropland Data Statistics for Ashland County[7] (Table 3-4) clearly shows that woodlands and forest make up the vast majority of the land base in the county. The most

[6] Wisconsin Agricultural Statistics 2004 -2015
[7] USDA 2015 - http://nassgeodata.gmu.edu/CropScape

common agricultural crops raised in the county were "other hay" (10,196 acres, 1.58%), "grass pasture" (8,556 acres, 1.32%), "alfalfa" (3,206 acres, 0.5%), and "corn" (2,673 acres, 0.41%). In total, these 4 crop categories comprise 3.8% of the land base. All other crops combined totaled 1,968 acres or 0.3% of the land base which included 344 acres of fallow or idle cropland.

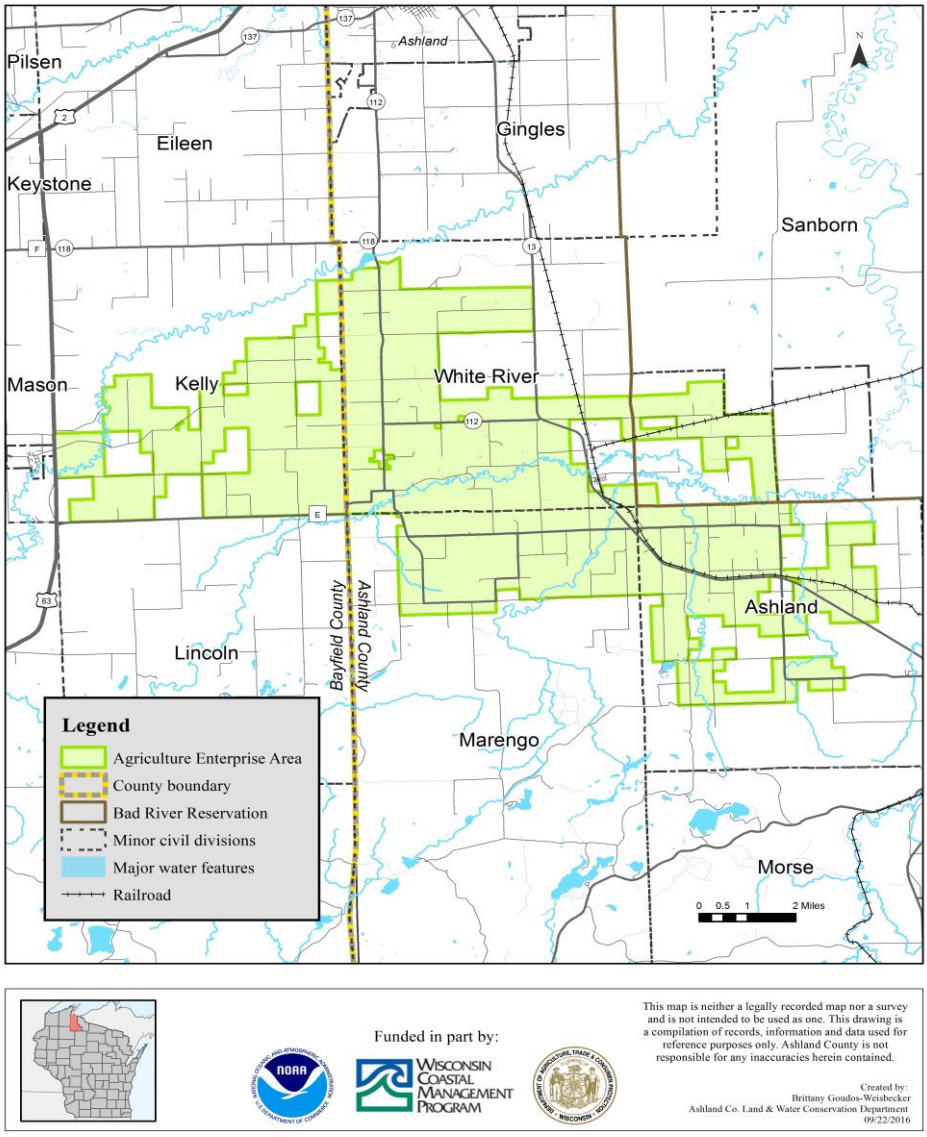
Table 3-4: Ashland County Cropland Data Layer Statistics 2015

CATEGORY	ACRES	% OF COUNTY
Entire County	***647,235.2***	***100%***
Deciduous Forest	300,296.4	46.40%
Woody Wetlands	163,700.5	25.29%
Mixed Forest	73,484.5	11.35%
Evergreen Forest	31,839.1	4.92%
Developed/Open Space	20,259.0	3.13%
Open Water	12,954.9	2.00%
Other Hay/Non Alfalfa	10,195.9	1.58%
Shrubland	8,831.3	1.36%
Grass/Pasture	8,556.0	1.32%
Herbaceous Wetlands	5,366.8	0.83%
Alfalfa	3,206.0	0.50%
Corn	2,673.4	0.41%
Developed/Low Intensity	2,353.8	0.36%
Developed/Medium Intensity	1,234.1	0.19%
Oats	597.1	0.092%
Fallow/Idle Cropland	343.6	0.053%
Soybeans	326.3	0.050%
Developed/High Intensity	311.4	0.048%
Barley	268.2	0.041%
Barren	224.8	0.035%
Spring Wheat	109.0	0.017%
Winter Wheat	39.8	0.0061%
Clover/Wildflowers	36.5	0.0056%
Dry Beans	13.8	0.0021%
Rye	8.9	0.0014%
MISC: Sunflowers, Apples, Potatoes, Herbs, Double Crop Soybeans/Oats	4.1	0.0006%

Agricultural Enterprise Areas

The *Fields, Waters and Woods Agricultural Enterprise Area* was established in Ashland and Bayfield Counties in 2014. It covers parts of the Towns of Ashland, Marengo, and White River in Ashland County and the Town of Kelly in Bayfield County. The AEA also includes lands within the Bad River Band of Lake Superior Tribe of Chippewa Indians Reservation (Figure 3-4). Creation of the AEA provided the opportunity for qualified landowners to enroll in the Farmland Preservation Program for a $5/acre tax credit. There were 13 petitioners to establish the AEA, 10 of which have their home farms in Ashland County. To date, there have been 4 Farmland Preservation Agreements approved, all in Ashland County. Application of consistent Farmland Preservation Area mapping criteria in this plan is likely to result in minor modifications to the AEA boundary and eligible tax parcels.

Figure 3-4: Fields, Waters, and Woods Agricultural Enterprise Area



Farms and Agricultural Services

Based on records assembled from a variety of sources we estimate that there were 159 farms in the county in 2016, including 12 farmers who raise both dairy and beef cattle, 5 farms that are dairy only and 64 farms that are beef only (Figure 3-5). Some of the remaining farms are landowners raising small numbers of horses, pigs, chickens, sheep, or goats. Some other farms produce fruits, vegetables, seed, and grain for sale, and many others are landowners who rent their land to others for producing hay and grain. The USDA Census of Agriculture for the years 2002, 2007, and 2012 shows a decline in the number of farms from 227 in 2002 to 203 in 2007 and 187 in 2012 (Table 3-2). Discrepancies in the data concerning the number and types of farms is not surprising due to the lack of a comprehensive agricultural database that is consistently shared and updated among farmers, Farm Service Agency and Ashland County.

Figure 3-5 also highlights the location of local businesses that support agriculture by supplying equipment and/or services. The businesses in close proximity to Ashland County are listed below. The list is not exhaustive of the resources being used by farmers in the county.

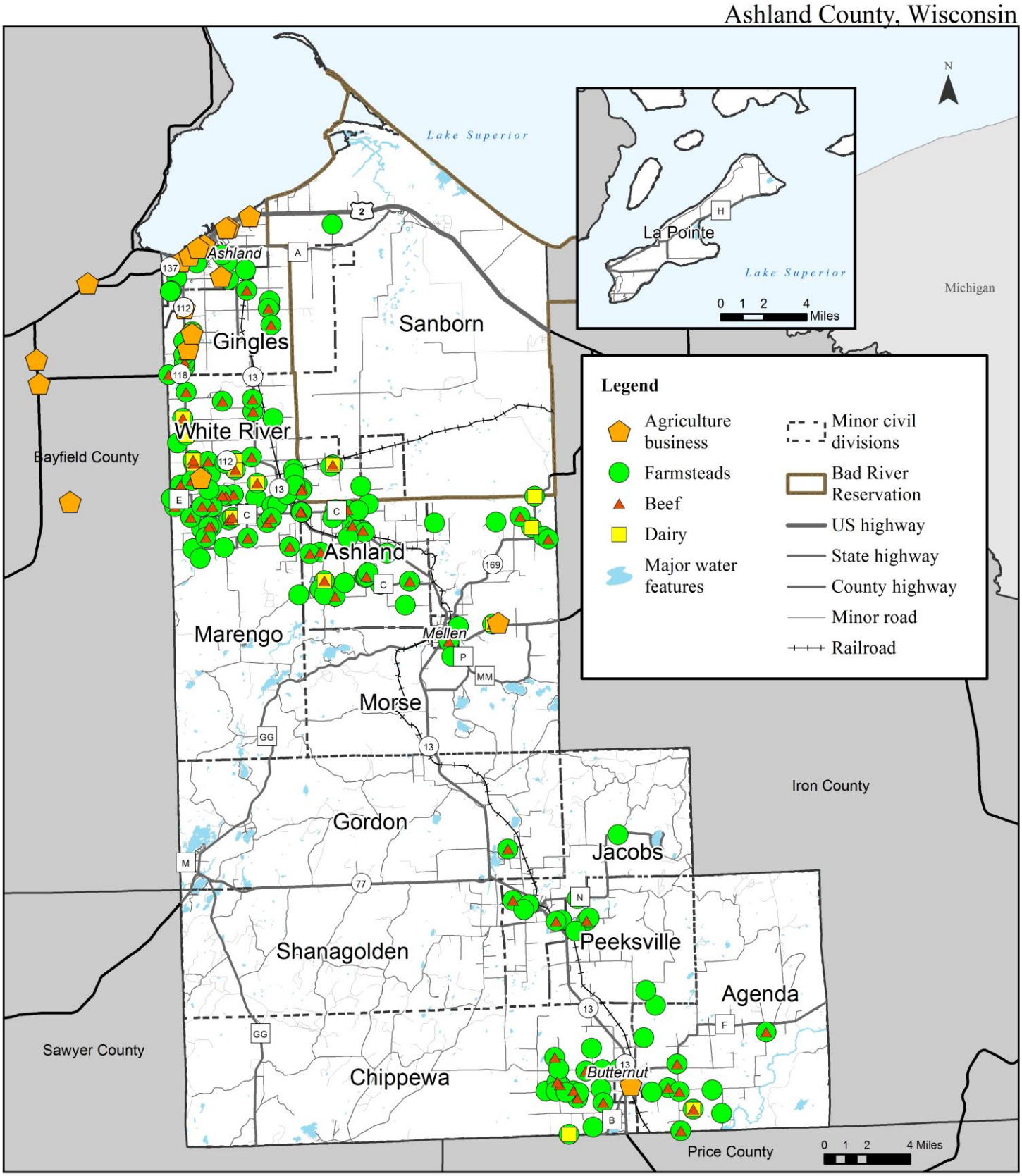
- Ashland Area Veterinary Clinic
- Butternut Feed Store
- Chequamegon Food Co-Op
- Deer Creek Seed
- Don's Repair Service
- L & M Fleet Supply
- Lulich Implement
- Midland Services
- Northland Lawn and Sport
- Nortrax Inc.
- O'Dovero Meat Market
- Pearce's Sausage Kitchen
- Ritola Inc.
- Rural Mutual Insurance (WI Farm Bureau)
- Tractor Supply Company
- United Ag Coop - Ashland Facility
- White River Ag Products
- Willow Animal Hospital

These local businesses do not provide everything that all agricultural producers need - such as custom manure hauling or milk transport - requiring some farmers to incur additional costs to bring the service in or to transport their products out for processing. The respondents to the *Ashland County Agricultural Land Use & Preservation Survey 2016* felt strongly that they had adequate access to co-op and veterinary services, but identified the need to increase the number of processing facilities and direct farm marketing locations (Appendix 3-A).

Farmland Conversion

The rate and speed of farmland conversion is an important factor in understanding County-wide land use trends. The Wisconsin Farmland Preservation Program was enacted in 1977 to preserve good agricultural land from development and provide income tax credit to farmers. While the original Farmland Preservation Program was a helpful tool to limit farmland conversion, it wasn't totally effective in changing housing development patterns or providing enough incentive to farmers to retain all of their land in agricultural production. Because Ashland County does not have the housing and commercial development pressure experienced by many other Wisconsin Counties, the conversion of farmland to other uses has been slow and subtle. Probably the biggest influence of farmland conversion has been the proliferation of smaller (5-40 acre) "hobby farms" and recreational properties. While many of these parcels remain largely undeveloped and may still be farmed by the landowners or their neighbors, issues related to nutrient management, wildlife damage abatement, land improvements, and soil and water conservation practices have become more complex.

Figure 3-5: Ashland County Farms and Local Services



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09/25/2016

Assistance Programs

There are many Federal, State and Local organizations that offer technical assistance or cost-share funding (or both) to help preserve the natural and agricultural environment in Ashland County and the surrounding area. This list is not all-inclusive and programs and opportunities may change from year to year.

Federal Agencies:
- Natural Resources Conservation Service (NRCS)
- Fish and Wildlife Service (USFWS)
- National Park Service (NPS)
- United States Geological Survey (USGS)
- Forest Service (USFS)
- Environmental Protection Agency (EPA)

Federal Programs:
- Conservation Reserve Program (CRP)
- Conservation Reserve Enhancement Program (CREP)
- Conservation Security Program (CSP)
- Emergency Watershed Protection Program (EWP)
- Environmental Quality Incentives Program (EQIP)
- Forestry Incentive Program (FIP)
- Wetlands Reserve Program (WRP)

State Agencies:
- Department of Agriculture, Trade, and Consumer Protection (DATCP)
- Department of Natural Resources (DNR)
- University of Wisconsin-Extension (UWEX)

State Programs:
- Managed Forest Law (MFL)
- Forest Land Enhancement Program (FLEP)
- Stewardship Incentive Program (SIP)
- Wildlife Damage Abatement and Claims Program (WDACP)
- WI Farmland Preservation Program (FPP)
- WI Forest Landowner Grant Program (FLGP)
- WI Non-Point Source Pollution Abatement Program
- Wisconsin Forest Landowner Grant Program
- Surface Water Grants
- Land & Water Management Plan Implementation Funds

Local Government:
- County Land & Water Conservation Department
- County Planning & Zoning Department
- County Forestry and Parks Department
- County Highway Department

Non-Governmental Organizations:
- Bad River Watershed Association
- Bayfield Regional Conservancy
- Chequamegon Bay Area Partnership
- Ducks Unlimited
- Trout Unlimited
- Wisconsin Waterfowl Association

FOREST AND WOODLAND RESOURCES

Nearly 88% of Ashland County's land acres are covered by trees including deciduous forest, evergreen forest, mixed forest, and woody wetlands (Table 3-4, Figure 3-6). Much of the forest resource is found within public lands managed by the Chequamegon-Nicolet National Forest, Apostle Islands National Lakeshore, State of Wisconsin, and the Ashland County Forest. The Bad River Indian Reservation also has substantial forest resources with a mix of ownership (Table 3-5, Figure 3-7). Private forests and woodlands are of primary interest to farmland preservation because those landowners could potentially qualify for tax credits under the program. Private forest lands range from large blocks of private industrial forest to small woodlots, forested riparian areas, and wetlands. Many of the private forest lands do not have management plans, but there are 88,050 acres of Managed Forest Lands (MFL) with plans developed by the Wisconsin Department of Natural Resources, and another 394 acres of land with Forest Management Plans written for the Natural Resources Conservation Service (Table 3-5).

Table 3-5: Land Ownership of Forests and Woodlands in Ashland County[8]

Owner	Total Acres	Forested Acres
Chequamegon-Nicolet National Forest	181,813	157,704
Apostle Islands National Lakeshore	35,537	33,872
State of Wisconsin	43,577	37,289
Ashland County Forest	39,843	34,937
Bad River Reservation including MFL lands	119,962	98,757
Private – MFL "Open" inside Bad River Reservation	14,505	12,724
Private – MFL "Closed" inside Bad River Reservation	562	497
Private – MFL "Open" outside Bad River Reservation	50,186	44,358
Private – MFL "Closed" outside Bad River Reservation	22,797	19,109
Private - NRCS plan (6 landowners)	394[9]	Unknown
Private - no plan	138,454	91,539

[8] Acres calculated from GIS layers at the Ashland County Land & Water Conservation Department
[9] Gary Haughn, NRCS District Conservationist, Personal Communication

Figure 3-6: Forested Land Cover in Ashland County

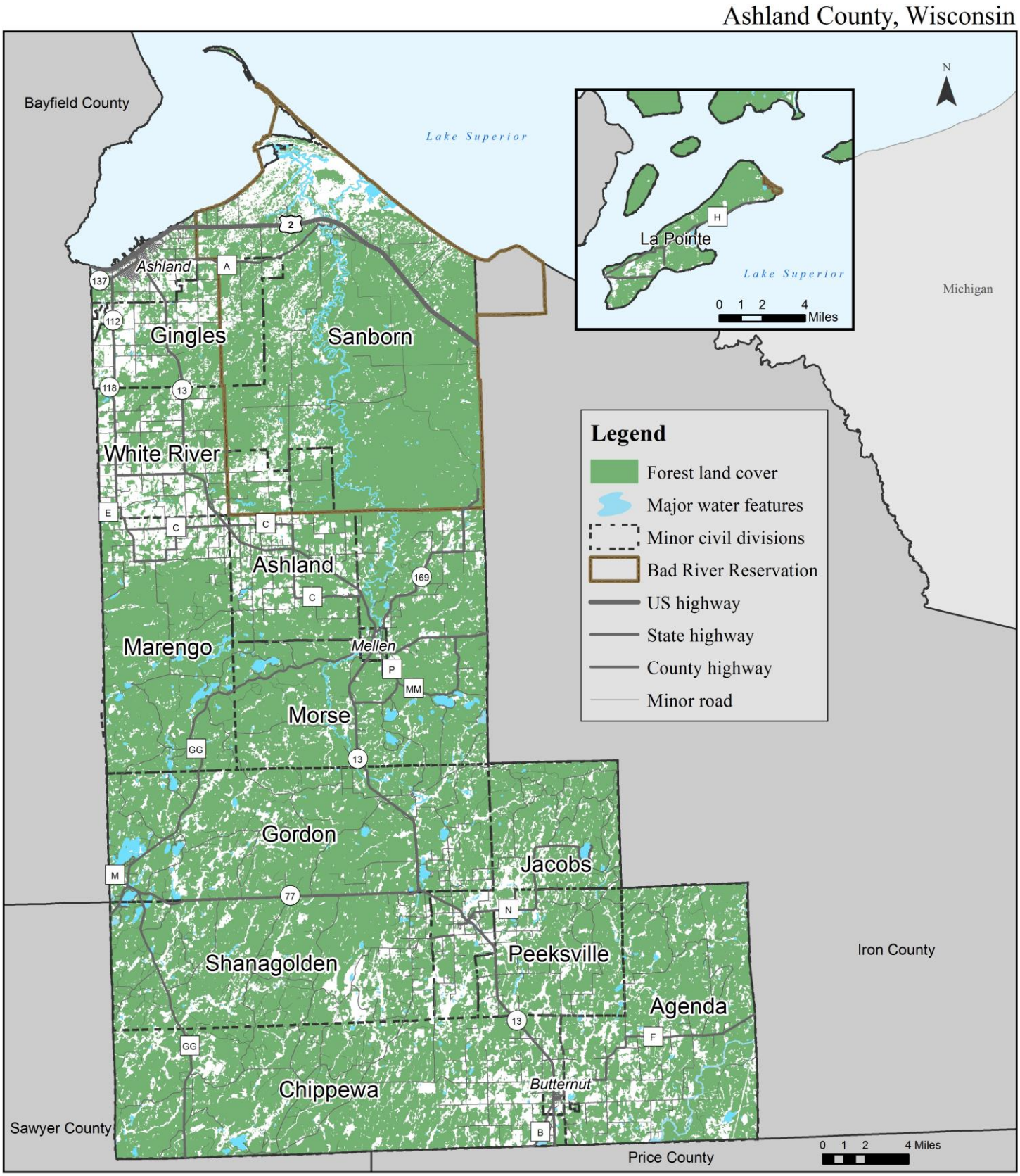

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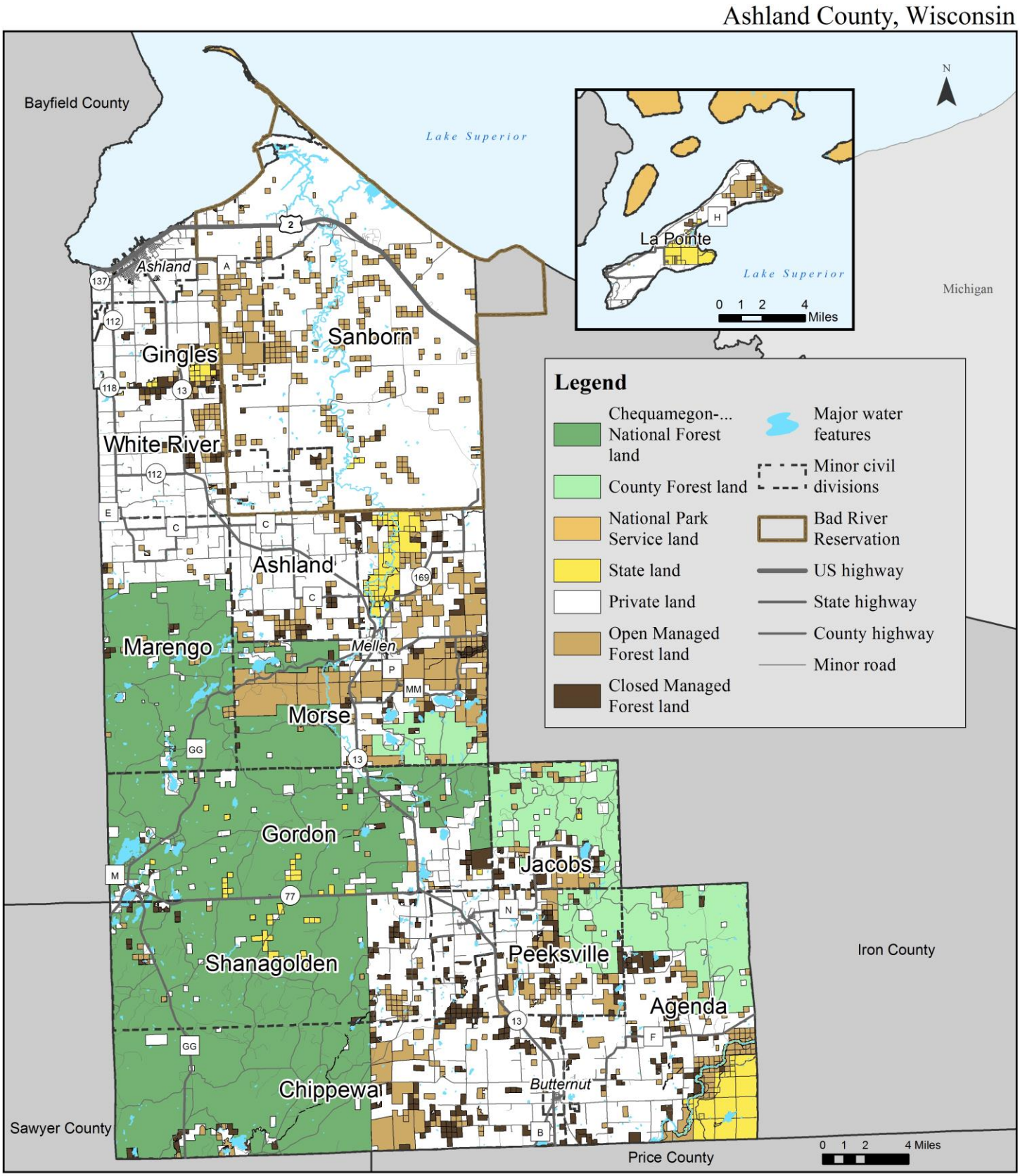
Figure 3-7: Land Ownership in Ashland County



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ECONOMIC GROWTH AND BUSINESS DEVELOPMENT

The *2016 Ashland County Comprehensive Plan Background Document* (Volume 1, Chapter 6) includes detailed information concerning Economic Development for Ashland County. Good quality jobs are frequently mentioned as a key component of economic development. In Ashland County from 1970 to 2014, employment grew from 6,977 to 10,893 jobs, while the total population fell slightly. The Asset Based Development approach to economic development inventories the region's assets then leverages them to grow the economy. Many of the region's assets are based on the use and enjoyment of natural resources, and the county is challenged to use those assets to create the desired quality of life for its residents.

Agricultural Economic Growth and Trends

Notable excerpts from *the 2016 Ashland County Comprehensive Plan* include:

- In 2010, the percent of people listing their occupation as "farming, fishing, and forestry occupations" was much lower (2.7%) than Wisconsin as a whole (31.3%)
- The number of people employed by the farm industry dropped from 250 people in 2001 to 212 people in 2014
- The number of people employed by the forestry, fishing, or agricultural services industry also dropped from 296 people in 2001 to 230 people in 2014
- The earnings for the farm industry fluctuated, but increased from $805,000 in 2001 to $5,800,000 in 2014, while the earnings for the forestry, fishing, and agricultural service industry decreased from $12,214,000 in 2001 to $7,640,000 in 2014
- In 2014, employment in the agriculture, forestry, fishing and hunting industries comprised only 1.1% of the total employment in the county, and the wages paid for those jobs was 25.6% below average
- In 2014 the combined classes of "Agriculture", "Agricultural Forest", and "Undeveloped" totaled less than 2% of the assessed land value for Ashland County, while the class "Forest Lands" totals 11% of the county-wide assessed value
- Despite the relatively low county-wide percentage of assessed land value, the agriculture, forest, and undeveloped land values comprise a high percentage of the total value for several townships
- 56% of the total equated value for Ashland County comes from the City of Ashland (31%) and the Town of LaPointe (Madeline Island - 25%)

Forestry Economic Growth and Trends

Forests are one of the key assets of Ashland County and account for significant jobs and recreational opportunities in the county[10]. Notable excerpts from the *2016 Ashland County Comprehensive Plan Background Document* include:

- Forestry-related employment in 2012 resulted in 452 jobs in the county, 330 of which were in sawmills and wood products, 110 jobs in forestry and logging, and 12 jobs in the pulp and paper industry.
- The direct economic effect of these industries resulted in an output of $91.4 million, with $30.5 million in “value added” impact.

[10] Ballweg, Julie. 2012. Forest Economy, Ashland County. *Wisconsin Department of Natural Resources*

- The forest-related industries had a payroll of $18.5 million, $22.3 million in total labor income, and resulted in 483 jobs indirectly.
- The forest industry generates $1.5 million directly in taxes and $2.2 million indirectly.
- Forestry is one of the top 10 employers, providing 4.1% of the jobs in the county.
- Forestry is number 2 in total economic output, providing 7.1% of the total output for the county.
- Every job in forest-related industries supports 1.1 additional jobs in the county.
- Every million dollars of output in forestry created $540,000 of output in other sectors of the local economy.

UTILITIES, INFRASTRUCTURE, AND COMMUNITY FACILITIES

The *2016 Ashland County Comprehensive Plan Background Document* (Volume 1) includes detailed information about Utilities, Infrastructure, and Community Facilities. *Transportation* is discussed in Chapter 3 and *Utilities and Community Facilities* are described in Chapter 4. The Utilities and Community Facilities chapter of the background document includes sections covering stormwater systems and regulations, water systems, wastewater facilities, telecommunication, electric and natural gas, energy independence, solid waste disposal and recycling, library services, parks and open space, police service, fire and emergency management services, nursing homes, cemeteries, child care facilities, health facilities, schools, and University/Technical Colleges. Aspects of these planning elements most pertinent to agriculture and farmland preservation are highlighted below.

Transportation

The Ashland County Highway Department is responsible for the maintenance and improvement of 190 lane miles of County Trunk Highway and maintenance of approximately 250 lane miles of State Trunk Highway. The department's operational budget is approximately $2.6 million annually with a total of $578,645 coming from the county tax levy in 2016. There has been no increase in the department's operational budget since 1996. The department also has a Road and Bridge Improvement Fund used to pay for capital improvements on the County Trunk Highway System. The county levy for the 2016 fund was $520,000. The responsibility for maintenance and improvement of local town roads falls on the local municipality. Many agricultural operations in Ashland County rely on these local roads to access their fields and to ship/receive goods and services. Months after the devastating flooding of July 2016 many local roads are still impassable; requiring some farmers to detour long distances and modify plans for manure application, harvest and shipping.

Ashland County enacted Ordinance #012-2014-83 to opt in for "Category B – Implements of Husbandry" to comply with the statutory weight limits under WI Stat. 348.15(3)(G). This ordinance became effective on January 1, 2015 and requires operators of this equipment to obtain a no-fee permit from the County Highway Department to exceed length and/or weight limits on highways under the jurisdiction of Ashland County.

Two forms of transportation with a long and prominent history in Ashland County and surrounding region, water and railroad, have lost much of their benefit to the agricultural community. Water transportation is now restricted to private boats, primarily for recreation, and a ferry route is maintained between the City of Bayfield and Madeline Island. Railroads had a dramatic influence on the development of forest and agricultural resources in the county. Only two rail lines remain in the county, and serious flooding in July 2016 damaged the tracks near Mellen and High Bridge. As a result of the flooding, the railroad was closed near Glidden, with uncertainty about when, or if, it will reopen.

Other forms of transportation, including bicycle and pedestrian trails, taxis, Bay Area Rural Transit (BART), Bad River Transit, the Indian Trails bus line, and specialty transport for elderly or disabled customers provide little support to agriculture, although some workers may use these forms of transportation to reach their jobs in the service community. Cross-country ski trails and snowmobile trails are present in many parts of the county, but are generally used for recreational transportation. Snowmobiles, all-terrain vehicles (ATV and UTV), tractors and skid steers are frequently used by the agricultural community to care for livestock and maintain fences, crossings and other infrastructure.

Stormwater Systems and Regulations

Ashland County does not have ordinances specifically related to management of stormwater. State permits are often required for activities taking place in or near waterways. In addition, the county has several ordinances containing aspects of stormwater management.

- Shoreland Zoning Ordinance - adopted pursuant to the authorization in §59.692 & §281.31 Wisconsin Statutes, and NR 115 Wisconsin Administrative Code.
- Floodplain Zoning Ordinance - adopted pursuant to the authorization in §61.35 & §62.23 for villages and cities; §59.69, §59.692, & §59.694 for counties; and §87.30 Wisconsin Statutes and NR 116 Wisconsin Administrative Code.
- Ashland County Zoning Ordinance contains further regulations on shorelands and floodplains not applicable to cities and villages, the Bad River Indian Reservation, or the Town of LaPointe.
- Ashland County Subdivision Control Ordinance, adopted pursuant to §236.45 Wisconsin Statutes, regulates new subdivisions in unincorporated areas.
- Ashland County Non-Metallic Mining Reclamation Ordinance, adopted to comply with the 1993 Wisconsin Act 464 and subsequent rule, Chapter NR135.

Cities and Villages are subject to several regulations related to stormwater management.

- Regulation of activities in wetlands within the shoreland zone - §61.351 & §62.231 Wisconsin Statutes, and NR 117 Wisconsin Administrative Code
- Required to adopt reasonable and effective floodplain zoning ordinances - §87.30(1) Wisconsin Statutes.
- None of the townships, cities, or villages within Ashland County have large enough populations to require stormwater management plans by the WDNR.
- All communities are subject to Wisconsin's stormwater rules under the Pollution Discharge Elimination System (WPDES) Program if they disturb 1 or more acres of land.

Water Systems

Many county residents and virtually all agricultural producers have private wells and septic systems. Protection and maintenance of private wells is largely the responsibility of the landowners. Good construction methods, proper location, and suitable land control are critical in ensuring a safe drinking water from private wells. The City of Ashland, City of Mellen and the Village of Butternut have water service utilities. Chapter NR812 of the Wisconsin Administrative Code requires new wells to be located with the following requirements:

- 25 feet from septic tanks
- 25 feet from the high water mark of a lake, pond or stream
- 50 feet from livestock yards, silos, and septic drainfields
- 100 feet from petroleum tanks
- 250 feet from a sludge disposal area or an absorption, storage, retention or treatment pond

- 1,200 feet from any existing, proposed or abandoned landfill site

Further, livestock owners who land apply manure must observe several restrictions on when and where they spread manure, including keeping at least 50 feet away from private wells and avoiding manure applications within 200 feet of a conduit to groundwater. The county Land and Water Conservation Department provides technical assistance and cost-share to properly abandon wells that are no longer used to reduce the risk of groundwater contamination.

Wastewater Facilities

The City of Ashland, City of Mellen, Village of Butternut, Town of La Pointe and unincorporated Glidden (in the Town of Jacobs) have sanitary sewer services. The rest of the county residences and businesses rely on private septic systems and wells, including farmsteads. Ashland County reviews and permits the private wastewater treatment systems (POWTS), although no permit is currently needed for storage of livestock manure.

Telecommunication

The use of cell phones and high-speed internet service has grown exponentially in the last decade. Rural areas continue to lag behind the rest of the region in cell phone coverage and broadband service. As farms transition to the younger generation and new technologies emerge to increase efficiency and production, fast and reliable telecommunications will be essential. What once was a printed brochure, form, license, or permit delivered through the postal service has now become a document that can only be downloaded and printed from the internet and transmitted via email. The technological advances require not only reliable telecommunications, but also education and retraining of older farmers.

Electric, Natural Gas, Fuel Oil and Propane

Xcel Energy provides electrical services to most of Ashland County, and natural gas to some portions of the county. A few areas of the county, primarily rural areas, are served by electric cooperatives, Price Electric Coop in the south and Bayfield Electric Coop in north and central parts of the county. Both electric utilities recently announced community solar garden projects that will enable their customers to purchase shares of large solar gardens. Many rural landowners and agricultural producers use liquefied petroleum gas (LP, propane) and/or fuel oil to heat their farm residences, barns, and outbuildings. Propane and fuel oil are provided by the Midland Cooperative and others.

Energy Independence

A 2009 study determined that Ashland County spends around $370,000 each year for energy to maintain county operations. Over $106,000 is spent within the County Courthouse and Law Enforcement Center alone. The study recommended 17 items to make the county more efficient, and new projects are being considered in 2016. Energy costs for agricultural producers can also be a major expense, whether it is fuel to heat a milking parlor or residence, diesel fuel for the tractors, or gasoline for the trip to the grocery or feed store. Like communities, farms need to implement measures to reduce waste, increase efficiency, and develop alternative energy.

Solid Waste Disposal and Recycling

Individual municipalities are responsible for garbage and recycling collection. On farms, a big issue is disposal of silage bags and bale wraps. In larger agricultural communities, efforts are being organized to clean, collect and recycle used agricultural plastics. In Ashland County and surrounding region there is likely not enough material to make collection and shipping to a recycling center feasible. Unfortunately, due to the high cost of disposal through conventional methods, much of the plastic debris is burned or buried onsite.

Library Services
Library resources are an important part of the community base and repository for many of the historical archives. There are four libraries forming the Northern Waters Library Service, the City of Ashland, Town of La Pointe, City of Mellen, and Odanah in the Town of Sanborn. The library located at Northland College is also available for public use.

Parks and Open Space
Ashland County provides ample recreational opportunities due to the extensive public lands, outstanding natural resources, and development of recreational facilities. There are numerous motorized and non-motorized trails, campgrounds, streams, lakes, wetlands, wilderness...and Lake Superior itself. Private lands managed primarily for agriculture also provide ample opportunities for hunters, anglers, trappers, and nature enthusiasts who gain permission.

Police Service
Ashland County is serviced by a 911 Emergency Response System that is operated by the Sheriff's Department. The Ashland County Sheriff's Department patrols the county. The City of Mellen, Town of La Pointe, Bad River Reservation, and the City of Ashland all have their own police services. The Wisconsin Department of Natural Resources also provides Conservation Wardens who enforce the fish and game laws but also have a role in ensuring compliance with other state laws related to non-point source and point source pollution laws.

Fire and Emergency Management Services
Municipalities within the county are responsible for providing Fire and EMS; many belong to Fire and/or EMS districts that provide services across municipal boundaries. Due to low population numbers, great distances, and limited cell phone coverage, access to timely fire and other emergency services is somewhat limited.

Nursing Homes
There are three nursing homes in Ashland County. Many farmers work until they physically can't anymore. While some of these folks eventually end up in nursing homes, many are cared for in-place by other family members or volunteers.

Cemeteries
The City of Mellen, the Town of White River, the Village of Butternut, the Town of Ashland, the Town of Marengo, the Town of Morse, and the Town of Sanborn all have one cemetery. The Town of Gordon, the Town of Jacobs, and the Town of LaPointe all have two cemeteries.

Child Care Facilities
Within Ashland County there are a total of 22 certified and 24 licensed daycare programs with capacities ranging from 8 to 46 children. In general, childcare demand outstrips supply on a national, state, or local scale. The cost of care plays a big part in household decisions about childcare arrangements. Similar to care of the elderly, childcare in the farming community is greatly supported by other family, neighbors, churches, and volunteers.

Health Facilities
Hospitals and clinics located in Ashland County include the Memorial Medical Center, Essentia Health, NorthLakes Community Clinics, Bad River Health and Wellness Center, Chequamegon Clinic, Bay Area Mental Health Center, and the Mainstreet Clinic. The majority of these facilities are located in the City of

Ashland, while the Bad River Health and Wellness Center is located in Odanah.

Schools
There are four public school districts in Ashland County. Information about school district enrollment is in Chapter 4, Table 6 of Volume 1. In 2006, the Glidden School District merged with Park Falls to form the Chequamegon School District. Our Lady of the Lakes Catholic Church also has a school for grades K-8, and there were numerous students being home-schooled in 2016.

University/Technical Colleges
Ashland County is part of the Wisconsin Indianhead Technical College district including campuses in Ashland, New Richmond, Rice Lake, and Superior. Other nearby colleges include Northland College, a four-year institution that is located in the City of Ashland, and Gogebic Community College which is a two-year institution located in Ironwood, Michigan. WITC offers classes for Agricultural Power and Equipment Technician, Dairy Herd Management, and Farm Business and Production Management. Northland College provides majors in Forestry, Natural Resources, Water Science, and Sustainable Community Development, among many others.

NATURAL RESOURCES AND THE ENVIRONMENT
Much of the information provided in this section of the Farmland Preservation Plan was gleaned from the Ashland County Land and Water Resource Management Plan[11], and every attempt was made to update maps, tables, text with the most current and accurate information.

Landscape
Ashland County is located in far northern Wisconsin and is bordered on the north by Lake Superior, Bayfield County to the west, Iron County to the east, and Price and Sawyer Counties to the south. The county is approximately 2,294 square miles in size, with more than half in the form of water (Lake Superior, inland lakes, rivers, and streams). Of the 668,103 acres of land in the county, the Wisconsin Wetland Inventory (WWI) identifies 168,388 acres as wetlands 2 acres or greater in size – 25% of the county's land base and 3% of the state wetland total[12]. In addition to the WWI wetland acres, another 13% of the county land base is in small (<2 acres), unmapped wetlands and areas of hydric soils.

The county is divided into two distinct drainage basins at the St. Lawrence Seaway Continental Divide. The Bad River and its tributaries drain most of the northern half of the county to Lake Superior while the Chippewa River and its tributaries drain to the Mississippi River. Elevation ranges from approximately 602 feet at Lake Superior to 1,872 feet at Mt. Whittlesey in the Penokee Iron Range near Mellen. The county includes 17 of the 21 islands collectively known as the Apostle Islands, including Devil's Island, the northernmost point in the state.

Ashland County's landscape is the result of several "recent" glacial advances and retreats that took place over northern Wisconsin some 9,500 to 11,500 years ago. As a result of the most recent glacial activity in Wisconsin, the Lake Superior Lowlands in the northern part of the county contain lacustrine red clays or

[11] Ashland County Land and Water Resource Management Plan 2010-2020. Land and Water Conservation Department: http://www.co.ashland.wi.us/departments/land-and-water-conservation/land-and-water-conservation

[12] Wisconsin Wetland Inventory, Wisconsin Department of Natural Resources: http://dnr.wi.gov/topic/wetlands/acreage.html

clay till. The central part of the county is where the glacial "beach lines" exist resulting in a mixture of clay and sand. To the south of these transitional soils are glacial moraines and outwash soils.

Climate

The Great Lakes region is anticipated to experience increased water temperatures and more intense and frequent rainfall events. Lake Superior has been identified as one of the fastest warming waterbodies in the world, and Chequamegon Bay is one of the shallowest, most southerly, most isolated nearshore areas in Lake Superior. Climate change forecasts suggest that the water resources of Chequamegon Bay are particularly vulnerable to climate change impacts from increasing temperatures.[13] In 1961 the National Weather Service developed estimates of precipitation intensity to help guide the engineering and design of water resource infrastructure.[14] These estimates were revised in 2013 and published by NOAA[15]. The 2013 results indicated that the likelihood of a 24-hour rain event observed at a 100-year recurrence interval (100-year storm) was 38% greater than calculated in 1961. These data and models seem to be validated by recent observations and events. The total annual rainfall in the Ashland area has increased between 6 and 7 inches since the 1950s. The region experienced two heavy rain events causing intense flooding and infrastructure damage within the past 4 years. The most recent event in July 2016 (Figures 3-8 and 3-9) recorded initial damage in excess of $28 million[16] to roadways, trails, and homes. Damage to forests, wildlife and fisheries, farm fields, and drainage ways is untold. Estimates of erosion and sedimentation from this one event have yet to be calculated, but are undoubtedly staggering. To mitigate future damage, it is expected that the region will need to size road culverts and other stormwater infrastructure with the anticipation that rainfall intensity will continue to increase in the future.

Figure 3-8: Flooding from the Bad River in Old Odanah, Ashland County. Photo from Civil Air Patrol flight, July 12, 2016.

[13] Dr. Randy Lehr, Northland College, personal communication
[14] National Weather Service Technical Paper 40. 1961
[15] National Oceanic and Atmospheric Administration Atlas 14. 2013.
[16] Wisconsin Department of Military Affairs. 2016. WI Emergency Operations Center-Incident Report 10. *State of Wisconsin*.

Figure 3-9: State Highway 13 near Highbridge, Ashland County. Photo from Wisconsin Emergency Management, July 13, 2016.

The Wisconsin Initiative on Climate Change Impacts (WICCI)[17] released a comprehensive report detailing the science behind climate change, the anticipated impacts, adaptation strategies, and educational resources on the subject. The project convened 16 working groups to conduct assessments of potential climate change impacts on specific regions, ecosystems, communities and industries in Wisconsin. These working groups focused on several subjects of particular interest in Ashland County including agriculture, coastal resilience, coldwater fish and fisheries, forestry, human health, plants and natural communities, soil conservation, stormwater, water resources, and wildlife. Some of the anticipated impacts may produce shocking results like the flooding and infrastructure damage experienced recently, and other impacts may be much subtler. In all cases, climate change is likely to affect every aspect of our lives and the world we live in, and it will be challenging to find ways to adapt.

[17] *Wisconsin's Changing Climate: Impacts and Adaptation* was produced by the Wisconsin Initiative on Climate Change Impacts (WICCI), a project of the Nelson Institute for Environmental Studies at the University of Wisconsin-Madison and the Wisconsin Department of Natural Resources. http://www.wicci.wisc.edu/

Soils

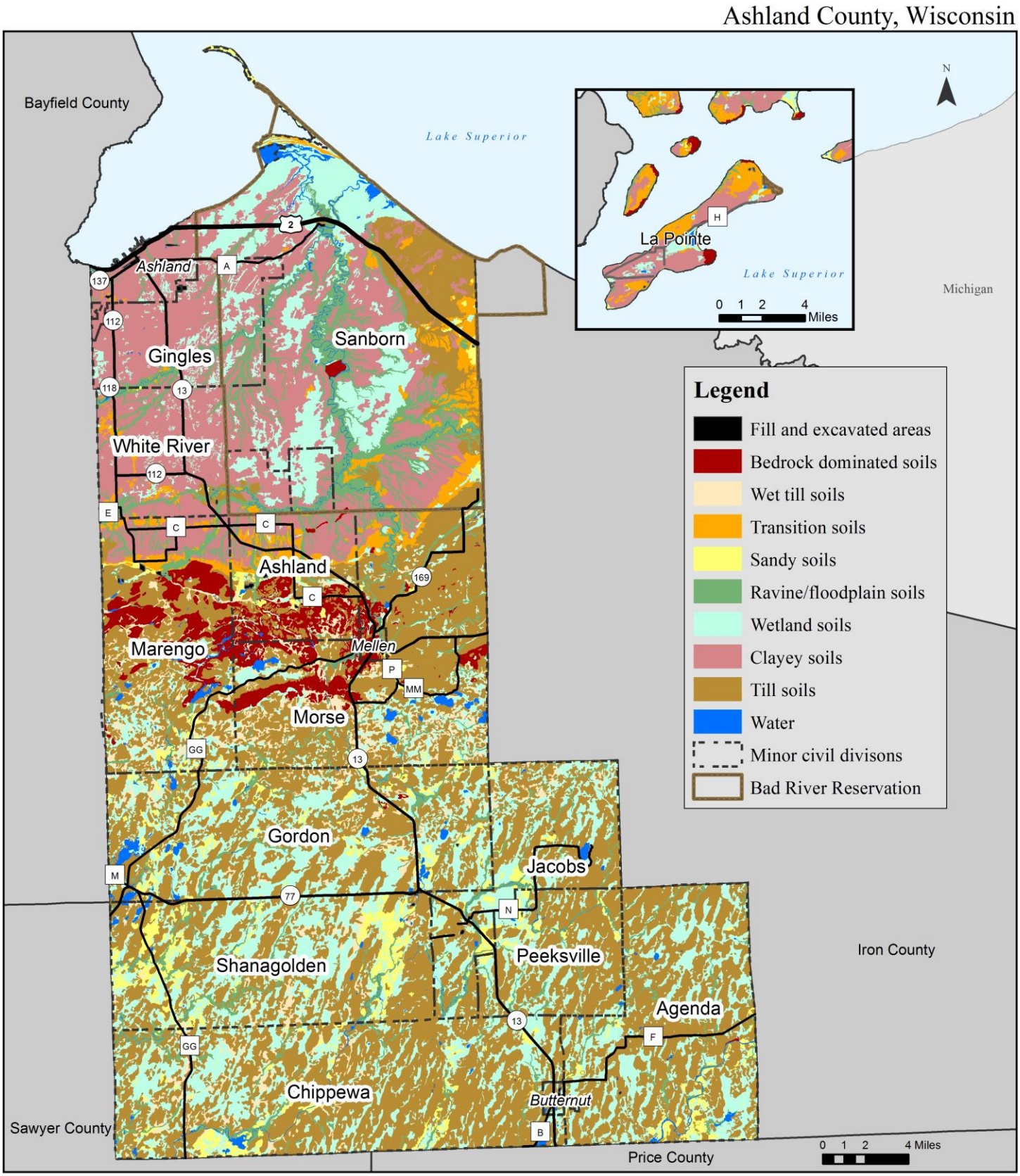
Extensive discussion of the soils of Ashland County can be found in the Ashland County Land and Water Resource Management Plan (LWRMP). The soil survey for Ashland County was completed in 2005. No soils manuscript was published, but detailed mapping tools and information on specific soils can be found at: http://websoilsurvey.nrcs.usda.gov.

Ashland County Generalized Soil Groups:[18] (Figure 3-10)

- Bedrock-Dominated Soils: These soils are relatively shallow, and excavation required for roads, foundations and utilities is limited. Shallow soil depths also limit filtering capabilities of drainage fields.
- Transition Soils (Sand over Clay): Very deep, moderately well to somewhat poorly drained soils that formed in sandy sediments, underlain by clayey deposits. Often referred to as the "transition area", these soils separate the clay plain from the higher elevation area that is dominated by sand. These soils have a sand cap over clay or stratified loamy material. Seeps often are prevalent in these areas, especially in spring, and the headwaters of many streams originate here. Excavations in these soils are subject to cave-ins in spring. With seasonally high water tables, these areas often require alternative sanitary systems such as mounds. Roads in these areas are subject to break-up and often contain unstable wet zones. Seep areas must be avoided in winter because they often do not freeze. Some groundwater recharging of aquifers can also occur in these areas.
- Sandy Soils: Sandy soils often are groundwater recharge areas. These areas are droughty because of low available water capacity and rapid permeability. The rapid permeability of these soils aid in ground water recharge but also provides a poor filter for contaminants.
- Ravine and Floodplain Soils: These are steep, well drained to excessively drained soils on ravines. Some areas are freshly undercut by streams and are slumped. Typically, these soils are stratified loamy, sandy, and clayey materials with water seeps exiting some strata. These areas are prone to slumping and instability and disturbances often result in excessive sedimentation of waterways. The best practice for these areas is to maintain a permanent forest cover.
- Wetland Soils: These areas are wet for part to most of the year and are typically capable of supporting wetland vegetation. They occur either where the groundwater table meets to surface of the land or in "perched" conditions where a confining layer in the soil retards downward flow through the soil. Because of the close contact with the water table, any contamination in these areas can readily spread to groundwater.
- Clayey Soils: These areas include very deep, nearly level to steep soils that formed in clayey glacial till and/or clayey lacustrine deposits modified by wave action and in the underlying stratified loamy and/or sandy lacustrine deposits. The high water-holding capacity of clays encourages the use of level areas for agriculture, but clay soils also limit the availability of water to plant roots more than till soils do.
- Till Soils: Till soils have a higher available water capacity, slower permeability, and higher nutrient holding capacity compared to sandy soils.

[18] Soil classification by Kenneth Bro, Ulf Gaffert and Jesse Turk, prepared for the Ashland County Land & Water Conservation Department. 2009.

Figure 3-10: Generalized Soil Groups of Ashland County



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Ashland County Prime Agricultural Soils (Appendix 3-B, Appendix 3-C)
Farmland classification identifies map units as "Prime Farmland, "Farmland of Statewide Importance", "Farmland of Local Importance", or "Unique Farmland". In Ashland County, there are 261,999 acres of prime agricultural soils. Sixty percent of the prime agricultural soils are labeled as Farmland of Statewide Importance. The category of "Unique Farmland" is recognized as "Prime Farmland if Drained" in Ashland County. The farmland classification identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

Water Resources

Ashland County's total land area covers 668,045 acres. The county has 1,250 square miles of surface water in the form of lakes, rivers, streams, and wetlands. There are 157 named lakes totaling 5,936 acres (9.28 square miles). Ashland County comprises 1.9 percent of Wisconsin's total land area and contains 1 percent of the total inland lake acreage in Wisconsin. Ashland County has two distinct drainage basins: The Lake Superior basin and the Mississippi River basin. Soil conditions, land cover, and land use vary within each basin. Watershed mapping has changed over the years, and there are statewide efforts to standardize how we define, identify, and describe these areas. The approach recently encouraged by both the WDNR and DATCP is to use Hydrologic Unit Codes (HUCs) created by the US Geological Survey. Using standardized HUCs results in a uniform approach to watershed analysis independent of political boundaries or other artificial constraints, and paves the way to develop watershed plans for approval by the Environmental Protection Agency.

Lake Superior Basin (Figure 3-11)
The Lake Superior Basin in Ashland County is comprised of parts of the Bad-Montreal sub-basin (HUC 8 - 04010301), and the Beartrap-Nemadji sub-basin (HUC 8 – 04010302).

Lake Superior has the largest surface area of fresh water in the world, second in volume only to Siberia's Lake Baikal, and is by far the deepest and cleanest of the North American "Great Lakes". The Lake Superior basin encompasses portions of Minnesota, Michigan, Ontario and Wisconsin. In Wisconsin, the Lake Superior basin covers about 1.96 million acres (about 3,069 square miles) in parts of Ashland, Bayfield, Douglas and Iron Counties. Ashland County contains nearly one-third of the total Lake Superior basin in Wisconsin. The 17 Apostle Islands within Ashland County have a total shoreline length of 153 miles. The Apostle Islands are considered to be part of the Chequamegon Bay – Frontal Lake Superior watershed.

Most of the Wisconsin portion of the Lake Superior coastal area is composed of red clay deposits left behind by glaciers about 10,000 years ago. These geologically young deposits are highly erodible, especially in disturbed areas or on slopes. The red clay includes small particles of sand that remain behind in streambeds as the finer clay particles are carried out into the lake. Some sections of the southern portion of the basin are composed of rugged hill and kettle relief, formed by thick end moraine deposits and pitted outwash.

Mississippi River Basin (Figure 3-11)
The Mississippi River Basin in Ashland County is comprised of parts of the Upper Chippewa sub-basin (HUC 8 - 07050001), the Flambeau sub-basin (HUC 8 – 07050002), and the South Fork Flambeau River (HUC 8 – 07050003). The Upper Chippewa Sub-Basin comprises the majority of the waters contributing to the Mississippi River Basin, with very small acreages coming from the South Fork Flambeau River.

Watersheds
Ashland County contains all or parts of five HUC 8 sub-basins, fifteen HUC 10 watersheds (closely approximating the old WDNR watersheds), and 53 HUC 12 sub-watersheds. The relationship among the three HUC levels is displayed graphically in Figures 3-11 and 3-12 and in tabular form in Appendix 3-D.

The HUC 10 watersheds in the Lake Superior sub-basin include Lake Superior proper, Chequamegon Bay – Frontal Lake Superior, Fish Creek – Frontal Lake Superior, Bad River Frontal Lake Superior, Tyler Forks, White River, Marengo River, Potato River, and Headwaters Bad River

The HUC 10 watersheds contributing to the Mississippi River include West Fork Chippewa River, East Fork Chippewa River, Butternut Creek, Upper Flambeau River, Middle Flambeau River, and Headwaters South Fork Flambeau River.

Water quality in Ashland County is generally good, although localized point source pollution from municipal and industrial wastewater discharges have had a negative effect. Other issues, such as pollution from stormwater drains, runoff from farm fields and feedlots, and erosion from logging and construction-sites, have contributed to degraded habitat and water quality in some Ashland County streams. Additional nonpoint source pollution arises from erosion of stream banks, ditches, and lakeshores as a result of fast runoff from rain and snow events. Rapid overland flows cause streams and other channels to cut down and straighten, which in turn decreases the ability of adjacent wetlands and floodplains to store and filter water. Human changes to the landscape that increase the amount of impervious surface (buildings, parking lots, etc.) or that change drainage patterns (roads, culverts, wetland fills, etc.) further intensify the erosion problems.

Surface Water - Rivers and Streams
Ashland County has an extensive network of rivers, streams, creeks, and intermittent waterways. Estimated from GIS using data from the WDNR, there are over 1000 miles of perennial streams and another 712 miles of intermittent waterways. The WDNR lists 479 miles of trout waters in 94 stream segments (Figure 3-13, Appendix 3-E). The rivers and streams (and many wetlands, lakes, and ponds) are connected to each other and to the uplands by an intricate surface water network of ravines, swales, ditches, diversions, and other waterways.

Surface Water - Lakes and Ponds
While not as abundant as the surrounding counties, Ashland County claims 6,804 acres of lakes, ponds, reservoirs, sloughs, and springs. The WDNR lists 184 waterbodies, of which 95 are named (Figure 3-13, Appendix 3-F).

Figure 3-11: HUC 8 Level Watersheds in Ashland County

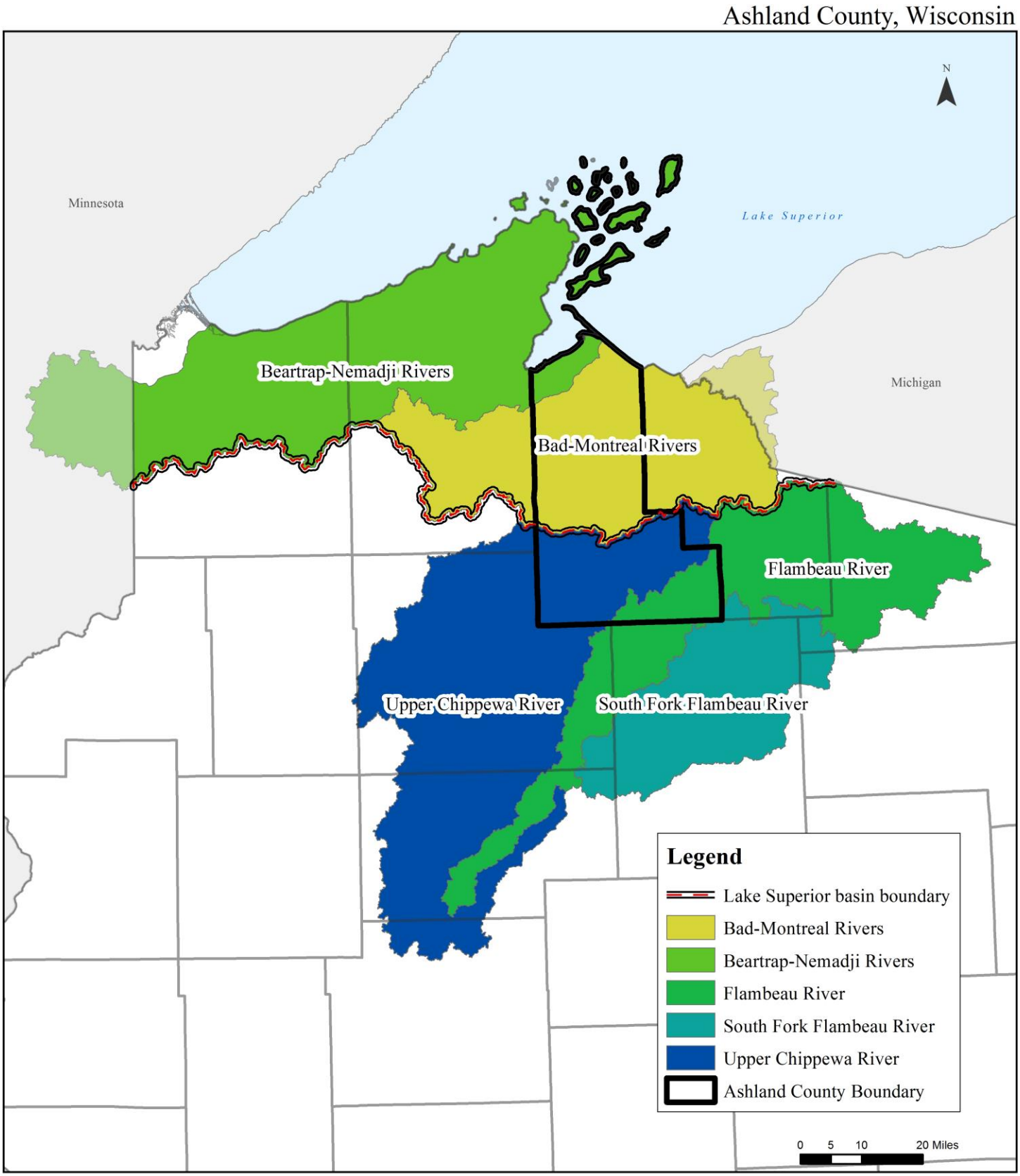

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Figure 3-12: HUC 10 and 12 Level Watersheds in Ashland County

Ashland County, Wisconsin

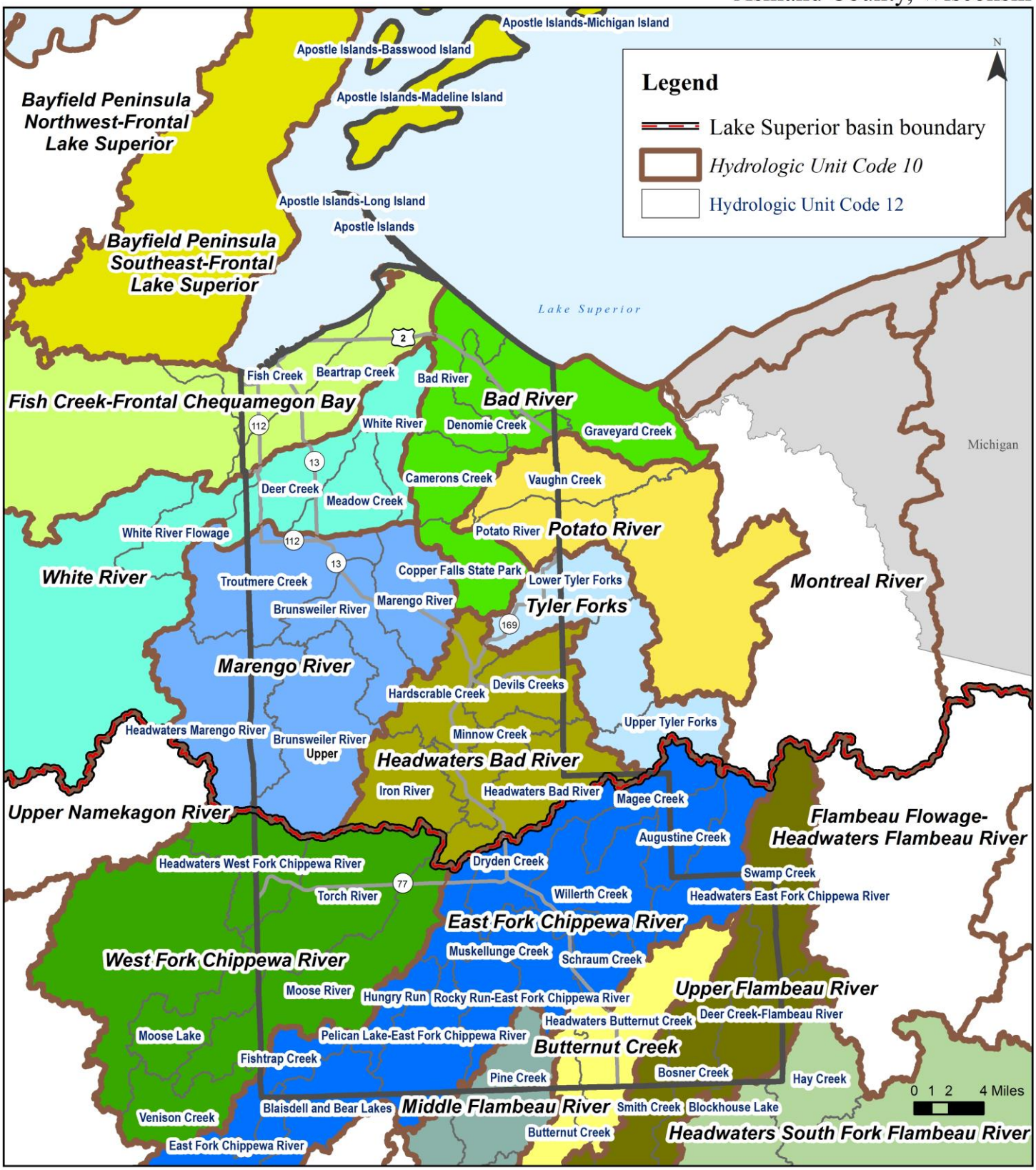

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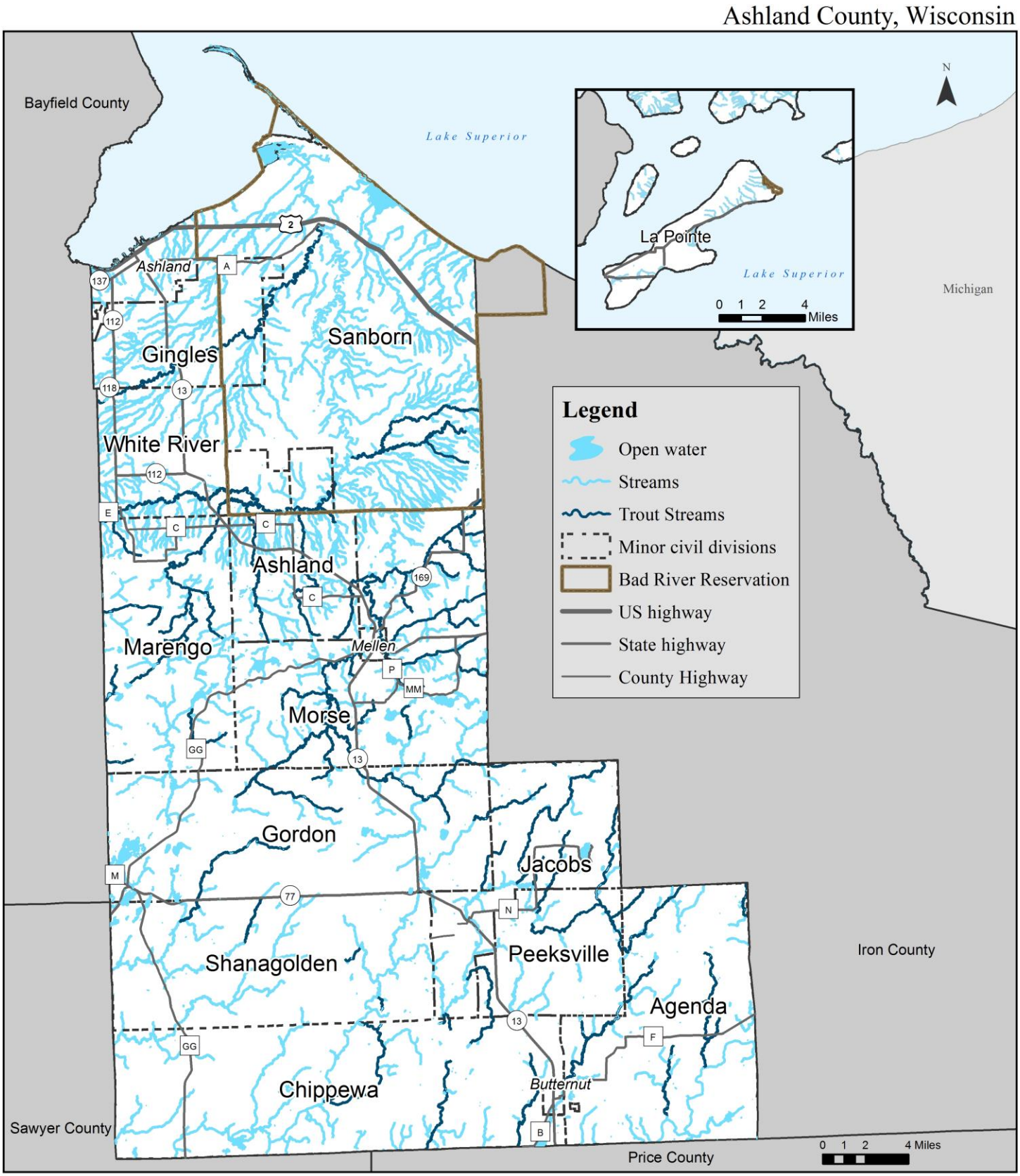
Figure 3-13: Surface Water Resources of Ashland County



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Impaired Waters

Impaired waters are those waters that are not meeting state water quality standards as defined by Section 303(d) of the federal Clean Water Act. Every two years, states are required to submit a list of impaired waters to the United States Environmental Protection Agency (USEPA) for approval. The Wisconsin Department of Natural Resources (WDNR) has submitted lists to the USEPA every two years from 1998 to 2016, except in 2000 when the USEPA did not require a list. The Clean Water Act requires each state to publish updated lists of streams and lakes that are not meeting water quality standards and designated uses. Designated uses are goals or intended uses for surface water bodies in Wisconsin in the categories of recreation, public health and welfare, wildlife, and fish and aquatic life. The designated uses are described in detail in Chapter NR102 of the Wisconsin Administrative Code. The draft 2016 303(d) impaired waters list (Table 3-6) contains the following sites in Ashland County. South Fish Creek originates in Bayfield County and enters Chequamegon Bay near the Ashland County line. It is shown on this list due to recent concern over existing high levels of phosphorus and other pollutants, and controversy surrounding a proposed swine CAFO. Because the 2016 list has not yet been approved by the USEPA, please consult the WDNR website for the most current information:

Table 3-6: 2016 Proposed 303(D) list for Ashland County

Waterbody	Pollutants	Impairments	Status
Bay City Creek	Total Phosphorus	Degraded Biological Community	Proposed for List
Chequamegon Bay - Ashland Coal Tar Site	PAHs	Chronic Aquatic Toxicity, Contaminated Sediment	303d Listed
Lake Superior - Maslowski Beach	Escherichia coli	Rec. Restrictions - Pathogens	Proposed for List
Lake Superior –Bayview Park Beach	Escherichia coli	Rec. Restrictions - Pathogens	Delisted 2012
Bear Lake	Mercury	Contaminated Fish Tissue	303d Listed
Black Lake	Mercury	Contaminated Fish Tissue	303d Listed
Butternut Lake	Mercury	Contaminated Fish Tissue	303d Listed
Butternut Lake	Total Phosphorus	Excess Algal Growth	303d Listed
Day Lake	Mercury	Contaminated Fish Tissue	303d Listed
English Lake	Mercury	Contaminated Fish Tissue	303d Listed
Gates Lake	Mercury	Contaminated Fish Tissue	303d Listed
Lake Galilee	Mercury	Contaminated Fish Tissue	303d Listed
Lake Three	Mercury	Contaminated Fish Tissue	303d Listed
Marengo River	Fecal Coliform	Rec. Restrictions - Pathogens	Proposed for List
Mineral Lake	Mercury	Contaminated Fish Tissue	Delisted 2012
Mineral Lake	Total Phosphorus	Impairment Unknown	Proposed for List
Moquah Lake	Mercury	Contaminated Fish Tissue	303d Listed
Potter Lake	Mercury	Contaminated Fish Tissue	303d Listed
Spider Lake	Mercury	Contaminated Fish Tissue	303d Listed
Spillerberg Lake	Mercury	Contaminated Fish Tissue	303d Listed
South Fish Creek (Bayfield Co.)	Total Phosphorus	Impairment Unknown	Proposed for List
Trout Brook	Fecal Coliform	Recreational Restrictions - Pathogens	Proposed for List

Fish Consumption Advisories

Wisconsin has been providing consumption advice on eating fish caught from all Wisconsin waters since 2001. Prior to that, advice was given only for specific surface waters. A publication from the Wisconsin Department of Natural Resources, *Choose Wisely – 2016: A Health Guide for Eating Fish in Wisconsin* (Pub FH-824 2016) outlines general consumption advisories for the state. Because fish from most waters contain mercury, statewide safe-eating guidelines provide the same advice for most inland waters.

Women of child-bearing age (under 50) and all children under 15

MAY SAFELY EAT:

1 serving per week: bluegill, crappies, yellow perch, sunfish, bullheads, inland trout
AND
1 serving per month: walleye, pike, bass, catfish, and all other species not listed here

DO NOT EAT: muskies

Women over 50 and men

MAY SAFELY EAT:

Unrestricted: bluegill, crappies, yellow perch, sunfish, bullheads, inland trout
1 serving per week: walleye, pike, bass, catfish, and all other species not listed here
AND
1 serving per month: muskies

In addition, there are special exceptions to the statewide safe-eating guidelines for locations where higher levels of contaminants have been found in fish. In Ashland County, these waters include Lake Superior for PCBs and mercury and the following inland lakes for mercury: Lake Three, English Lake, Moquah Lake, Spider Lake, Spillerberg Lake, and Butternut Lake. More restrictive guidelines for these waters can also be found in DNR publication FH-824 2016.

Wisconsin Beach Monitoring Program

In 2003, the Wisconsin Department of Natural Resources in cooperation with local, state and federal authorities, began implementation of the federal BEACH (Beaches Environmental Assessment and Coastal Health) Act of 2000. The BEACH Act is an amendment to the Clean Water Act requiring all coastal states, including Great Lakes states, to develop programs for effective water quality monitoring and public notification at coastal recreational beaches. The US Environmental Protection Agency has made grants available to participating states to develop and implement a statewide beach program. The WDNR offers grant support to communities along Lake Michigan and Lake Superior to monitor beach water for elevated Escherichia coli (E.coli) levels. This information helps the community health officials notify the public so beach visitors can make informed choices about how to use the beach. There are currently five City of Ashland and three Madeline Island beaches being monitored. Data on individual beaches is available on the Beach Health Site hosted by the United States Geological Survey, found here: http://www.wibeaches.us/apex/f?p=181:1:0::NO:::

Outstanding Resource Waters (ORW) and Exceptional Resource Waters (ERW)

In response to requirements of the Clean Water Act, Wisconsin adopted a new anti-degradation policy in 1989. Since that time, Wisconsin has identified outstanding and exceptional resource waters in the NR 102 of the Wisconsin Administrative Code. In 2006 the Wisconsin legislature approved additions to the list of ORW and ERW classifications. In Ashland County, 327 miles of stream segments retain these classifications (Table 3-7). ORWs receive the state's highest protection standards, with ERWs a close second. ORWs and ERWs share many of the same environmental and ecological characteristics. They differ in the types of discharges each receives, and the level of protection established for the waterway after it is designated. ORWs typically do not have any point

sources discharging pollutants directly to the water (for instance, no industrial sources or municipal sewage treatment plants), though they may receive runoff from nonpoint sources. New discharges may be permitted only if their effluent quality is equal to or better than the background water quality of that waterway at all times—no increases of pollutant levels are allowed. If a waterbody has existing point sources at the time of designation, it is more likely to be designated as an ERW. Like ORWs, dischargers to ERW waters are required to maintain background water quality levels; however, exceptions can be made for certain situations when an increase of pollutant loading to an ERW is warranted because human health would otherwise be compromised.

Table 3-7: 2016 Outstanding and Exceptional Water list for Ashland County

Waterbody Name	ORW/ERW	Start Mile	End Mile	Length (mi.)
Augustine Creek	/ERW	1.88	9.59	7.71
Bad River	ORW/	62.2	71.28	9.08
Bad River	ORW/	71.28	74.06	2.78
Bad River	/ERW	37.23	43.76	6.53
Bad River	/ERW	43.76	51.62	7.86
Bad River	ORW/	51.62	62.2	10.58
Bad River Slough	ORW/	N/A	N/A	N/A
Ballou Creek	/ERW	0.43	2.71	2.28
Beartrap Creek	ORW/	11.88	23.03	11.15
Bosner Creek	/ERW	3.63	4.61	0.98
Brunsweiler River	ORW/	21.56	24.4	2.84
Brunsweiler River	ORW/	26.17	29.54	3.37
Brunsweiler River	ORW/	10.38	11.37	0.99
Brunsweiler River	ORW/	14.01	15.38	1.37
Brunsweiler River	ORW/	11.37	14.01	2.64
Brunsweiler River	ORW/	0	1.02	1.02
Brunsweiler River	ORW/	9.54	10.38	0.84
Brunsweiler River	ORW/	19.8	21.56	1.76
Brunsweiler River	ORW/	4.2	9.53	5.33
Brunsweiler River	ORW/	2.82	4.2	1.38
Devils Creek	/ERW	0	7	7
East Fork Chippewa River	ORW/	13.57	32.42	18.85
East Fork Chippewa River	/ERW	32.83	52.23	19.4
East Fork Chippewa River	ORW/	63.5	74.07	10.57
East Fork Chippewa River	ORW/	52.22	63.5	11.28
East Fork Chippewa River	ORW/	0	1.33	1.33
Flambeau River	ORW/	71.84	121.84	50
Kakagon Slough	ORW/	N/A	N/A	N/A
Krause Creek	/ERW	0	6	6
Marengo River	ORW/	11.74	38.51	26.77
Marengo River	ORW/	39.25	53.25	14

Waterbody Name	ORW/ERW	Start Mile	End Mile	Length (mi.)
Pine Creek	/ERW	12.77	18.69	5.92
Spring Brook	/ERW	0	8	8
Troutmere Creek	/ERW	0	3	3
Tyler Forks	ORW/	0	1.72	1.72
Tyler Forks	ORW/	2.24	6.57	4.33
Tyler Forks	ORW/	1.72	2.25	0.53
Unnamed	/ERW	0	1.2	1.2
West Fork Chippewa River	ORW/	0	1.39	1.39
West Fork Chippewa River	ORW/	0	1.53	1.53
West Fork Chippewa River	ORW/	0	4.6	4.6
White River	/ERW	13.96	63.03	49.07

Groundwater

The source of drinking water for the City of Ashland is Lake Superior, but groundwater is the primary source of drinking water for most Ashland County residents, conveyed through private wells or municipal water systems. As with 70% of the state, the sand and gravel aquifer is the main source of groundwater. This aquifer includes primarily glacial deposits of unconsolidated sand and gravel. It is not a continuous layer, but rather is deposited in lenses or layers of sand and gravel interspersed with other fine-grained or low permeability deposits. As a result, well yields vary and depend primarily on the permeability and thickness of the sand and gravel at a particular location The Status of Groundwater Quantity Report (WDNR 1997) states that groundwater in general is abundant in Ashland County. Statewide there is a concern about the overall amount of water being removed from the aquifer and how it may affect the base flow of streams and water levels in our lakes and wetlands. While groundwater quantity problems occur naturally, they can be accelerated by human activities such as high capacity wells.

Extensive information about groundwater has been compiled in a web site developed by the UW-Extension Center for Land Use Education and the USGS Wisconsin Water Science Center titled *Protecting Wisconsin's Groundwater through Comprehensive Planning:*

http://wi.water.usgs.gov/gwcomp/

The purpose of the web site is to make Wisconsin groundwater information and data accessible and usable, thereby encouraging government officials and planners to incorporate groundwater into their comprehensive-planning processes. Comprehensive plans that adequately address the range of groundwater issues will play a very important role in protecting the groundwater resources of their communities and the state. Information specific to Ashland County can be found on the internet at the following address:

http://wi.water.usgs.gov/gwcomp/find/ashland/index_full.html

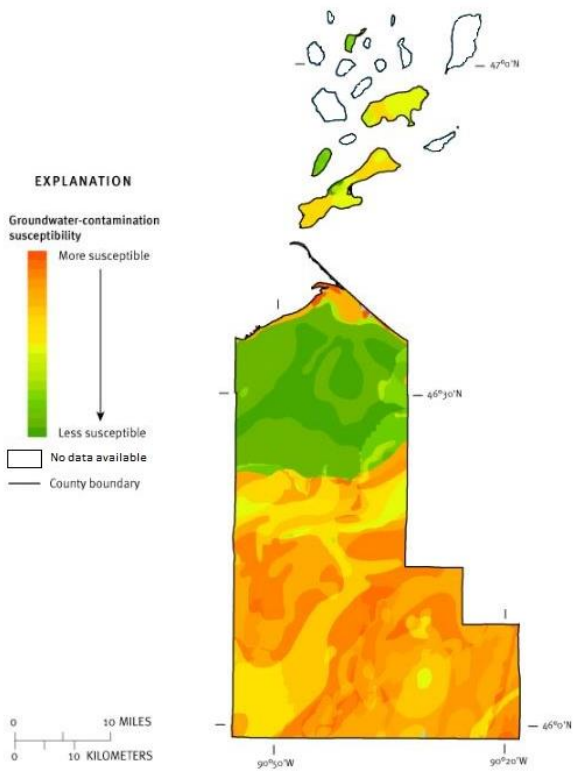
Some of the notable information concerning Ashland County groundwater from the USGS website includes:

- Ashland County has four municipal water systems – the Ashland Water Utility (Lake Superior source), the Butternut Waterworks, the Glidden Sanitary District, and the Mellen Water Utility. Of these systems, none have wellhead protection ordinances, and only the Butternut Waterworks has a wellhead protection plan for their wells.
- Ashland County has not adopted an animal waste storage ordinance that may help to protect the groundwater and surface water resources.

- As of May 31, 2007, over 8 million dollars ($514 per county resident) had been spent on petroleum cleanup from leaking underground storage tanks.
- From 1979 to 2004 (not including thermoelectric and mining use), total water use in the county increased from just over 3.2 million gallons per day to over 4.5 million gallons per day, due primarily to the increase in industrial use.
- Groundwater contamination susceptibility is generally low in the northern part of Ashland County, but moderately high to high in the southern part of the county, along the Lake Superior shoreline, and portions of the Apostle Islands including Madeline Island (Figure 3-14).

Misuse of pesticides and fertilizers, petroleum and hazardous waste spills, and illegal dumping are some of the threats to groundwater. Instituting wellhead protection plans and an animal waste storage ordinance are two methods that could be used to protect our groundwater. Failing that, using best management practices that prevent misuse and accidents can help prevent groundwater contamination.

Figure 3-14: Groundwater Contamination Susceptibility Analysis[19]



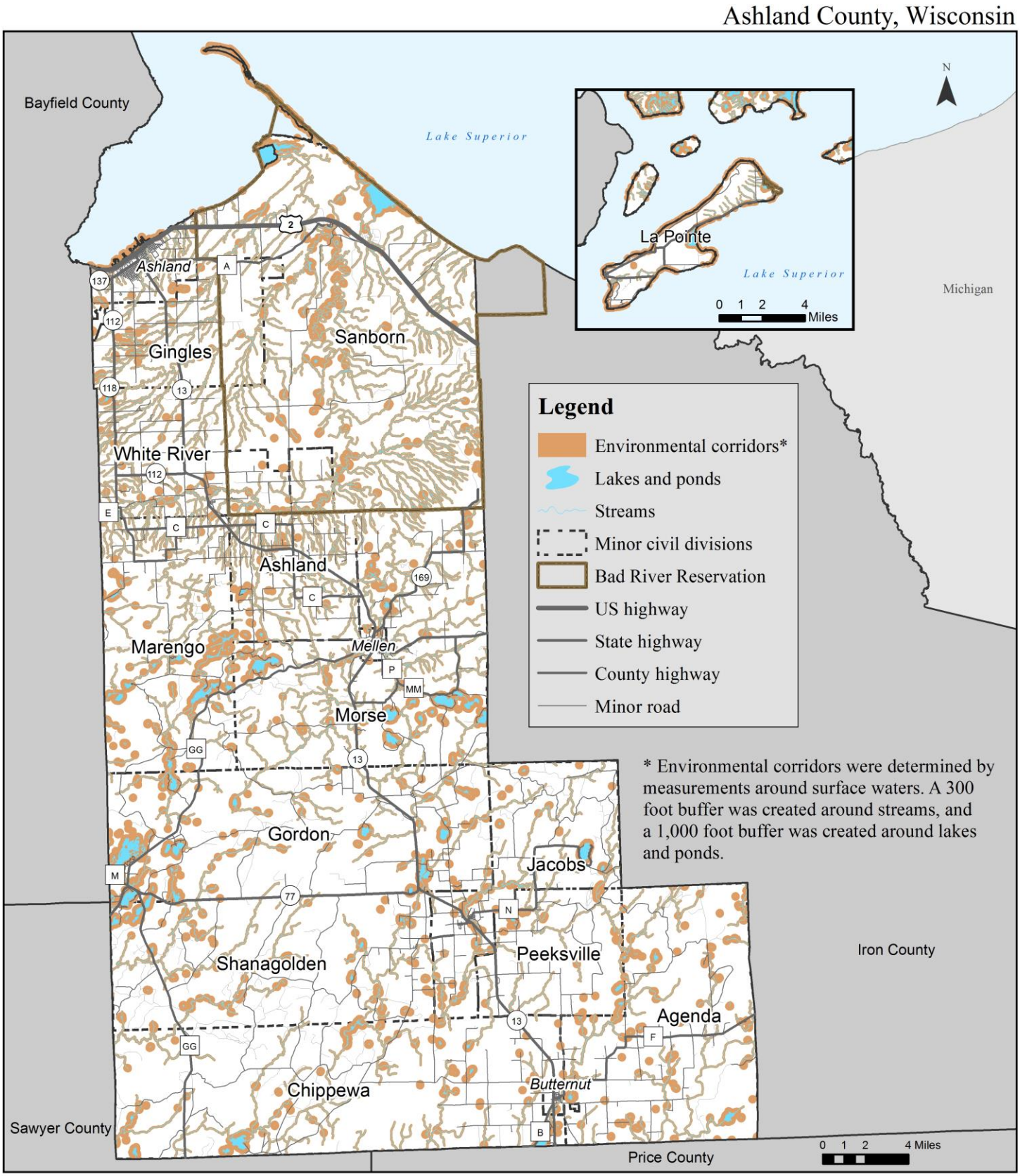
This groundwater-contamination susceptibility map is a composite of five resource characteristic maps, each of which was derived from generalized statewide information at small scales, and cannot be used for any site-specific purposes.

[19] Schmidt, R.R. 1987. Groundwater contamination susceptibility map and evaluation: Wisconsin Department of Natural Resources, Wisconsin's Groundwater Management Plan Report 5, PUBL-WR177-87, 27 pp. Figure Created for the "Protecting Groundwater through Comprehensive Planning" web site, 2007, *http://wi.water.usgs.gov/gwcomp/*

Riparian Areas

Riparian areas are lands in or abutting lakes, rivers or streams and open water wetlands. They have become ever more popular for residential building because of their natural scenic beauty and recreation and wildlife viewing opportunities. Shorelands, however, provide much more than desirable human habitat. Many aquatic and terrestrial animal and plant species depend on riparian lands to survive. Undisturbed riparian zones act as buffers by filtering pollutants before they enter surface water and control bank erosion by protecting soil from the impacts of wave action and runoff. Riparian protection can be accomplished through regulatory and voluntary efforts. In Ashland County, riparian areas serve as important environmental corridors that connect the rivers, streams, ravines, lakes, ponds, and wetlands. Figure 3-15 illustrates how buffers of 300' on either side of perennial streams and 100' around lakes form these critical habitat areas. When connected with the vast number of wetlands, intermittent streams, and wetlands, these environmental corridors form a truly impressive network of environmental corridors.

Figure 3-15: Riparian Areas and Environmental Corridors



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Wetlands

Wetlands are defined as areas where water is at, near, or above the land surface long enough to be capable of supporting aquatic or hydrophytic vegetation and contains soils indicative of wet conditions. Wetlands can be seasonal or permanent. There are 11 wetland community types identified in the Lake Superior area[20], and many of these occur within Ashland County. The community types are alder thicket, coniferous bog, coniferous swamp, fen, floodplain forest, lowland hardwood swamp, marsh, open bog, seasonally flooded basin, sedge meadow, and shrub carr. Wetlands can be found throughout Ashland County, and the wetland community types can be simplified to classify them as emergent wetlands and wet meadows, forested wetlands, and lowland shrub wetlands (Figure 3-16). The Wisconsin Wetland Inventory Maps (WWI) indicated that Ashland County had 168,388 acres of wetland or about 25% of the county. Ashland County's wetlands make up 3.1% of the state total.

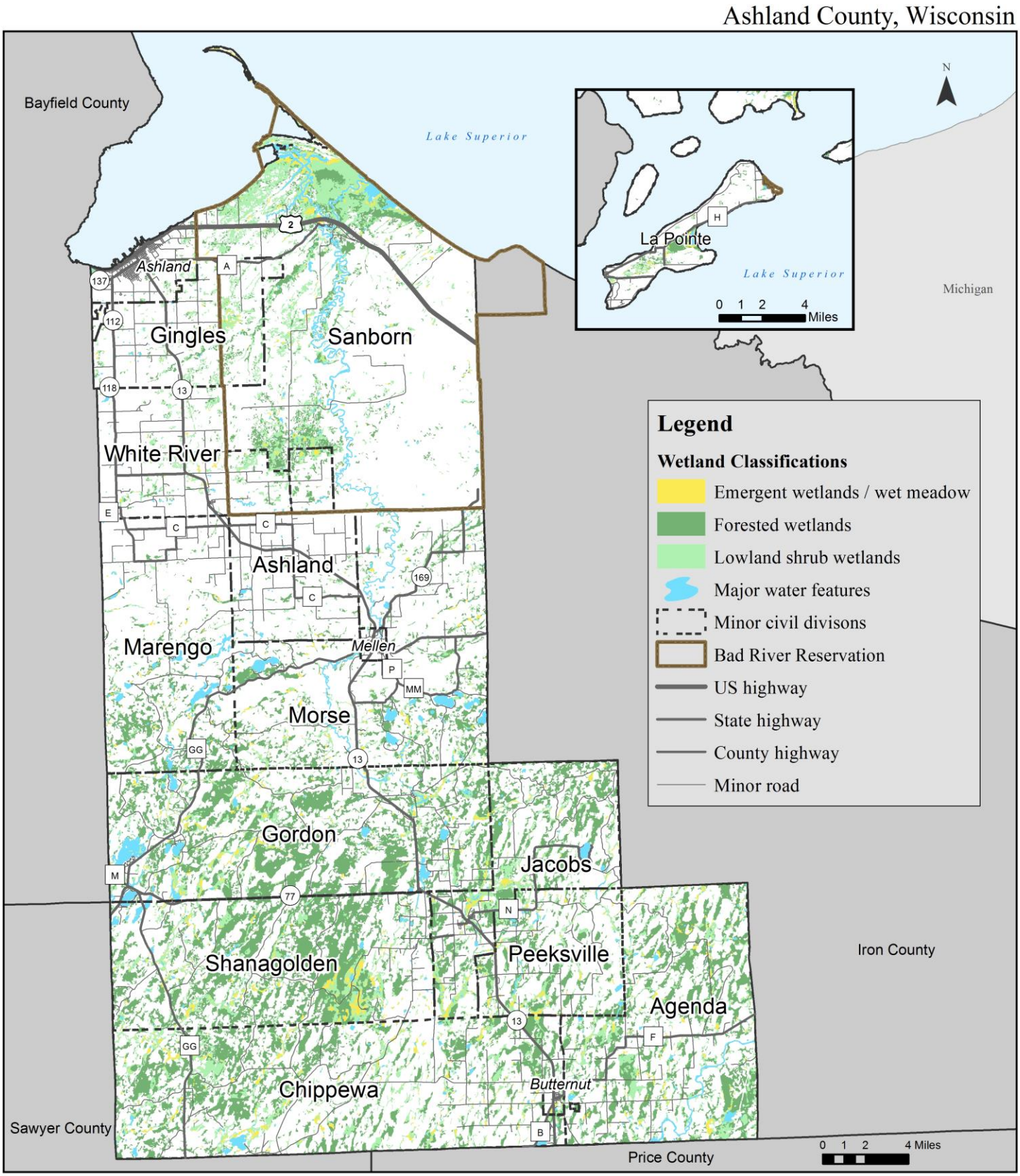
Historically, wetlands were thought of as wastelands, serving no particular function on the landscape. We now know that wetlands have many important functions and are considered the "kidneys" of a watershed. Wetlands filter pollutants before they enter surface and groundwater, provide critical habitat and increase habitat diversity for both fish and wildlife, reduce flooding by storing and slowly releasing water from rain and snowmelt, reduce peak stormwater flows, and serve as recharge and discharge areas for groundwater. Many rare, threatened and endangered species are found in wetlands. Draining and filling wetlands remove these valuable functions.

Priority wetland and aquatic sites in Ashland County have been previously identified by Epstein et.al. in 1997[21] The Wisconsin portion of the Lake Superior Basin contains rare coastal wetlands not found anywhere else in the entire basin, and the aquatic sites should be protected and managed to sustain and improve rare taxa or high species diversity. The priority wetland sites include Big Bay on Madeline Island, the Outer Island sandspit and lagoon, Stockton Island tombolo, Fish Creek slough, Long Island/Chequamegon Point, Bad River/Kakagon sloughs, White River, and Caroline Lake wetlands. In addition to the wetlands themselves, the WDNR has also classified many Ashland County tributaries as "wetland waters" – surface waters that are hydrologically connected to ecologically significant coastal wetlands of Lake Superior.

[20] Eggers, S.D. and D.M. Reed. 1997. Wetland Plants and Plant Communities of Minnesota and Wisconsin. (2nd Edition). U.S. Ary Corps of Engineers, St. Paul, MN.

[21] Epstein, E.J.., Judziewicz, E.J., Smith, W.A. 1997. Wisconsin's Lake Superior Coastal Wetlands Evaluation. Bureau of Endangered Resources, Natural Heritage Inventory Program. Wisconsin Department of Natural Resources. Madison. PUB ER-096 99.

Figure 3-16: Simplified Wetland Types in Ashland County



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Fish and Wildlife

Ashland County has large blocks of undeveloped public and private lands, abundant water resources, extensive wetlands, and access to Lake Superior. For these and many more reasons, fish and wildlife resources of the county are also extensive. Tourism and recreation related to fish and wildlife is an important economic driver for the county, and substantially defines the way of life for many residents. Hunting, fishing, trapping, and nature observation are popular activities for residents and visitors alike.

The Wildlife Damage Abatement and Claims Program (WDACP) assists farmers when wildlife damage their agricultural crops. The WDACP provides damage prevention assistance and partial compensation to farmers when wild deer, elk, bear, geese and turkeys damage their agricultural crops. DNR wildlife managers issue agricultural damage shooting permits to farmers for removal of deer - and occasionally bear, geese and turkeys - that cause damage. The WDACP is managed from the Ashland County Land and Water Conservation Department and serves the four Lake Superior counties. In Ashland County, most agricultural damage in recent years has been attributed to bears damaging corn fields.

Gathering

Gathering of branches, bark, berries, seeds, roots, shoots, nuts, and rocks is common in public and private lands of Ashland County. Regulations for gathering differ among public and tribal properties, and some regulations (such as the harvest of ginseng) apply to private lands as well. In Ashland County, the harvest of balsam fir boughs is popular, and there is a growing segment of the population that is harvesting decorative branches, fungi, lichens, and seed pods for profit. Wild rice has both ecological and cultural significance to the region. Ecologically, wild rice benefits a wide range of species because of the food, cover, or physical structure it adds to the environment. Culturally, wild rice, or *manoommin*, is a food that has long provided both physical and spiritual sustenance to the Ojibwe people. The Wisconsin Department of Natural Resources cooperates with Chippewa tribes to determine when rice on navigable lakes is ripe. A Natural Resource Harvesting Permit is required for all off-reservation ricing.

Threatened, Endangered and Sensitive Species

The list of Wisconsin endangered and threatened (E/T) species was developed in first in 1972 following enactment of Wisconsin's endangered species law. The list was created to restrict the taking, possession or marketing of species threatened with extinction from the state. Since 1972, the list has been revised 11 times, most recently in January 2014. The DNR's Natural Heritage Conservation Program policy recommends that the E/T list should be reviewed at every five years or earlier, as needed, based on changes in species population condition. However, because changes in a species status can occur more frequently, these changes are reflected in the state's Natural Heritage Working List, which is dynamic and is updated as new information becomes available. The Ashland County list of threatened, endangered, and "special concern" species and natural features can be obtained by querying the Natural Heritage Working List[22], and the county list as of May 13, 2016 is presented as Appendix 3-G. Perhaps of greatest interest to the agricultural community in Ashland County is the Federally Listed Endangered gray wolf (*Canis lupus*) which can kill livestock.

Invasive Species[23]

Concern about both aquatic and terrestrial invasive species has increased dramatically since the 2006 comprehensive plan, and the concern wasn't even mentioned in the 1982 Farmland Preservation Plan. In 2001 it was estimated that the expenses associated with ecological damage and control of invasive species

[22] http://dnr.wi.gov/topic/NHI/data.asp?tool=county
[23] http://dnr.wi.gov/topic/Invasives

is $137 billion per year and increasing.[24] Invasive species in Ashland County negatively affect agriculture, forestry, sport and commercial fishing, utilities, tourism, and recreation.

The Wisconsin Invasive Species Rule (Wis. Adm. Code ch. NR 40) makes it illegal to possess, transport, transfer, or introduce certain invasive species in Wisconsin without a permit. Everyone is responsible to comply with these regulations. What an individual, business, or organization needs to do to combat invasive species may vary depending on your type of work and activities. The NR40 administrative rule and concerns about gypsy moth, emerald ash borer, and oak wilt led to additional rules about firewood movement and use across the state and within state properties.[25] Wisconsin also has various boat transportation and bait laws in place to prevent the introduction and control the spread of aquatic invasive species and diseases in the state.[26] Interested stakeholders and user groups have been working with the DNR to develop voluntary best management practices (BMPs) to minimize the spread of invasive species in Wisconsin.[27] These guidelines include:

- BMPs for boat, gear, and equipment decontamination and disinfection
- Bait & Forage Importation BMPs
- AIS BMP Guidelines for Fire Suppression
- AIS BMPs for Dry Hydrant Maintenance
- Reasonable precautions for emerald ash borer
- Reasonable precautions to reduce the spread of gypsy moth
- Reasonable precautions to reduce the spread of Amynthas (jumping worm)
- Wetland Invasives Best Management Practices
- Forestry BMPs
- Recreational Forest User BMPs
- Urban Forestry BMPs
- Transportation and Utility Rights-of-way BMPs

In addition, interested recreational and forestry groups have been working to develop one page color handouts to educate their particular user group about BMPs for invasive species. The handouts developed so far include:

- for Equipment Operators
- for Hunters and Trappers
- for Anglers
- for ATV Users
- for Jeep Users
- for Outdoor Motorcyclists
- for Snowmobile Users
- for Jeep Users
- for Mobility Devise Users
- for Animal-Based Recreation (horses)
- for Bicyclists
- for Campers

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[24] Pimentel, D., S. McNair, J. Janecka, J. Wightman, C. Simmonds, C. O'Connell, E. Wong, L. Russel, J. Zern, T. Aquino and T. Tsomondo. 2001. Economic and environmental threats of alien plant, animal, and microbe invasions. *Agriculture, Ecosystems & Environment* 84(1): 1-20.

[25] http://dnr.wi.gov/topic/Invasives/firewood.html

[26] http://dnr.wi.gov/topic/Invasives/boat.html

[27] http://dnr.wi.gov/topic/Invasives/bmp.html

- for Arborists
- for Landscapers
- for Gardeners
- for Landscape Architects & Designers
- for Growers & Sellers

Locally, efforts to control the spread of invasive species has been shared among County, State, Tribal, and Federal governments; non-governmental organizations, and schools and colleges with varying levels of funding, expertise, and staff. The Northwoods Cooperative Weed Management Area[28] (NCWMA) is a collective group of state and federal agencies, municipalities, tribes, nonprofits, community organizations, and individuals who have come together to combat invasive species in Douglas, Bayfield, Ashland, and Iron counties in northern Wisconsin. Ashland County is a charter member of the NCWMA and continues to support their activities through the LWCD.

Recreation

Motorized and non-motorized recreation is discussed in the transportation section of the *2016 Comprehensive Plan Background Document* (Volume 1, Chapter 3). Some information on trails for cross-country skiing, hiking, biking, ATV/UTV, and snowmobiling can be found there. Recreational activities are important to residents and visitors alike, but brings with it both positive and negative impacts to the region. The positive economic and health benefits to the region cannot be understated but are difficult to measure. The downside of an active recreational county is increased potential for conflict between user groups (XC skiers and snowmobilers, for example) or between trail users and private landowners who provide access through their property. Increased recreational access can also lead to safety issues, trail erosion, disturbance to wildlife and sensitive habitats, and as a pathway for invasive species movement.

The Wisconsin Department of Natural Resources lists 28 public boat landings on inland lakes in Ashland County. There are another 4 public boat landings accessing Lake Superior within the county. In addition to the "official" boat landings, there are many more public access points for small watercraft from trails, beaches, and public roads. Access to public water from private residences, resorts, marinas, and businesses is extensive. The Lake Superior Water Trail covers more than 400 miles of diverse shoreline from the City of Superior to the Montreal River at the Michigan border in Wisconsin. Developed in conjunction with the Rivers, Trails and Conservation Assistance Program of the National Park Service, the trail is an ongoing effort to connect the 3,000 miles of shoreline that border Lake Superior along Minnesota, Wisconsin, Michigan and Ontario, Canada. It is quite apparent that water-based recreation is very popular in Ashland County and is an important part of the local economy and way of life. As mentioned previously, impacts to natural resources from recreation is also extensive and water-based recreation is no exception, potentially leading to erosion at access points, litter, oil and gas pollution, human waste, and the spread of invasive species.

[28] http://www.northwoodscwma.org/

LAND OWNERSHIP

Public Land

Ownership of land is an important factor in comprehensive planning and implementing a farmland preservation plan. Public lands in Ashland County are comprised of a mixture of Federal, State, County, and Town ownership. Public lands in Ashland County comprise over 46% of the land acres. The majority of these public lands are under Federal ownership, followed by County and State ownership. The approximate acreages of public lands are:

Chequamegon-Nicolet National Forest	181,813 acres
Ashland County Forest	39,843 acres
State of Wisconsin	39,514 acres
Apostle Island National Park	35,537 acres

The 39,514 acres of State of Wisconsin lands is comprised State Natural Areas (24,717 acres), Wildlife Management Areas (7,788 acres), State Parks and Trails (6,050 acres), State Forests (744 acres), Fish Management Areas (214 acres) and Rivers and Flowages (1 acre).

There is a small amount of Town-owned lands and other miscellaneous public land such as "School Sections" scattered throughout the county. Town-owned land is primarily used for town facilities such as administration buildings, community centers, garages, and maintenance shops. The city of Ashland has an extensive network of public parks and trails within the city limits, and smaller parks and public areas are found in Mellen, Butternut and some of the smaller "hamlets".

Tribal Land

The Bad River Band of Lake Superior Chippewa Tribes has a 125,000-acre reservation with 119,852 acres on the mainland in Ashland County, 110 acres on Madeline Island in Ashland County, and 5,038 acres in Iron County. Lands within the reservation boundary comprise 18% of the land acres within Ashland County. The mix of landowners within the tribal reservation boundary is complex with some lands owned by tribal members as allotments, some lands held in trust by the federal government, and some owned by non-tribal members. More information on natural resources, land ownership, and land use within the Bad River Reservation is contained in the tribe's Integrated Resource Management Plan (IRMP) currently undergoing revision. Some data are currently available through a series of interactive tribal planning maps [29]. According to the USDI Bureau of Indian Affairs, the "Tribal IRMP is a long range, strategic level, comprehensive plan which integrates the management actions applied to a tribe's natural resources and other resources of value." It is a tribal policy document, based on the vision the tribe has for its resources. The IRMP describes the types of management activities which are to be undertaken by tribal and BIA resource management personnel, and serves as the umbrella plan under which all resource planning and management activities are conducted."[30] Existing land ownership within the Bad River Reservation is displayed in the 2016 Comprehensive Plan in Chapter 7-107 as Exhibit 1.

Private Land

Privately-owned land comprises approximately 35% of the land base within Ashland County outside of the reservation boundaries. There are additional private lands within the reservation boundary, including over 15,000 acres enrolled in the Managed Forest Law (MFL) program (Table 3-5). Ownership of private lands is a diverse mix of farms, forests, and rural residential parcels; as well as cities, villages and hamlets. Large tracts of land are held by corporations with interest in mining and timber production.

[29] http://badriver-nsn.gov/tribal-operations/natural-resources/gis-maps/webmaps
[30] http://www.bia.gov/WhoWeAre/BIA/OTS/DFWFM/IRMP/index.htm

EXISTING LAND USE

The *2016 Comprehensive Plan Background Document* (Volume 1, Chapter 8) contains a description of existing land uses within the county and details land use issues of Local Supply and Demand, Waste Disposal and Contaminated Sites, Opportunities for Redevelopment, Development Factors, and Land Use Conflicts. Map 12 of the comprehensive plan background document provides a visual of the existing land use; however, data is not currently available for all parts of the county specifically within the City of Ashland and the Town of Sanborn. The City of Ashland is in the process of updating their comprehensive plan and the Bad River Band of Lake Superior Chippewa Tribes is in the process of updating their IRMP which will fill many of the data gaps in the Town of Sanborn.

WATERSHED MODELING

As part of the process to update the county's Farmland Preservation and Comprehensive Plan, the Ashland County Land and Water Conservation Department embarked on a project to characterize watersheds and identify probabilities and risks associated with excessive erosion and nutrient pollution. Due to the complexity of the watershed models, lack of critical data, and the challenges of maintaining skilled GIS specialists, watershed modeling must be considered a "work in progress". Work will continue on these watershed modeling efforts in the coming months, with the hope of providing the county and its regional partners with additional tools to predict impacts and prioritize watersheds for protection and restoration by implementing BMPs and other land use controls. The LWCD reviewed a large list of available models and began to focus efforts on four methods.

EVAAL[31] - Erosion Vulnerability Assessment for Agricultural Lands. This model could help managers prioritize areas which may be vulnerable to erosion and increased nutrient export, increasing the likelihood of locating fields where implementing best management practices (BMPs) will provide the greatest benefit to watershed conditions.

PRESTO[32] - Pollutant Load Ratio Estimation Tool. Primarily designed to provide industrial and municipal dischargers with a screening tool for adaptive management (NR 217.18 Wisconsin Administrative Code), the model compares the annual phosphorus loads estimated to arise from nonpoint and point sources within a watershed.

HWA[33] - Healthy Watersheds Assessment. A partnership between the Wisconsin Department of Natural Resources and the U.S. Environmental Protection Agency, the HWA provides a prediction of overall watershed health and watershed vulnerability. The maps and scores produced through this model are used to compare with other watersheds in the state.

SPARROW[34] - SPAtially Referenced Regression On Watershed attributes. Developed by the United States Geological Survey (USGS), this model relates spatially reference terrestrial and aquatic transport of contaminants with in-stream water quality measurements. SPARROW can be used to predict nutrient delivery to the outlets of inland watersheds, and more regionally to coastal waters including Lake Superior.

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[31] http://dnr.wi.gov/topic/Nonpoint/EVAAL.html
[32] http://dnr.wi.gov/topic/SurfaceWater/PRESTO.html
[33] http://dnr.wi.gov/topic/Watersheds/HWA.html
[34] http://water.usgs.gov/nawqa/sparrow/

VOLUME 3
FARMLAND PRESERVATION PLAN
Chapter 4 – Goals, Objectives, Policies and Actions

The Farmland Preservation Area in Ashland County was identified and designated in cooperation with local officials, stakeholders, and advisory groups, and substantially reflects the same area mapped in 1982. Maintaining or expanding agriculture in Ashland County relies on the landowner's ability to farm in areas with favorable conditions for supporting agricultural enterprises while minimizing conflict and disturbances with adjacent land uses. The purpose of the Farmland Preservation Area as described in 1982 remains the same today – to maintain agriculture as a viable industry in the county; to protect the county's farmland; and to accommodate development and recreational needs.

ISSUES, OPPORTUNITIES, AND TRENDS

The *2006 Ashland County Comprehensive Plan Policy Document Exhibit 3-1* listed issues and opportunities related to several planning elements. Additions to this list were developed from multiple meetings of the Ashland County Comprehensive and Farmland Planning Committee, Land Conservation Committee, and the Agriculture and Extension Education Committee during 2015 and 2016. Information from the agricultural land use survey, along with other comments from agricultural stakeholders and partners were used to validate or modify the committee observations, arriving at the following issues, opportunities, and trends most likely to affect agriculture:

<u>Issues and Concerns:</u>

Tax Base - Citizens want lower local property taxes
Housing – property "blight" apparent in communities and rural landscape
Transportation – road maintenance and heavy truck traffic
Transportation – increased recreational use of town roads (ATV/UTV)
Transportation – Inadequate agricultural transport network
Utilities and Community Facilities – waste management and broadband internet access are inadequate
Agriculture – loss of farmland, decline in the local farm economy, consolidation of farming operations, and conversion of working farms to hobby farms
Agriculture – Lack of support for small and "niche" farmers
Agriculture – Confined Animal Feeding Operations (CAFOs)
Natural Resources – Protect and improve the quality of the air, surface water, groundwater, wetlands, sensitive areas, and wildlife habitat
Natural Resources – Consider cumulative environment impacts of development on natural resources
Natural Resources – Need improvement of private land forest management
Natural Resources – Inadequate baseline data and method of sharing information
Economic Development – Decline in local farm and forestry economies
Land Use – Existing land use conflicts
Land Use – Loss of rural character
Land Use – Improper management and use of forest and agricultural land

<u>Opportunities</u>

Housing – Provide incentives for improvements and reduction of blight
Agriculture – Increase participation in conservation programs and projects
Agriculture – Increase agricultural education and technical assistance support for farmers
Agriculture – Tie zoning to farmland preservation. Develop a farmland preservation zoning ordinance.
Natural Resources – Develop nutrient management plans, manure storage ordinance, livestock siting ordinance and farmland preservation zoning ordinances

Economic Development – Potential for ecotourism exists

Land Use – Encourage alternative methods of growing food

General Trends

Demographics – aging population, declining household size, increasing poverty
Housing – growing percentage of absentee and seasonal ownership
Transportation – Farm equipment is getting larger and heavier requiring wider roads, heavier construction and increased maintenance
Transportation – Recreational vehicle use is growing and machines are getting larger and faster
Utilities and Community Facilities – precision agriculture (field mapping, satellite imagery, drones, variable rate fertilizer application, etc.) is growing in the industry requiring better access to broadband internet and cell phone coverage
Agriculture - Number of farms will decrease, while farm sizes increases
Natural Resources – Pressure on use of natural resources is growing from all sectors
Natural Resources – Climate change will affect the Chequamegon Bay area greater than the rest of Wisconsin with more frequent, intense, and extreme storm events
Economic Development – increasing poverty
Land Use – Increased encroachment of incompatible land uses
Land Use – Value-added agriculture and agro-forestry endeavors are increasing

Agricultural Enterprise Trends and Futures

Production of agricultural commodities in Ashland County has historically centered on beef, dairy, and mixed hay forage. Due in large part to incomplete data and under-reporting, production trends in recent years are unclear. Undoubtedly there are fewer farms in the county now than there were during the peak of agriculture, and in more recent years there has been a shift from dairy operations to beef production. During the period 2004-2014, the number of milk cows and the number of all cattle and calves remained the same, while the acres of corn, alfalfa and other hay varied considerably (Table 3-3). We anticipate that there will be slight increases in dairy and beef production in the next 15 years, and the production of corn, alfalfa, and mixed hay is likely to remain variable. There has been an increase in the number of grass-fed beef operations over the past 10 years, resulting in improved heifers and bulls for managed intensive grazing. There has also been an upswing in the number of acres planted for cash crops, oilseeds, and biofuels, and the increase in production of these commodities is largely due to increased investments in tillage, fertility, and machinery. Nutrient management planning continues to be an emphasis for the county, but voluntary participation in the program is waning as most of the proactive farmers have implemented plans. The region has seen a dramatic increase in the number of "high tunnels" in the past few years, and we anticipate that these structures will continue to proliferate, providing growers the opportunity to greatly expand production and availability of vegetables and herbs. Improvements to farm infrastructure through construction of access roads, crossings, livestock watering and fencing and increased manure storage have facilitated increased efficiencies and production on many farms while protecting water quality. However, declining cost-share funds from DATCP threaten to reduce farmer participation in this program potentially leading to reduction in farm improvements and increased water quality impacts. It remains to be seen if establishment of the Fields, Waters and Woods AEA and participation in the Farmland Preservation Program will lead to increased innovation and development of agricultural enterprises.

The supply and availability of agricultural commodities other than beef and dairy in Ashland County is largely weather dependent. The proliferation of high tunnels has greatly increased the growing season and also increased efficiencies for watering, weeding, and pest control. Most dairy and beef farmers attempt to grow the majority of the forage and grains needed to feed their herds, reducing the need to

import feedstock. Supply and availability of hay exceeds the demand in most years. Due to the high percentage of rented land and high cost of moving equipment to harvest small fields, many hay fields are sporadically cut. In recent years, development of a hay producer's network and emergence of hay brokers has stabilized the supply, allowing some hay to be properly stored and sold when needed.

Processing of agricultural goods in the region in minimal. Two small meat markets in Ashland County buy small numbers of beef cattle and swine for butchering and creation of sausage, bacon, and jerky in addition to selling cuts and whole animals. At this time, there are no processors certified to handle organic beef, resulting in animals being shipped over 100 miles for cutting and wrapping before being returned to the producer. Although there are several farms with upgraded milk parlors, all milk being produced in Ashland County is collected and shipped out to cheese and milk plants elsewhere. Likewise, most beef being produced in the county goes to the large slaughterhouses in the state. Other processing occurring in the county or surrounding area includes creation of bird seed and wildlife food plot mixtures, seed mixtures for erosion control and other specialty uses, and compressed straw pellets for animal bedding and soil amendments.

Storage of agricultural products in Ashland County is minimal. As mentioned previously, there are a couple of seed companies that mix and store products to sell locally or through the internet. There are very few storage silos left in the county, with most farmers baling hay or storing haylage and corn silage within plastic tubes. In addition, because so little dry storage is available for hay bales, many farmers are using bale wrap products to extend the "shelf life" of their products. Unfortunately, despite the benefits of using these temporary storage techniques, the additional cost of producing the product (purchase of bale wrap, specialized equipment, disposal of waste plastic) may exceed the value. One hay broker in nearby Bayfield County has invested in buildings to store dry hay bales for future sale when markets are favorable.

Transportation and distribution of agricultural products to and from the county is challenging. Historically most of the commodities were moved by rail or water, but these days almost everything is moved by truck. Imports of feed, fertilizer, lime, and building supplies rely on trucking, as do the exports of manure, finished products, young animals and breeding stock. Reliance on a road network subjected to seasonal load restrictions, dissected by numerous streams and ravines, and maintained by local road crews adds lots of uncertainty. This uncertainty has led several producers to begin devising plans to pump and inject liquid manure during times when road travel is restricted. There is a strong and growing movement to produce more goods locally that are consumed locally. These efforts are supported through a series of programs, projects, cooperatives, and institutions. The Bayfield Regional Food Producers Cooperative, South Shore Meats, and the Lake Superior Community Supported Agriculture all distribute products independently through mail order and internet sales, through the local food cooperative, or by supplying local schools and Northland College. Programs to encourage local food production and consumption are supported by the "Bayfield Shores Harvest Trail", "Buy Local, Buy Wisconsin", and the "Farms to Schools" initiatives. Efforts to increase food security, quality, and availability is also on the increase on the Bad River reservation with several programs devoted to these efforts.

A proposal for a 6,162 animal-unit hog farrowing operation in adjacent Bayfield County is under review by the Department of Natural Resources as they prepare an Environmental Impact Statement (EIS). This farm, if approved, will become the first CAFO for Bayfield County and the largest hog CAFO in Wisconsin. Development of this large farm less than 10 miles from Ashland County is likely to influence many aspects of future agricultural development.

AGRICULTURAL GOALS, OBJECTIVES, POLICIES, AND ACTIONS

The *1982 Ashland County Farmland Preservation Plan* identified four goals and associated policies. The goals were:

1. Preservation of agricultural lands. Ashland County would work to preserve and protect lands most suitable for agricultural use and production, and to ensure that farmers qualify for farmland preservation tax credits.
2. Urban Growth. Ashland County would help guide physical growth and development in a manner that does not jeopardize existing and potential agricultural lands.
3. Environmental/Cultural. Preserve the county's designated cultural, scenic, and environmental resources.
4. Provision of Public Facilities. Provide public facilities that most efficiently and effectively meet overall goals of the Farmland Preservation Plan and other plans and programs adopted by the county.

The *2006 Ashland County Comprehensive Plan* identified goals, objectives, and action items related to agriculture and natural resources

GOAL #4 – AGRICULTURE: Preserve the County's agricultural land base to protect the County's aesthetics, rural character, and agricultural heritage for future generations.

OBJECTIVES:

1. Maintain the operation of existing farms.
2. Encourage the preservation and protection of agriculturally productive soils.
3. Decrease non-point water pollution.
4. Increase the number of acres of agricultural land that is voluntarily protected through conservation easements.

ACTION ITEMS:

1. Identify options for preservation and development of sustainable agriculture in the County.

2. Study the feasibility of and support for establishing a purchase of development rights (PDR) program.

GOAL # 5 – NATURAL RESOURCES: Preserve and protect the County's natural resource base from potential degradation and contamination.

OBJECTIVES:

1. Encourage the preservation and protection of environmental corridors for wildlife, water quality values, and habitat protection.
2. Increase collaboration with watershed associations.
3. Increase protection of the surface and groundwater resources.
4. Maintain the natural beauty of the County's roadways and scenic views.
5. Maintain and encourage the sustainable use and development of natural resources.

ACTION ITEMS:

1. Work with the Towns to develop guidelines to maintain forest buffers along roads.
2. Complete the inventory of hydrogeology and soils in the county.
3. Review and update the inventory of hydrogeology and soils in the county.

The *2016 Ashland County Comprehensive Plan Vision and Goals Document* (Volume 2, Chapter 2) includes Goals, Objectives, and Action Steps concerning the required planning elements of housing,

transportation, utilities and community facilities, agriculture, natural resources, cultural resources, economic development, intergovernmental cooperation, land use, and plan monitoring and evaluation. The Comprehensive Plan and Farmland Preservation Plan Committee reviewed the 2006 Comprehensive Plan Goals and Objectives in light of data amassed in the updated background sections. Many of the updated Goals were determined to be similar or identical to the 2006 Goals. Objectives include revised and new items, and Action Steps are largely new, recognizing that some of the Action Steps identified in 2006 have been completed or are no longer relevant. The Comprehensive Plan and Farmland Preservation Plan Committee color coded the Objectives for each Goal based on a wide range of urgency or timeliness with green representing Objectives currently being met to an adequate degree, yellow representing those Objectives that could use additional support, and red for Objectives that are currently not being met. Realizing that there are more Action Steps than the county has the capacity to implement, the Comprehensive Plan and Farmland Preservation Plan Committee undertook an exercise to prioritize the steps with the hope that as top priority steps are completed then lower priority steps can be taken.

The Goals, Objectives, and Action Steps for Agriculture and Natural Resources are repeated here, along with Goals, Objectives and Action Steps from other required comprehensive planning elements that are most relevant to agriculture, farmland preservation, and natural resources. Analysis of public comments, survey results, and careful review by County Staff and the Comprehensive Plan and Farmland Preservation Plan Committee resulted in minor modifications, addition, and re-prioritization of Objectives and Action Steps.

Agriculture Goal: Preserve the County's agricultural land base to protect the County's aesthetics, rural character, and agricultural heritage for future generations.

Agriculture Objectives:

a. Prepare ordinances to protect land, water and air quality in advance of potential increase of industrial agriculture in the county. (e.g. manure storage, CAFOs, etc.)

b. Encourage and support economically sustainable small farms and farmers, including the next generation of farmers.

c. Supply: Promote local food production and value-added agricultural products to increase the availability of fresh, healthy and culturally relevant food for all residents and decrease the distance food travels from farm to fork.

d. Demand: Promote increased purchases of local and regionally produced food.

e. Support existing, and the creation of new, agriculture-related infrastructure in the county such as a food processing facility.

f. Support the operation of existing farms and encourage the creation of new farms

g. Enhance the preservation and protection of agriculturally productive soils

h. Minimize water pollution and erosion from farmland in Ashland County

i. Increase the number of acres of agricultural land that is voluntarily protected through farmland conservation programs

Agriculture Action Steps:

- Increase funding to the Land and Water Conservation Department and UW-Extension to adequately meet the needs of agricultural resources in the county, & hire a full-time County Agricultural Agent Fully enable county conservation department to work on agriculture-related issues
- Explore ways of creating and supporting new and existing community gardens, farmer's markets, produce stands and other county-based local food projects

- Reinvigorate local food group (see economic development objectives)
- Engage and support local organizations working towards building agriculture-related infrastructure
- Adopt a manure storage ordinance to manage the creation of new manure storage facilities, proper closure of unused or unsafe manure storage structures, and implement agricultural performance standards of NR 151
- Adopt a livestock citing ordinance for new or expanded livestock facilities of 500 or more animal units, which may include operational controls to ensure protection of surface water, ground water, and human health and safety
- Amend the Ashland County zoning ordinance to classify farmland preservation zoning within designated Agricultural Enterprise Areas (AEAs)

Natural Resources Goal: Preserve and protect the County's natural resource base from potential degradation and contamination

Natural Resources Objectives:

a. Increase collaboration with local or regional organizations and with the Bad River Tribal Government and other tribal entities to increase the protection of natural resources
b. Encourage the preservation and protection of environmental corridors for wildlife, water quality values, and habitat protection
c. Encourage the sustainable use and development of natural resources
d. Use education to protect natural resources and to encourage development that is supportive of the natural resource goal. (example: low density lake development)
e. Encourage the sustainable harvest of forest products (see economic development)

Natural Resources Action Steps:

- Encourage a fully staffed Land Conservation Committee and Forestry Committee as well as increase funding of the Land and Water Conservation Department and the Forestry Department
- Identify stakeholders and issues and host an annual meeting
- Research and develop agricultural ordinances that help reduce the risk of water quality degradation and loss of wildlife habitat

Economic Development Goal: Develop and maintain a strong economy that supports residents and the community with services, opportunities, and amenities consistent with the County's rural character.

Economic Development Objectives:

a. Increase initiatives for early childhood development in the County recognizing that research shows that this contributes to a successful workforce.
b. Open up the County budgeting process to engage all members of the County Board.
c. Improve county infrastructure including broadband, cell service, roads, railroads, energy, housing and county facilities in order to make the county a more attractive and desirable community in which to live and start or grow a business.
d. Develop and implement a plan for retaining and attracting young people to live and work in the county.
e. Plug the leaks – reduce the amount of local financial and human resources that leave the county, especially related to food and energy (this refers to the graphic depiction of resources leaving the county that is on the last page of the economic development chapter in Volume 1).

f. Encourage economic development throughout the county to increase the tax base.
g. Promote and leverage the county's assets (natural resources, human resources, social and political resources) toward development of a more robust county economy.
h. Provide education to promote energy efficiency and renewable energy that leads the county toward energy independence, and assist in finding incentives for citizens and businesses to employ efficiency and renewables.
i. Promote greater utilization of county forestry products and value added production including traditional products like pulp and lumber but also things like maple syrup and seasonal decorations.
j. Provide support and incentives for agricultural producers to start and/or maintain sustainable family farms.
k. Provide maintenance and expansion of the tourism industry in the county.
l. Ensure there is adequate support for entrepreneurs as well as existing businesses so they can thrive in the county and provide stable living wage jobs.
m. Help build the local demand for locally produced food and forest products.

Economic Development Action Steps:

- Hire a grant writer to assist in achieving the above objectives
- Create partnerships with local municipal governments and economic development agencies to assist in economic development efforts
- Schedule an annual County budget retreat
- Convene a county-wide task force to research opportunities and develop a plan for achieving the objectives listed above
- Establish a standing committee of the County Board charged with promoting community and economic development (underfunded mandates, ease of business, early childhood development)

Land Use Goal: Support a land pattern that facilitates the growth of cities, villages and hamlets and the protection of forests and agricultural lands.

Land Use Objectives:

a. Minimize the negative effects of incompatible land uses
b. Minimize conflicts between forest and non-forest related uses as well as between agriculture and non-agriculture related uses
c. Maintain the integrity and viability of forestry and forestry-related practices
d. Maintain a well-balanced mix of land uses within the County including commercial and industrial
e. Support the Land and Water Conservation Plan
f. Ensure sound land use planning utilizing current technology such as Geographic Information Systems (GIS)
g. Publish an up-to-date plat book on a continuous basis

Land Use Action Steps:

- Continue to amend the County's zoning regulations, as needed, to ensure they implement this plan and the comprehensive plans of the 13 towns
- Maintaining up-to-date mapping of forestry-related practices in the county to minimize future land use conflicts
- Continue to amend the County's land division regulations, as needed, to ensure they implement this plan and the comprehensive plans of the 13 towns

Plan Monitoring and Evaluation Goal: Keep this comprehensive plan relevant, useable, and timely

Plan Monitoring and Evaluation Objectives:

a. Keep the plan up-to-date, relevant and as a guiding/driving document in county operations

Plan Monitoring and Evaluation Action Steps:

- Responsibility of committee chairs, department heads and County Administrator to prepare a collaborative report and conduct a yearly meeting to evaluate and update the comprehensive plan
- Conduct a more comprehensive review five years after adoption to evaluate changes and progress in lieu of the annual County Board Retreat
- Monitor the key indicators of growth (housing starts, average age and per capita income of county residents, business start-ups, business and farm closures, assessed value, sales tax, school attendance, etc.) on a yearly basis to be presented at the annual meeting on plan evaluation and progress
- Ensure continuity in plan monitoring and implementation through education and transition in committee and workforce

FARMLAND PRESERVATION AREA MAPPING CRITERIA AND RATIONALE

The farmland preservation area for Ashland County was identified and mapped in cooperation with local officials, stakeholders and advisors. The ability of Ashland County landowners to continue farming in areas with favorable conditions for supporting agriculture requires minimizing conflict and disturbances among current and future land uses. The purpose of the Farmland Preservation Area is to:

- Preserve productive agricultural lands for the long-term
- Preserve the rural character and aesthetic quality of Ashland County
- Minimize non-agricultural development within productive agricultural areas
- Maintain and increase landowner eligibility for farmland preservation incentive programs such as tax credits.

Designating a farmland preservation area in Ashland County began with the Land Conservation Committee developing and approving a draft rationale. A number of test maps were produced and suggested changes and clarifications were presented to the Ashland County Comprehensive Planning and Farmland Preservation Committee for review and approval. Because Ashland County does not have agricultural zoning and the county Comprehensive Plan completed in 2006 did not address farmland preservation there is a need to revise and/or amend substantial portions of the text and maps for both the Comprehensive Plan and the Farmland Preservation Plan. Ashland County has not experienced the high level of farmland conversion and non-agricultural development that other Wisconsin counties have, so the focus of this planning process was to identify ineligible lands and parcels incompatible with agricultural use (currently or within the next 15 years). The following tenets were used to guide development of the mapping criteria so that they could be applied consistently across the county:

- Whether soils are suitable for agricultural production
- Whether the land is currently used for agricultural use or agricultural-related use
- Whether the land is in undeveloped natural resource or open space areas that connect other farmland parcels to create large, uninterrupted blocks of preserved area
- Whether the land is located in an area currently planned for development in the next 15 years.

The lands to be planned for farmland preservation purposes have been identified as the "Farmland Preservation Area" on the Ashland County Farmland Preservation Area Map (Figure 3-17). All other areas were left blank to identify "Non-Farmland Preservation Areas" or "Exclusion Areas" on these maps. Every effort was made to include as many Farmland Preservation Area acres as possible to maximize the

potential landowner participation in programs to preserve agricultural lands. The following mapping criteria were used to depict tax parcels to include in the farmland preservation area and parcels to exclude.

Farmland Preservation Mapping Criteria

Ashland County Farmland Preservation Area Map (Figure 3-17) identifies Farmland Preservation Areas (FPA) at the tax parcel level and total 284,031 acres. Non-agricultural development is not planned in these FPA areas within the next fifteen years. The FPA maps are also presented as a series of maps for each minor civil division within the county as Appendix 3-H. The minor civil division maps were produced at a scale of 1:24,000. At this level of detail, most townships can be printed on a 22"x 33" sheet, although several large towns need to be split into multiple maps.

Excluded from FPA

- Lands planned for nonagricultural development within the next 15 years.
- Lands within municipal boundaries or sanitary district of the City of Ashland, City of Mellen, Village of Butternut, and communities of Glidden and Marengo unless the tax parcel is 5 acres or greater in size or part of contiguous ownership that includes at least 40 acres of agricultural land.
- Tax exempt private land and public land.
- Lands within the boundaries of the Bad River Indian Reservation unless the taxable parcel is 5 acres or greater in size or part of contiguous ownership that includes at least 40 acres of agricultural land.
- Tax parcels less than 5 acres in size unless it is part of contiguous ownership that includes at least 40 acres of agricultural lands.
- Lands zoned for uses that are incompatible with agriculture in the Town of LaPointe and the City of Ashland.

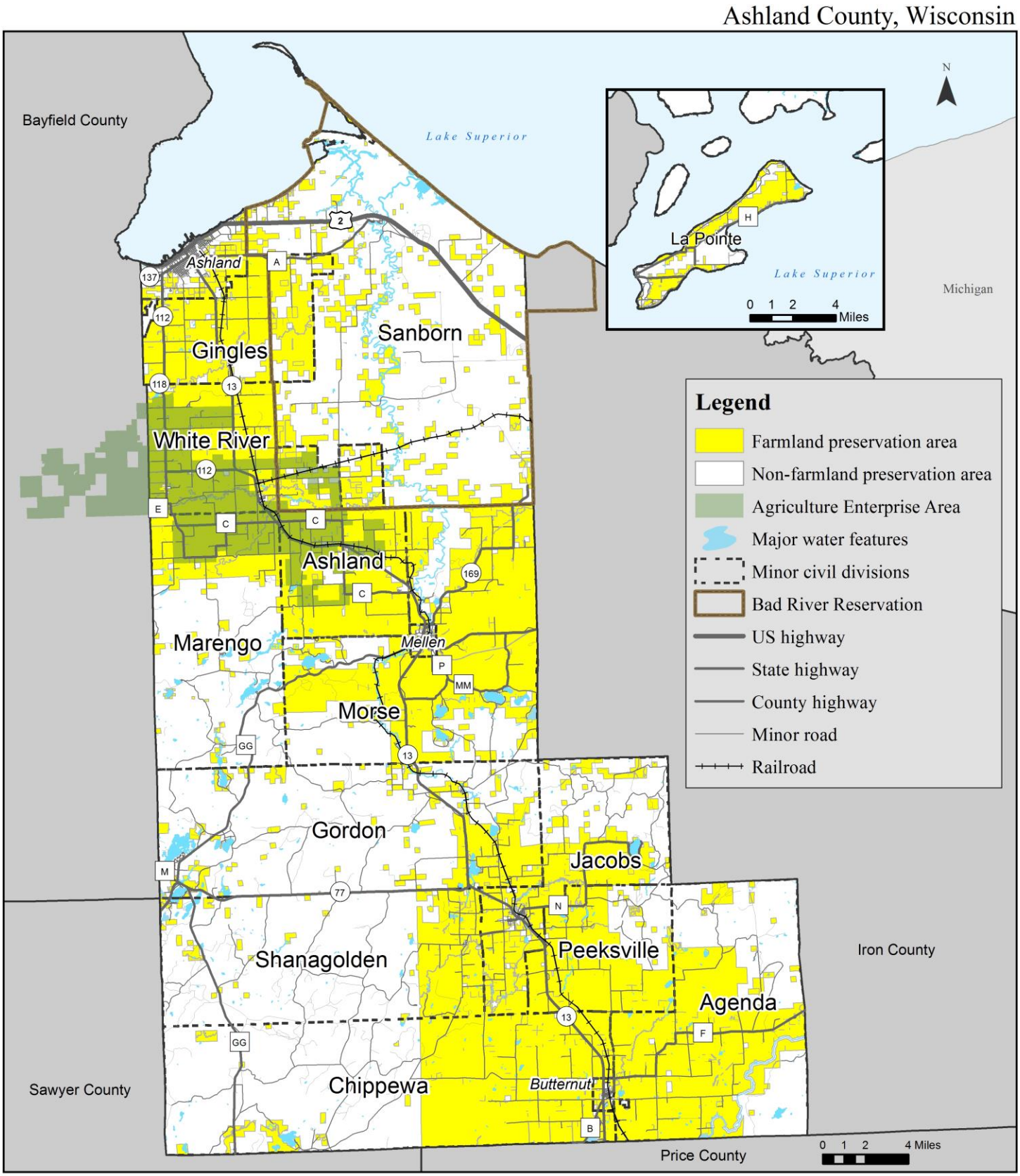
Included in FPA

- All soils listed as prime agricultural (Prime Farmland, Farmland of Statewide Importance, Farmland of Local Importance, and Prime Farmland if Drained) not otherwise excluded.
- Existing private land uses of agriculture, farmstead, open lands, and woodlands not otherwise excluded.
- Lands within the Fields, Waters and Woods Agricultural Enterprise Area (AEA) not otherwise excluded.[35]
- Privately-owned environmental areas along ravines, intermittent and perennial streams, lakes, and wetlands not otherwise excluded if the tax parcel is 5 acres or greater in size or part of contiguous ownership that includes at least 40 acres of agricultural lands.

Should inaccuracies or inconsistencies between the Farmland Preservation Area Map and maps from the Ashland County Comprehensive Plan arise, the Farmland Preservation Area Map shall supersede and the county shall take the necessary steps to amend the appropriate maps.

[35] Application of consistent Farmland Preservation Area mapping criteria resulted in identifying parcels within the AEA that should be removed because they are too small or are tax-exempt. The AEA boundary will be amended to reflect these changes after the Farmland Preservation Plan is certified.

Figure 3-17: Ashland County Farmland Preservation Area Map



Funded in part by:

This map is neither a legally recorded map nor a survey and is not intended to be used as one. This drawing is a compilation of records, information and data used for reference purposes only. Ashland County is not responsible for any inaccuracies herein contained.

Created by:
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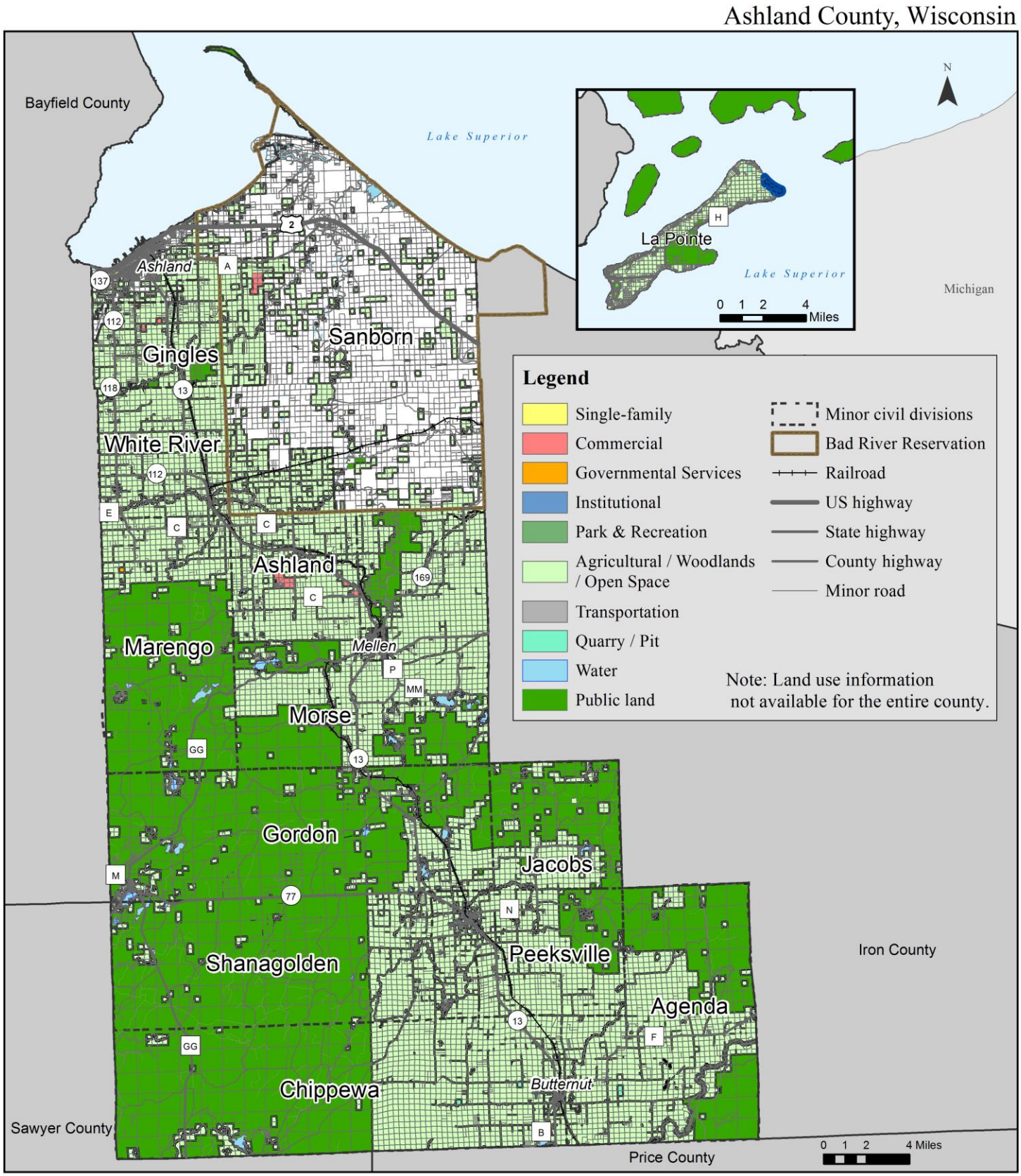
Ashland Co. Land & Water Conservation Department
09/22/2016

FUTURE LAND USE

The *2016 Ashland County Comprehensive Plan Background Document* (Volume 1, Chapter 11) includes plan based forecasts concerning population, housing, employment, and land use. The *2016 Ashland County Comprehensive Plan Vision and Goals Document* (Volume 2, Chapter 3) contain maps of future transportation plans and an updated future land use map (Figure 3-18). The plan based forecasts guided development of the future land use map and resulted in few substantial changes from the 2006 map. The most notable changes from 2006 are the identification of public lands because they comprise a large portion of the county and are generally not open to development; and a standardization of the mapping elements to be consistent across all municipalities in the county. The future transportation map includes the addition of several trails in the county.

Figure 3-17: Ashland County Future Land Use Map



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This chapter identifies a variety of tools and programs available for landowners to preserve their farmland for future generations of productivity, outlines how progress will be measured and monitored, and how to revise the plan when conditions change. The Ashland County Farmland Preservation Plan and the Comprehensive Plan should be fundamentally consistent with each other; and periodic monitoring, review, and updates will be necessary to ensure that consistency.

Educating the public and local government agencies about the economic benefits of farming and the cost of converting farmland to non-agricultural use is an important part of the implementation strategy. Equally important is demonstrating that good land stewardship benefits the owner financially while protecting soil productivity into the future.

The Wisconsin Working Lands Initiative was signed into law in 2009 and is comprised of the following three programs:

- Farmland Preservation Program
- Agricultural Enterprise Area (AEA) Program
- Purchase of Agricultural Conservation Easement (PACE) Program

IMPLEMENTATION TOOLS

Farmland Preservation Income Tax Credits

An active Farmland Preservation Plan provides participating landowners with an opportunity to claim farmland preservation income tax credits that are applied against their tax liability. Landowners must be residents of Wisconsin and must meet other eligibility criteria to claim the credit, including compliance with state soil and water conservation standards.

Tax credits for land under Farmland Preservation Zoning are as follows:

- $10.00/acre if land is zoned and located in an Agricultural Enterprise Area.
- $7.50/acre if land is zoned exclusive agriculture.
- $5.00/acre if landowner has an agreement through the Farmland Preservation Tax Credit Program that was signed after 2009.

Agricultural Enterprise Areas (AEA)

Chapter 91 of the Wisconsin State Statutes details the formation of AEAs. Designation of an AEA recognizes that the area is valuable for current and future agricultural use. Eligible farmers in an AEA can receive income tax credits through an agreement with DATCP. An AEA designation provides reassurance about future farmland use and may encourage investment in agriculture infrastructure and related businesses. Eligible landowners can enter into a voluntary Farmland Preservation Agreement that allows them to claim a yearly tax credit in exchange for keeping land in agricultural use and meeting conservation standards. General eligibility requirements for an AEA are:

- Five eligible land owner participants
- All land in the proposed AEA area must be in the farmland preservation area
- Land must be contiguous
- Land must be primarily in agricultural use

The *Fields, Waters and Woods Agricultural Enterprise Area* was established in Ashland and Bayfield Counties in 2014. It covers parts of the Towns of Ashland, Marengo, and White River in Ashland County and the Town of Kelly in Bayfield County. The AEA also includes lands within the Bad River Band of Lake Superior Tribe of Chippewa Indians Reservation (Figure 3-4). More information about this and other AEAs in Wisconsin - including detailed maps and eligible tax

parcels - can be found on the DATCP website at https://datcp.wi.gov/Pages/Programs_Services/DesignatedAEAs.aspx.

Farmland Preservation Zoning

Agricultural zoning ordinances (Farmland Preservation Zoning) allow limited residential development but can restrict the density of the residential structures. Having these constraints on development may limit speculation and keep land affordable for farming. Discouraging non-agricultural development in areas zoned for Farmland Preservation may reduce the likelihood of conflicts between farmers and their non-farming neighbors.

Wisconsin Purchase of Agricultural Conservation Easements (PACE Program)

Agricultural Conservation Easements are deed restrictions that landowners voluntarily place on their properties to protect productive agricultural land. They sell a conservation easement to a government agency or private conservation organization. Landowners retain full ownership and continue to pay property taxes, and manage and operate the farm. Conservation easements are tailored to each property: purchasers and landowners decide which activities should be restricted or limited. When the landowner eventually sells the farmland, the development restrictions are passed on to the new owner. The PACE program for Working Lands in Wisconsin remains unfunded by the state.

Other Conservation Easements

Conservation easements are flexible and tailored to each property and the landowner goals. An easement on property containing rare wildlife habitat might prohibit any development, for example, while an easement on a farm might allow continued farming and the addition of agricultural structures. An easement may apply to all or a portion of the property, and need not require public access. The Bayfield Regional Conservancy and other regional land trust organizations have been actively pursuing conservation easements from landowners, although funding to compensate landowners for deed restrictions has been very limited.

Purchase of Development Rights (PDR)

A PDR program is where a government agency would buy the development rights to a property. The program would not give the government agency the right to develop the agricultural land; rather it would provide appropriate compensation for a landowner to relinquish their development rights to ensure that the land remains in agricultural use. The *2006 Ashland County Comprehensive Plan* included an action item for agriculture to "Study the feasibility of and support for establishing a PDR program", but this concept has not gained any traction.

Transfer of Development Rights (TDR)

A TDR program would allow landowners to transfer the right to develop one parcel of land to a different parcel of land. The programs are usually established by local zoning ordinances, and they are used to shift development from agricultural areas to designate growth zones closer to municipal services. The parcel of land where the rights originate is called the "sending" parcel. Once the development rights are transferred from a sending parcel, the land is restricted with a permanent conservation easement. The rights are transferred to a "receiving" parcel, which allows an owner purchasing the rights to build at a higher density than ordinarily permitted by the base zoning. Most TDR transactions are between private landowners and developers. Local governments approve transactions and monitor easements. Some jurisdictions have created "TDR banks" that buy development rights with public funds and sell them to developers and other private landowners.

TDR programs can prevent non-agricultural development of farmland, reduce the market value (and tax burdens) of protected farms and provide farmland owners with liquid capital that can be used to enhance farm viability.

Mitigation Ordinances
Mitigation ordinances require developers to permanently protect a certain amount of farmland for every acre of agricultural land they convert to other uses. Developers can place an agricultural conservation easement on farmland in another location or pay a fee to satisfy mitigation requirements.

Comprehensive Land-Use Planning
The County and Townships can use their Farmland Preservation and Comprehensive Plans as the basis for developing zoning ordinances. Development of a Farmland Preservation Zoning Ordinance would help protect productive agricultural areas from conflicting land uses while providing a larger tax incentive for landowners.

MONITORING
Monitoring is an important step to the planning process and is needed to assess what is working and what needs to be adjusted. The County will continually evaluate the plan and ensure that the decisions made remain consistent with the goals and objectives of the Farmland Preservation Plan and the County's Comprehensive Plan. Participation in conservation programs will be monitored according to rules and regulations set forth by the Federal, State or Local agencies managing in the program.

PLAN CONSISTENCY AND AMENDMENTS
This 2016 farmland preservation plan fulfills the statutory requirements for both the Farmland Preservation Plan (Chapter 91, Subchapter II, WI Statutes) and the Agricultural Element of the Comprehensive Plan (§66.1001(2), Wis. Stats.).

Several methods were used to ensure consistency between this plan and the Ashland County Comprehensive Plan.

- The Farmland Preservation Plan was created as Volume 3 of the Comprehensive Plan.
- Goals, objectives, and action steps initially came from a combination of the 1982 Farmland Preservation Plan, the 2006 Comprehensive Plan, and the 2016 update of the Comprehensive Plan. The items most relevant to agriculture, natural resources, and Farmland Preservation were reviewed and refocused to ensure relevancy and consistency.
- All maps were made in conjunction with mapping for the Comprehensive Plan update.
- Mapping criteria for the Farmland Preservation Areas and the Comprehensive Plan Future Land Use Map were developed and implemented concurrently.

Because the Farmland Preservation Plan is now part of the Comprehensive Plan, Wisconsin Statute §66.1001 requires that an adopted plan be reviewed and updated at least once every ten years. This is not a static plan, but one that may change over time. Changing land uses, policy changes, regulatory changes, or shifting economics are some reasons to periodically validate the accuracy and completeness of the plan.

The steps to amend any part of the Farmland Preservation Plan will be as follows:

1. At the request of a local government, a property owner, or a developer, the County staff and Committee will evaluate a proposed amendment to see if its meets the goals and objectives of the Plan, the State requirements, and any other laws or standards that may be in effect at the time of the request. If all is in order, the proposal will be brought before the County Board for

consideration.

2. The County Board adopts a resolution outlining the proposed amendment.
3. The County staff prepares the text and/or map that amend the specific part of the Farmland Preservation Plan or Plan map.
4. County Staff forwards the amended materials required under Section 91.20, Wis. Stats. to DATCP for certification of the Plan amendment.
5. A public hearing is held for input on the amendment. A Class 1 notice is published at least 30 days before the County Board public hearing is held.
6. The County Board holds the formal public hearing on adopting an ordinance that would incorporate the proposed plan amendment into the County's Farmland Preservation Plan.
7. Following the public hearing and DATCP certification, the County Board approves or denies the ordinance adopting the proposed plan amendment.
8. County staff forwards a copy of the adopted ordinance and plan amendment to DATCP, chairpersons in all townships and municipalities within the County, and any landowners who have requested a copy in writing.