Land and Water Resource Management Plan

Plan Prepared By: Portage County Planning and Zoning Department
Land and Water Conservation Division
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Plan Summary

The intent of Portage County's Land and Water Resource Management (LWRM) Plan is to promote wise use of the County's natural resources, resulting in a healthy economic environment, while still protecting the County's natural resources for long term stability. The Plan is divided into seven sections. The Introduction describes Plan requirements, development, and public participation. The Resource Assessment section contains general information, resource updates, and status reports. The next section consists of the Goals, Objectives, and Action Plans, and is followed by the Information and Education (I&E) section. Another section addresses NR 151 Performance Standards and Implementation. The Plan Implementation Budget section illustrates projected funding. The final section describes the Monitor and Evaluation process. Participation from the Land and Water Conservation Committee (LWCC), as well as the citizens of Portage County, is absolutely critical to the implementation of this Plan. Limited financial and human resources will make the implementation of this Plan a challenging endeavor.

The Land and Water Conservation Division's (LWCD) initial Long Range Plan was done in 1988. A reassessment by Portage County citizens, timed with the Department of Agriculture, Trade, and Consumer Protection (DATCP) LWRM Plan initiative, has resulted in a natural blend of goals. In 1999, the Portage County Land Conservation Division (LCD) mailed a survey to a random audience of 500 people for input into the LWRM Plan. Close to 200 people returned the survey with their opinions. A Steering Committee was then formed comprised of community organization, agency, and political representatives. This committee met four times and analyzed resource assessments, land use data, and political realities to form goals and objectives. A public hearing was held on August 23, 1999 presenting the proposed Plan. The entire process resulted in the formulation of a management document to cover the next five years. The process to revise and update the Plan was carried out in 2003, 2008, and 2019. Surveys conducted for the County comprehensive planning process, lake management planning process, and more recently the Portage County Groundwater Management Plan (GMP) showed no significant change in citizen resource hopes and concerns from the original LWRM Plan.

Water Quality and Erosion Assessment:
The northwest part of the County has heavy soils, as is evident in the Mill Creek Watershed, with "flashy" style runoff resulting in low biotic indexes. Because of this, Mill Creek is on the Environmental Protection Agency's (EPA) 303(d) list of impaired waters. A number of other Portage County waterbodies are either included on the 303(d) list or are proposed to be listed. More information is on the following webpage: https://dnr.wi.gov/topic/impairedwaters/.

The central sand plain is composed of course soils with areas of groundwater contamination and potential wind erosion. The eastern third of the County consists of the glacial moraine and inter-moraine with areas of groundwater contamination and Class I and II trout streams.

Goals of the LWRM Plan are: Improve Water Quality and Quantity Due to Urban Factors, Improve Water Quality and Quantity Due to Rural Uses, Improve Awareness of the Impacts That Increased Development and Unplanned Growth Can Have on Natural Resources in Rural Areas, Protect and Restore Lakes, Rivers, Shorelands, Wetlands, and Uplands for Wildlife Habitat, Water Quality, and Recreational Use, Reduce Wind Erosion, Reduce Surface Water Pollution on Waterbodies to a Level That Will Remove them From the EPA 303(d) List, and Provide Accurate Information About Natural Resources To All Customers.

Budget Summary: Approximately $764,000 annually will be necessary to fully implement the LWRM Plan for the next 10 years.

Introduction

The Portage County LWRM Plan was developed to assist the Portage County LWCC, the Wisconsin Land and Water Conservation Board (LWCB), and the Natural Resources Board (NRB) in their efforts to protect and improve the land and water resources of the County. Previous plans, such as the Portage County Animal Waste Pollution Control Plan (1986), the Erosion Control Plan (1986), and the LCD's Long Range Plan (1983-1988), needed updating. Citizens involved in the original planning process felt it was imperative that the LWRM Plan represents a coordinated effort of all the agencies currently working to address the environmental concerns raised by the citizens of Portage County for the next millennium. Thus, most objectives are designed as joint projects between municipalities, government agencies, landowners, citizens and local Non-Governmental Organizations (NGO). This will allow for greater flexibility in funding sources, a wide variety of implementation tools, increased cost effectiveness, and lead to a more comprehensive and innovative countywide, inter-county, and/or watershed-based effort. The Portage County LWCD must address the issue of limited staff available to implement this Plan. While the addition of full time staff would help to alleviate this problem, an integrated approach with Federal and State agencies and NGOs, supplemented by interns and Limited Term Employees (LTEs) will help with efficient implementation. The lack of staff also reflects on the type of recommendations made to track the progress of the Plan, as well as monitor and evaluate the resources. The Portage County LWCD will need to work with other agencies to collect information for the success of the Plan.

Plan Requirements

This Plan was developed as the result of amendments to Wisconsin Act 92 of the Wisconsin State Statutes, which includes enabling legislation for County Land Conservation Committees (LCCs) to develop County LWRM Plans. These Plans are intended to:

- Rely on a locally led process for Plan development and implementation
- Allow for maximum flexibility with various program and funding sources
- Encourage comprehensive watershed based efforts without excessive planning
- Reward innovation and cost effectiveness
- Require the seamless integration of programs and funding sources
- Make use of a wide variety of implementation tools
- Ensure meaningful program evaluation and accountability

The Portage County LWRM Plan is based on locally led conservation that identifies and attempts to resolve local natural resource problems in an effort to meet State standards, especially in the areas of water quality and soil erosion.

Plan Development and Public Participation

Four surveys were used to gather initial information for this Plan.

Surveys:

The Portage County Planning and Zoning Department (P&Z), the University of Wisconsin Extension (UWEX), and the Stevens Point, Whiting, Plover Wellhead Protection Project (SWP) conducted a countywide survey in July 1996 to ascertain the public's concerns and perceptions about groundwater quality in Portage County. The results of this survey indicated that the public viewed their groundwater as good to fair. They also felt that groundwater quality had gotten somewhat worse over the previous ten years. The public viewed agriculture as the main contributor to pollution, followed by manufacturing. They felt the main focus of expenditures for groundwater improvement should be on technical assistance programs.

In 1997, the Plover River Alliance conducted a landowner survey of residents along the Plover River to determine future land use in the river corridor. The respondents indicated a concern for increased sediment in the river, as well as periodic high nutrient levels.

In preparation for the development of the original LWRM Plan, the Portage County LWCD conducted a random, countywide survey in January 1999 to discover the environmental concerns of the citizens of Portage County. Areas of concern varied between those who were on the east side and west side of the Wisconsin River, as well as between agricultural producers and the nonagricultural community. While the rankings were different between groups, the following areas of concern appeared among all groups: urban runoff of chemicals getting into the groundwater, groundwater pollution in general, wind erosion, the loss of habitat and wetlands as a problem, the need to use enforceable regulations, and the conversion of farmland to urban land. All groups felt that the major focus of the LWCD should be in the gathering and dissemination of information, and in providing technical assistance for the County.

A survey conducted for the County comprehensive planning process had nearly 6,700 respondents, and showed no significant change from the original LWRM Plan relative to citizen natural resource hopes and concerns.

Steering Committee:

A LWRM Plan Steering Committee was formed in 1999, consisting of representatives of various government agencies, local businesses, farm organizations, and environmental groups. Each member was sent the results of all of the surveys, as well as background information from other agencies such as Department of Natural Resources (DNR) Basin Reports, Nonpoint Source Watershed Rankings, Outstanding Resource Waters (ORW), and Exceptional Resource Waters (ERW). Using the nominal group process during the group's first meeting, problems were identified and ranked as to their importance in the County. The following top areas of concern were selected for the LWRM Plan:

- *Decline in groundwater quality due to factors that are urban in nature*
- *Decline in groundwater quality due to factors that are rural in nature*
- *Increased surface water pollution*
- *Increased wind erosion*
- *Increased need to protect marginal lands, wetlands, and wildlife habitat*
- *Advancement of urban sprawl*
- *Inadequate data management system*

Three additional meetings were held to develop goals, objectives, and action plans.

A Local Advisory Committee was assembled to assist in completing the 2019 plan update. The participants were each asked to select their most important natural resource issues from the following list:

- Wind erosion
- Shoreland protection/restoration
- Terrestrial and aquatic invasive species
- Natural resource monitoring and Geographic Information System (GIS) data management
- Groundwater quantity/stream flows/lake levels
- Groundwater quality
- Surface water quality
- Wildlife and pollinator habitat
- Lake management plan implementation
- Wetland restoration/enhancement
- Natural resource educational programming

The top issues were: water quality and quantity; wind erosion; wetland and wildlife/pollinator restoration/enhancement; natural resource education; and invasive species mapping and eradication. The Committee met on March 26, 2019 and on June 4, 2019. The final draft of the Plan will go to Portage County Board for approval on December 17, 2019.

Plan Coordination:

The identified goals were assimilated by the LWCD in a uniform text to add consistency and to represent what the LWCD could actually perform, and what goals they would have to rely on other organizations. This list of goals, objectives, and action items was then presented to various agencies for final review and comment. For the LWRM Plan revision process in February 2004, the LWCD held four meetings to solicit input from a local Workgroup to update the goals, objectives, and action items to implement for the next five years. The revisions were then sent to a Steering Committee for input. A public hearing to provide additional input for the Plan was held on April 6, 2004 and documentation is on file with the LWCD. The County Board approved the Plan on July 20, 2004. The plan update, initiated in December 2008, consisted of consultation with an Advisory Group conducted by email and U.S. Postal Service to update Plan goals, objectives, and action items for implementation over the next ten years.

Resource Assessment

Location

Portage County is in the central part of Wisconsin, bordered on the north by Marathon County, on the east by Waupaca County, on the south by Waushara and Adams Counties, and on the west by Wood County. The total land area is 823 square miles, or 526,813 acres.

Land Use Trends

There were approximately 61,405 people living in Portage County in 1990, 68,227 in 2003 and 69,959 in 2008. The 2019 population was 71,038.

Portage County contains the City of Stevens Point and Village of Plover, which makes up the second largest urban center in the Central Wisconsin region. These municipalities hold the major population concentration in the County, with urbanizing fringe areas of 17 townships and eight other villages.

The rural residential population is willing to be mobile because of a convenient transportation network. Houses sprinkled through the rural agricultural landscape contribute to conflicts, as well as increasing traffic congestion.

Table 1. Portage County Land Use Data

Existing Land Use	2005 Acres	2005 % of Total Acreage	2019 Acres	2019 % of Total Acreage
Residential	19,642	3.7%	19,841	4.0%
Agricultural	206,783	39.2%	199,940	39.9%
Commercial	1,330	0.3%	1,294	0.3%
Industrial	530	0.1%	1,288	0.3%
Governmental/Institutional	1,057	0.2%	1,036	0.2%
Parks/Recreation/Natural Areas*	44,539	8.4%	51,253	10.2%
Non-Metallic Mineral Extraction	1,169	0.2%	1,206	0.2%
Right-of-Way (road and rail)	15,531	2.9%	15,395	3.1%
Vacant / Undeveloped	213,144	40.4%	210,454	41.9%
Rural Town Acreage	**503,725**	**96%**	**501,707**	**100%**
Rural Village Acreage	**4,591**	**<1%**	**4,645**	**<1%**
Urban Area Acreage	**18,948**	**3.6%**	**20,415**	**0.0%**
Total County Acreage (Approximate)	**527,264***	**100%**	**526,807***	**100%**

***Acreage discrepancy from 2005 to 2019 may be from some areas being double counted due to overlapping polygon errors in the data in 2005.**

Agricultural Trends

According to the 2017 Census of Agriculture: https://www.nass.usda.gov/Publications/AgCensus/2017/Full_Report/Volume_1,_Chapter_2_County_Level/Wisconsin/. (For comparison purposes, 2002/2012 data are shown in parentheses.)

Portage County has 982 (1,197/969) farms totaling 280,410 (211,222/278,673) acres. There is 96,196 (92,330/92,554) acres of cropland under irrigation, which is 34% (43%/33%) of the land in farms. The breakdown of land in farms is as follows: 74% cropland, 4% pastureland, 14% woodland, and 8% other. The total market value of agriculture products sold from all farms is $280,518,000 ($138,949,000/$295,088,000), with an average per farm of $285,660 ($116,081/$304,529).

The average length of the growing season in Portage County is 140 days, from approximately May 7 to September 24. In 2017, Portage County ranked first in the State for overall crop sales, vegetables, melons, potatoes, and sweet potatoes. Portage County ranked second in aquaculture and fifth in fruits, tree nuts, and berries. In 2015, there were 87 (168 in 2002, 101 in 2015) Grade A dairy herds, and seven (36 in 2002, nine in 2015) Grade B herds. These numbers have been declining annually. In 2017, a total of 12,500 (13,500 in 2002, 12,800 in 2013) cows produced an average of 22,300 (16,600 in 2002, 20,400 in 2013) lbs. of milk per cow.

Data from 1997 to 2017 indicates an increase in the number of farms from 913 to 982. The number of farmed acres increased from 262,799 to 280,410, resulting in a constant average per farm size of 286 acres. The average net cash income per farm operation in 2006 was $40,503, increasing to $80,971 in 2012, and dipping to $58,468 in 2017. Unless there is a significant change in the agricultural economy, this trend is likely to continue. This may result in urban development invading predominantly agricultural areas, resulting in land use tension. Also, there is a growing feeling that new agriculture markets limiting nitrogen and other chemical applications, should be developed to help stabilize Portage County's

agricultural economy. For more information on agricultural trends, please reference the Portage County Farmland Preservation (FPP) Plan - https://www.co.portage.wi.us/home/showdocument?id=24877

Geology and Topography Resources

Portage County is underlain by crystalline rocks of pre-Cambrian age, and sandstone of Cambrian age, which are mantled by glacial deposits of Pleistocene Age. The crystalline rock is exposed and weathered in the northwest part of the County. These are generally poorly drained soils. However, in the southern part of the County, sandstone overlies this crystalline rock.

The eastern half and south part of the County is covered with glacial drift. Deposits range from a few feet in the north to more than 350 feet in the southeast. This material is deposited in outwash plains where irrigation has generally developed. It is also deposited in moraine and inter-moraine drift, primarily from the Green Bay lobe of the glacier. This glacial topography of irregular hills, which are sometimes quite steep, creates problems of soil erosion if best management practices are not implemented.

Water Resources

Surface waters are identified in two distinct river basins: The Wisconsin River Basin, and the Wolf River Basin. Both of these basins contain multiple impaired waters and have Total Maximum Daily Loads (TMDL) reports. See Figures C, D, E, and F below. Eastern streams are primarily groundwater fed and flow to the Wolf River. Because of the sandy soil in the eastern section of the County, runoff is restricted to certain times of the year, primarily spring with frozen ground conditions. Because of glacial topography, there are a significant number of internally drained potholes that outlet to groundwater. The northwest section of the County drains to the Wisconsin River and has primarily surface water management problems due to less coarse soils of the region. These conditions cause excessive runoff, resulting in flashy streams and long term saturated soil conditions. Best Management Practices (BMPs) can improve and protect valuable soil, water, and wildlife resources for all citizens. Streambank areas throughout the County have been fenced to protect them from livestock. Since 2014, 14,861 feet of fencing have been installed voluntarily without an ordinance.

The DNR has identified 167 miles of Outstanding and Exceptional Water Resources in Portage County. More detailed information can be found at https://dnr.wi.gov/topic/SurfaceWater/orwerw.html. The DNR also provided input to the original LWRM work plan, and their priorities can be seen in Table 3 (Page 11).

Wetlands have been identified in the wetland maps of 1981. These areas are important as nutrient traps, flood storage areas, water recharge areas, and water discharge areas. Because of this value, the DNR has mapped and identified important wetlands for inventory purposes. Also, NR 115 Administrative Rules are enforced by the County to protect shoreland areas. The DNR's Surface Water Data Viewer can be accessed via this link - https://dnr.wi.gov/topic/surfacewater/swdv/

Groundwater availability in the northwest part of the County is limited because of the crystalline rock that is near the surface, making potable water difficult to develop. However, the groundwater in the central plain area is easily accessible. More information about groundwater and groundwater protection in Portage County can be found in the Groundwater Management Plan on the County website: https://www.co.portage.wi.us/home/showdocument?id=12349.

Residential development around lakes and streams has impacted water quality and aesthetics. Several lakes have experienced low oxygen conditions in the past, affecting the fish populations. Green areas, buffer zones, and possibly sewer systems could be incorporated into developments to reduce nutrient delivery.

A Lake Management Planning program has been completed and is currently in the implementation phase. The increased use of these lakes has also led to the introduction of aquatic invasive species (AIS). Portage

County has utilized grant opportunities and partnered with Golden Sands Resource Conservation and Development (RC&D) to provide information and education prevention campaigns.

Wind erosion impacts the surface drainage system in the Buena Vista Marsh. Soil material from wind erosion not only deposits in the water course and requires frequent cleaning out, but nutrients and pesticides can reach the surface waters as well. These pollutants contribute to algae blooms in downstream reservoirs. The Central Wisconsin Windshed Partnership (CWWP), administered by Portage County LWCD, has worked with landowners, highway departments, and the WI Department of Transportation to install 236 miles of windbreaks and living snow fences from 2004-2018.

Figure A. Portage County Watersheds

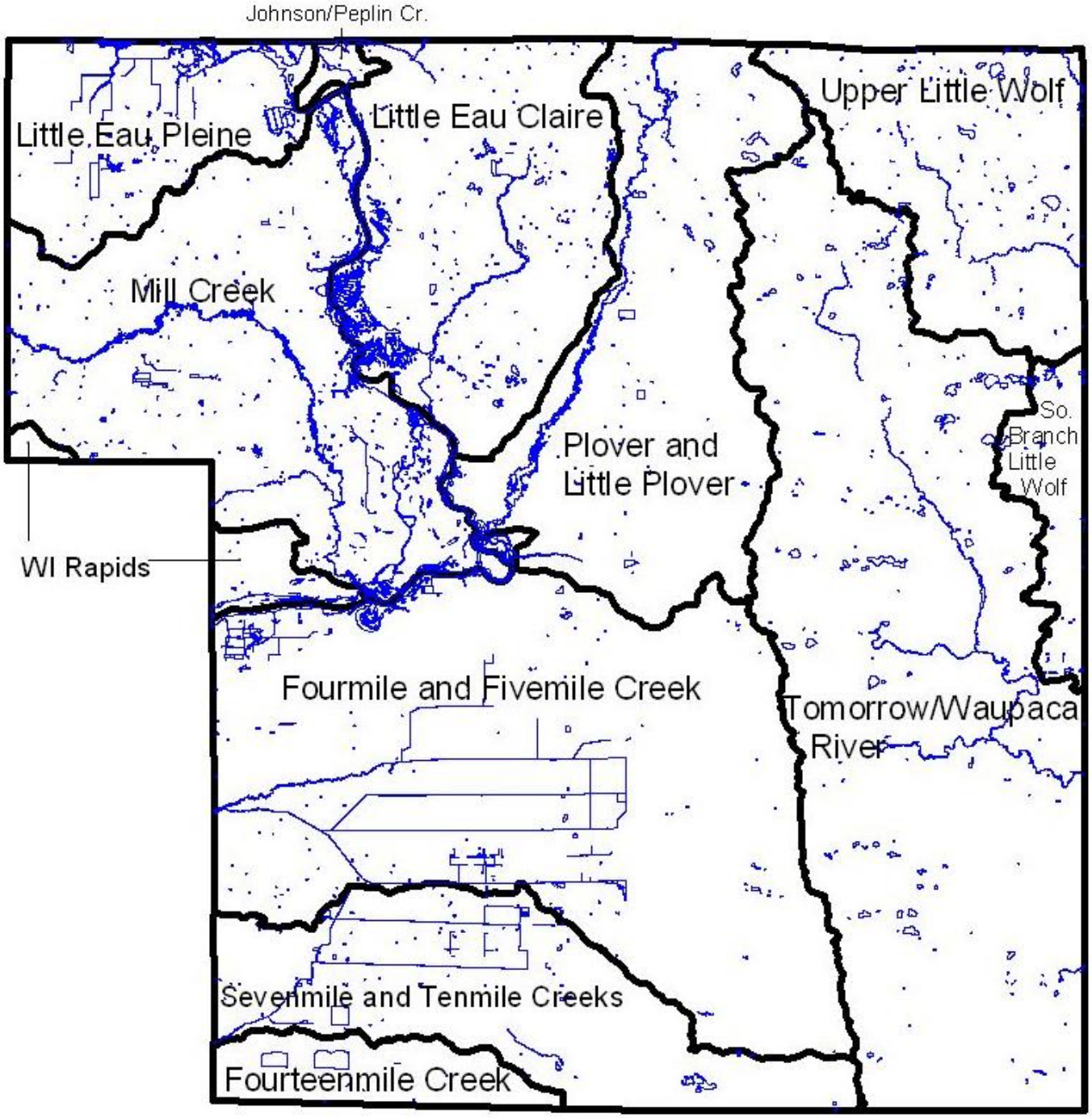


Figure B. Portage County Impaired Waters and Watersheds

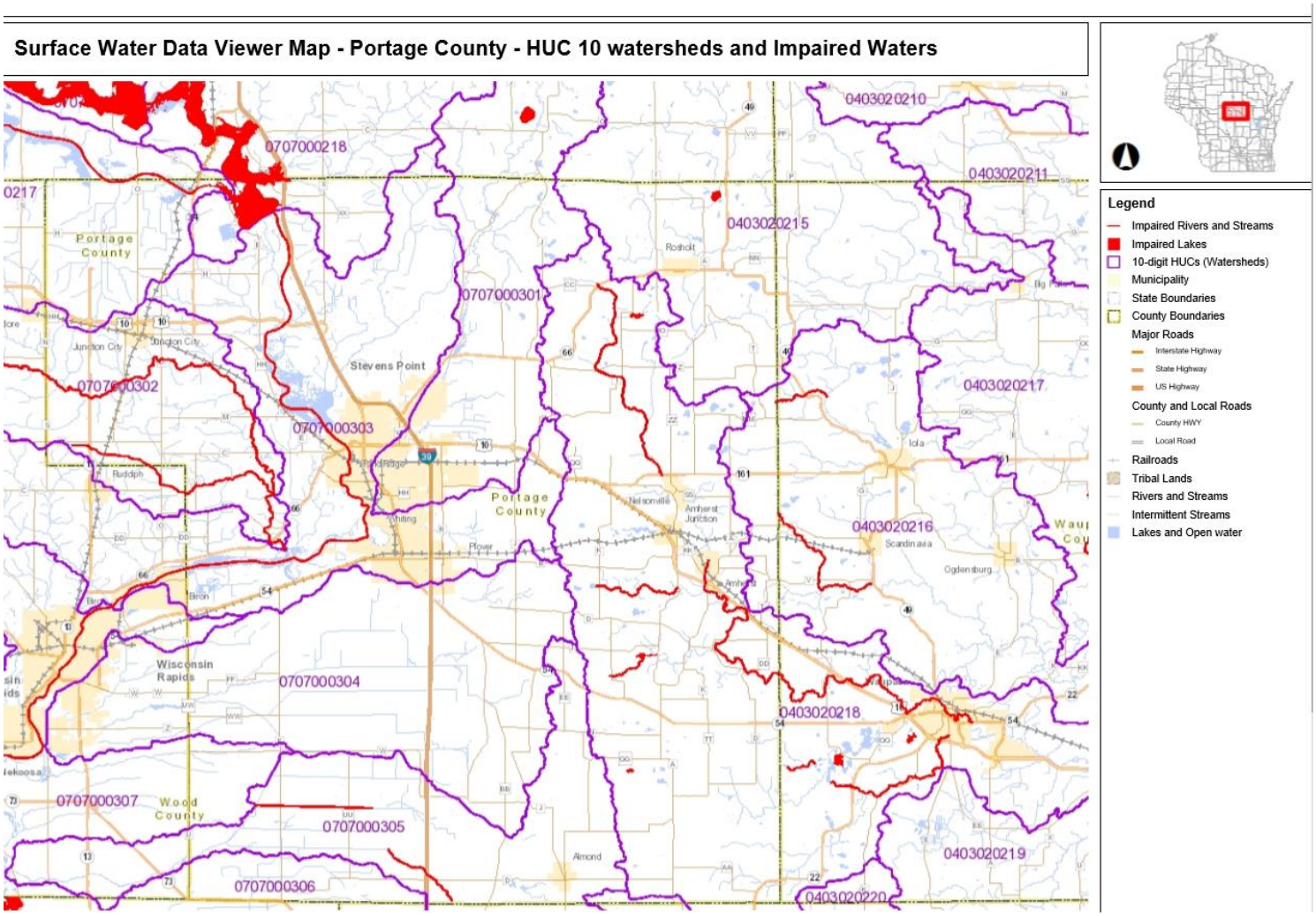


Table 2. Portage County Impaired Waters list (as of 2018)

Official Name (Click for Details)	Local Name (Click for Map)	Start Mile	End Mile	WBIC	Water Type	County	Pollutant	Impairment	Status	Priority
Tree Lake	Tree Lake			289400	Lake	Portage	Unknown Pollutant	Excess Algal Growth	303d Listed	Low
Waupaca River	Tomorrow/ Waupaca River	38.58	45.98	257400	River	Portage	Unknown Pollutant	Elevated Water Temperature	303d Listed	Low
Waupaca River	Tomorrow/ Waupaca River	32.77	38.58	257400	River	Portage	Unknown Pollutant	Elevated Water Temperature	303d Listed	Low
Waupaca River	Tomorrow/ Waupaca River	51.07	64.90	257400	River	Portage	Unknown Pollutant	Elevated Water Temperature	303d Listed	Low
Bear Creek	Bear Creek	1.94	7.23	267400	River	Portage	Unknown Pollutant	Elevated Water Temperature	Proposed for List	Low
Lake Du Bay	Lake DuBay			1412200	Impoundment	Marathon, Portage	Unknown Pollutant	Excess Algal Growth	Pollutant Removed	Delisted 2016
South Branch Tenmile Creek	South Branch Tenmile Creek	6.94	11.18	1383200	River	Portage	Unknown Pollutant	Elevated Water Temperature	Proposed for List	Low
Ditch # 5	Ditch #5 (N.Br. Tenmile Creek)	0.00	4.92	1384600	River	Portage	Unknown Pollutant	Elevated Water Temperature	Proposed for List	Low
Collins Lake	Collins (Fish) Lake			270200	Lake	Portage	Total Phosphorus	Impairment Unknown, Excess Algal Growth	TMDL Development	High
Spring Lake	Spring Lake			267200	Springs-Lake	Portage	Total Phosphorus	Water Quality Use Restrictions, Impairment Unknown	303d Listed	Low
Little Eau Pleine River	Little Eau Pleine River	0.00	28.60	1412600	River	Marathon, Portage	Total Phosphorus	Degraded Biological Community	TMDL Development	High

Official Name (Click for Details)	Local Name (Click for Map)	Start Mile	End Mile	WBIC	Water Type	County	Pollutant	Impairment	Status	Priority
Mill Creek	Mill Creek	16.01	32.82	1398600	River	Portage, Wood	Total Phosphorus	Low DO	TMDL Development	High
Mill Creek	Mill Creek	0.00	16.01	1398600	River	Portage	Total Phosphorus	Low DO	TMDL Development	High
Bear Creek	Bear Creek	0.00	11.70	1398700	River	Portage, Wood	Total Phosphorus	Water Quality Use Restrictions	303d Listed	High
Wolf Lake	Wolf Lake			241100	Lake	Portage	Total Phosphorus	Impairment Unknown	303d Listed	High
Lake Du Bay	Lake DuBay			1412200	Impoundment	Marathon, Portage	Total Phosphorus	Excess Algal Growth	303d Listed	Low
Mack Creek	Mack (Brown. Spring) Creek	0.00	1.96	267300	River	Portage	Total Phosphorus	Impairment Unknown	Proposed for List	Low
Collins Lake	Collins (Fish) Lake			270200	Lake	Portage	Mercury	Contaminated Fish Tissue	303d Listed	Low
Wisconsin River	Wisconsin River	204.17	223.47	1179900	River	Portage, Wood	Mercury	Contaminated Fish Tissue	303d Listed	Low
Wisconsin River	Wisconsin River	237.05	268.00	1179900	River	Marathon, Portage	Mercury	Contaminated Fish Tissue	303d Listed	Low
Wisconsin River	Wisconsin River	223.47	237.05	1179900	River	Portage	Mercury	Contaminated Fish Tissue	303d Listed	Low
Wisconsin River	Wisconsin River	237.05	268.00	1179900	River	Marathon, Portage	PCBs	Contaminated Fish Tissue	303d Listed	Low
Wisconsin River	Wisconsin River	223.47	237.05	1179900	River	Portage	PCBs	Contaminated Fish Tissue	303d Listed	Low

Source: WDNR Impaired Waters Search tool https://dnr.wi.gov/water/impairedsearch.aspx

Figure C. Portage County and Wisconsin River TMDL Area

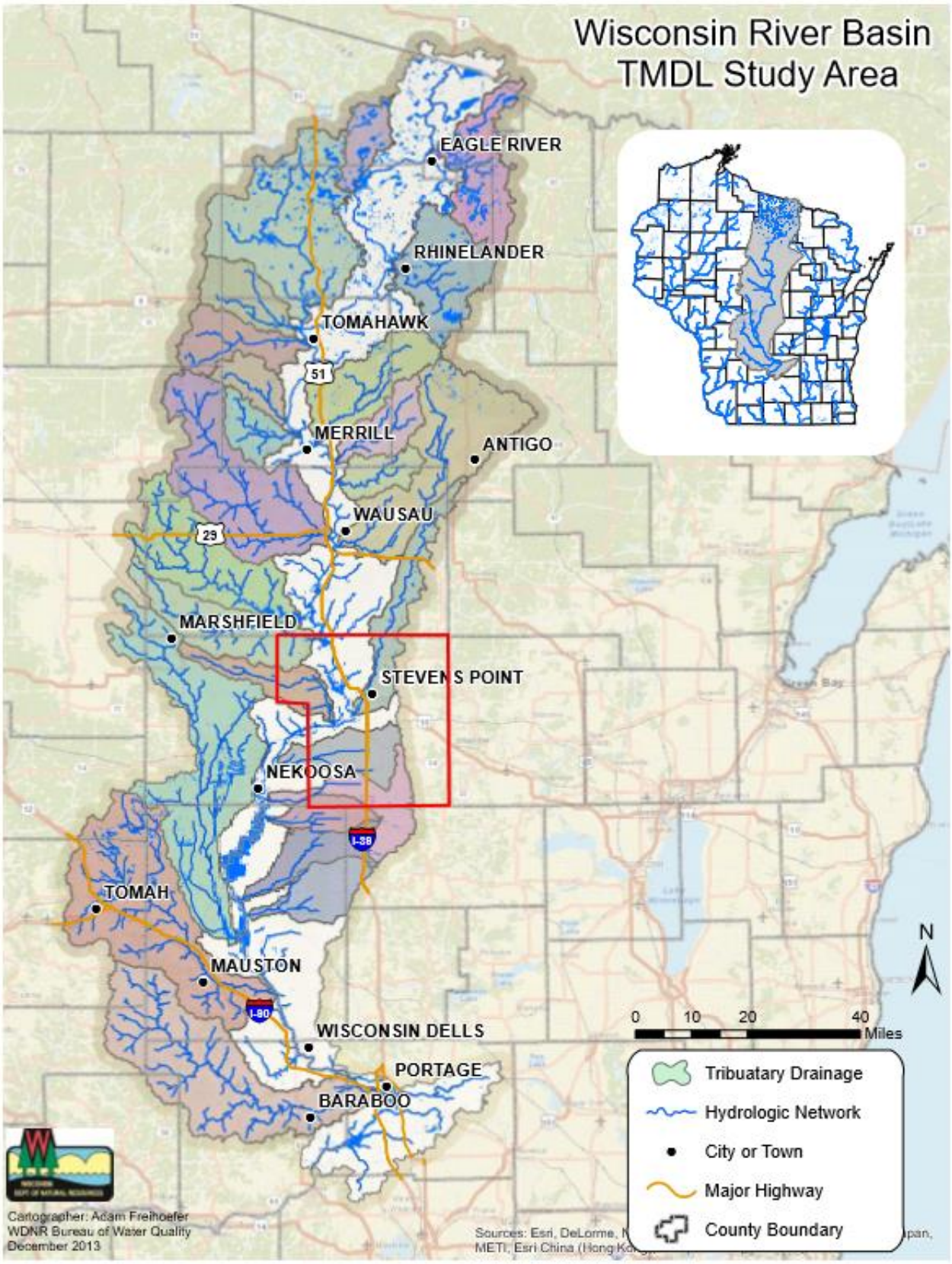
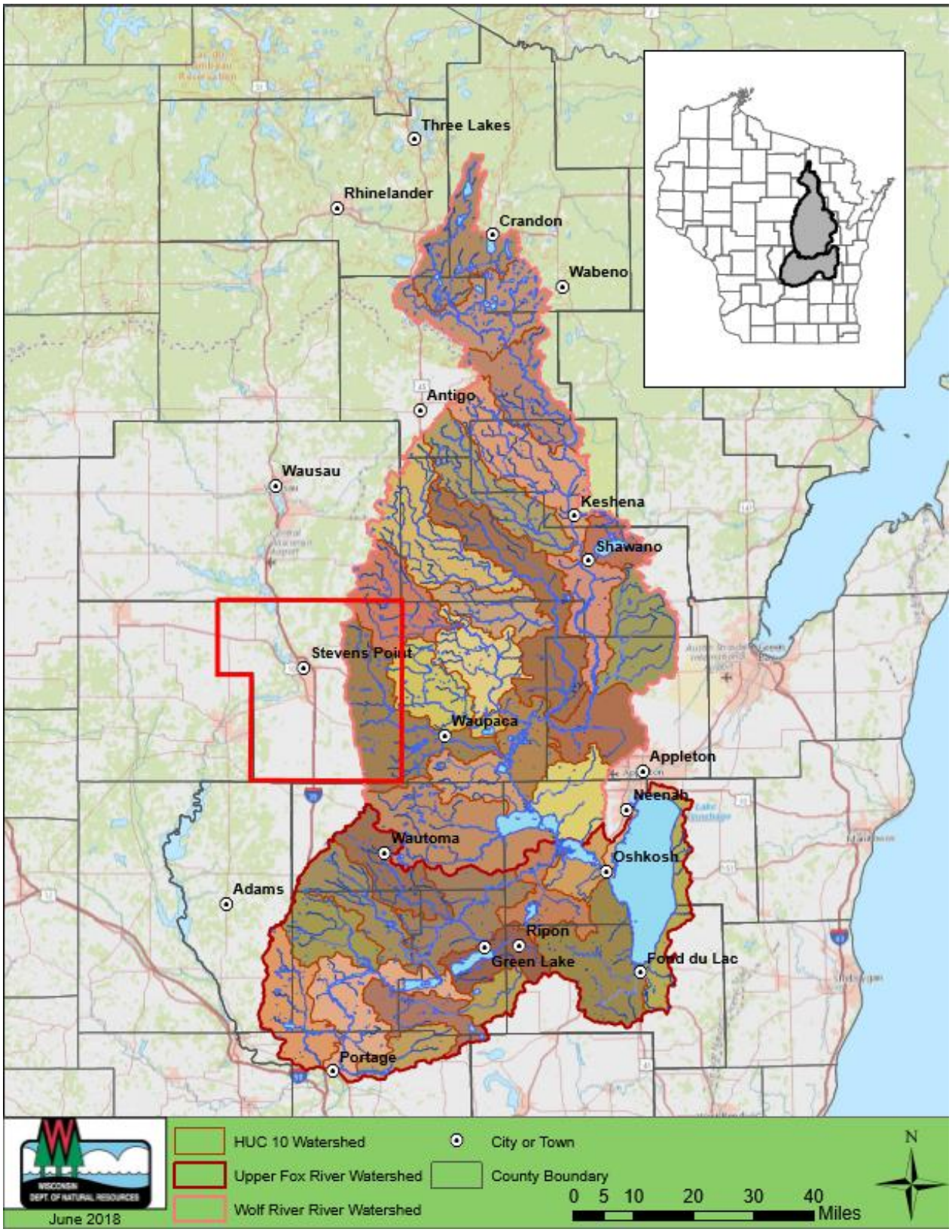


Figure D. Portage County and Wolf and Upper Fox River TMDL Area



Wisconsin River Watershed

The western two thirds of Portage County drains to the Wisconsin River. The Wisconsin River TMDL for phosphorus covers roughly two-thirds of Portage County. This TMDL was developed by the DNR and approved by U.S. EPA per the Clean Water Act in April 2019. The eastern portion of Portage County is within the Upper Fox–Wolf TMDL for phosphorus and total suspended solids. In both instances, these TMDLs are largely driven by the need to reduce algae blooms on downstream lakes and reservoirs. Local stream water quality varies in the county, with streams west of the Wisconsin River having higher phosphorus levels than those east of the river. The impaired waterbodies addressed by these TMDLs include Wisconsin's two largest inland lakes: Winnebago and Petenwell. Reducing phosphorus loading to local surface waters acts not only to protect and improve local water quality and local economies which rely on clean water, it also benefits these downstream impaired waters. The TMDL for the Wisconsin River Basin can be obtained via the following link: https://dnr.wi.gov/topic/TMDLs/documents/WisconsinRiver/Report/WRBApprovedTMDL20190426.pdf

This report will be used to establish water quality (WQ) objectives and prioritize areas within the County to reduce phosphorus loads, via implementation of NR 151 and related soil and water conservation programs. Appendices A and N from the Wisconsin River TMDL report will be used to establish edge of field WQ objectives within the County.

The Upper Wisconsin River is divided into three sub-basins: the Upper, Central, and Southern. Portions of the Central and Southern sub-basins are within Portage County. The Southern sub-basin extends from the Castle Rock Dam (mile 159.7) upstream to the Whiting Dam (mile 221.9). The Central Sub-basin extends from the Whiting Dam upstream to the Merrill Dam (mile 286.7). Combined, the two sub-basins extend for 127 miles, of which about 27 miles are in Portage County. The section of Wisconsin River in Portage County receives discharges from three municipal and four industrial wastewater treatment facilities. Its waste load is allocated from the Whiting Dam downstream (out of Portage County) to the Petenwell Dam. Waste load allocation is intended to maintain surface water quality standards during periods of low flows and high temperatures within a River segment. Computer modeling is used to establish discharge limits, which are then divided among dischargers in the River segment. Municipal facilities discharging into the Wisconsin River include: the City of Stevens Point, the Village of Plover, and the Village of Whiting.

Water quality standards are established for surface waters under NR 105 and 106 in order to protect aquatic life, human health, and wild and domestic animals. Appropriate discharge limits are included in the Wisconsin Pollutant Discharge Elimination System (WPDES) permits issued to all point source dischargers.

Toxic contaminants are a concern in both sub-basins of the Wisconsin River. Toxic substances have been detected in water, fish, and sediment samples throughout the River.

In addition to water quality monitoring, micro-contaminants in fish tissue have been analyzed. Fish have been collected for analysis in Portage County below the Stevens Point Flowage and at Lake DuBay. None of the samples contained levels of micro-contaminants that warranted inclusion on the State fish advisory list in 1991 (based on samples collected from 1985-1987).

Table 3. Wisconsin River Basin TMDL Cropland Reduction Targets

HUC12	HUC12 Name	TMDL	Row Crop Acres	SnapPlus Translated TMDL Allocations				
					Current Criteria		Recommended SSC	
				TP Baseline (lb/ac/yr)	Reduction Needed	TP Target (lb/ac/yr)	Reduction Needed	TP Target (lb/ac/yr)
070700021705	Bear Creek	WRB	69	1.9	0.79	0.4	0.67	0.6
070700021707	Little Eau Pleine River	WRB	3,884	1.5	79%	0.3	63%	0.5
070700021805	Little Eau Claire River	WRB	729	1.2	79%	0.2	63%	0.4
070700021806	Johnson Creek	WRB	0	-	-	-	-	-
070700021807	Lake DuBay	WRB	461	1.4	79%	0.3	63%	0.5
070700030103	Jordan Pond	WRB	4,762	0.8	79%	0.2	63%	0.3
070700030104	McDill Pond	WRB	7,765	1.1	79%	0.2	63%	0.4
070700030202	Middle Mill Creek	WRB	5,720	1.8	79%	0.4	63%	0.7
070700030203	Bear Creek	WRB	3,077	1.8	79%	0.4	63%	0.7
070700030204	Lower Mill Creek	WRB	3,634	1.4	79%	0.3	63%	0.5
070700030301	Hay Meadow Creek	WRB	1,306	0.8	79%	0.2	63%	0.3
070700030302	City of Stevens Point	WRB	4,949	1.1	79%	0.2	63%	0.4
070700030303	Little Plover River	WRB	6,108	1.3	79%	0.3	63%	0.5
070700030304	Village of Plover	WRB	2,035	0.7	79%	0.1	63%	0.3
070700030305	Mosquito Creek	WRB	174	1.7	79%	0.3	63%	0.6
070700030306	Biron Flowage	WRB	1,425	1.1	79%	0.2	63%	0.4
070700030401	Buena Vista Creek	WRB	23,473	1.3	79%	0.3	63%	0.5
070700030402	Fourmile Creek	WRB	18,330	1.3	79%	0.3	63%	0.5
070700030403	Nepco Lake	WRB	3,019	1	79%	0.2	63%	0.4
070700030501	Tenmile Creek	WRB	11,650	1.5	51%	0.8	63%	0.6
070700030502	Ditch number 5 & 9	WRB	6,796	1	79%	0.2	63%	0.3
070700030503	South Branch Tenmile	WRB	7,715	1.1	79%	0.2	63%	0.4
070700030504	Tenmile Creek	WRB	157	0.3	79%	0.1	63%	0.1
070700030602	Lone Rock-Fourteenmile	WRB	5,159	1.2	79%	0.2	63%	0.4
070700030603	Fourteenmile Creek	WRB	359	1.1	79%	0.2	63%	0.4
070700030701	City of Wisconsin Rapids	WRB	238	1.3	79%	0.3	63%	0.5
070700030703	Sevenmile Creek	WRB	344	0.7	79%	0.1	63%	0.3
070700030704	Fivemile Creek	WRB	223	0.5	80%	0.1	63%	0.2

Figure E(a). Portage County - Wisconsin River + Upper Fox Wolf River TMDL WQ Objectives

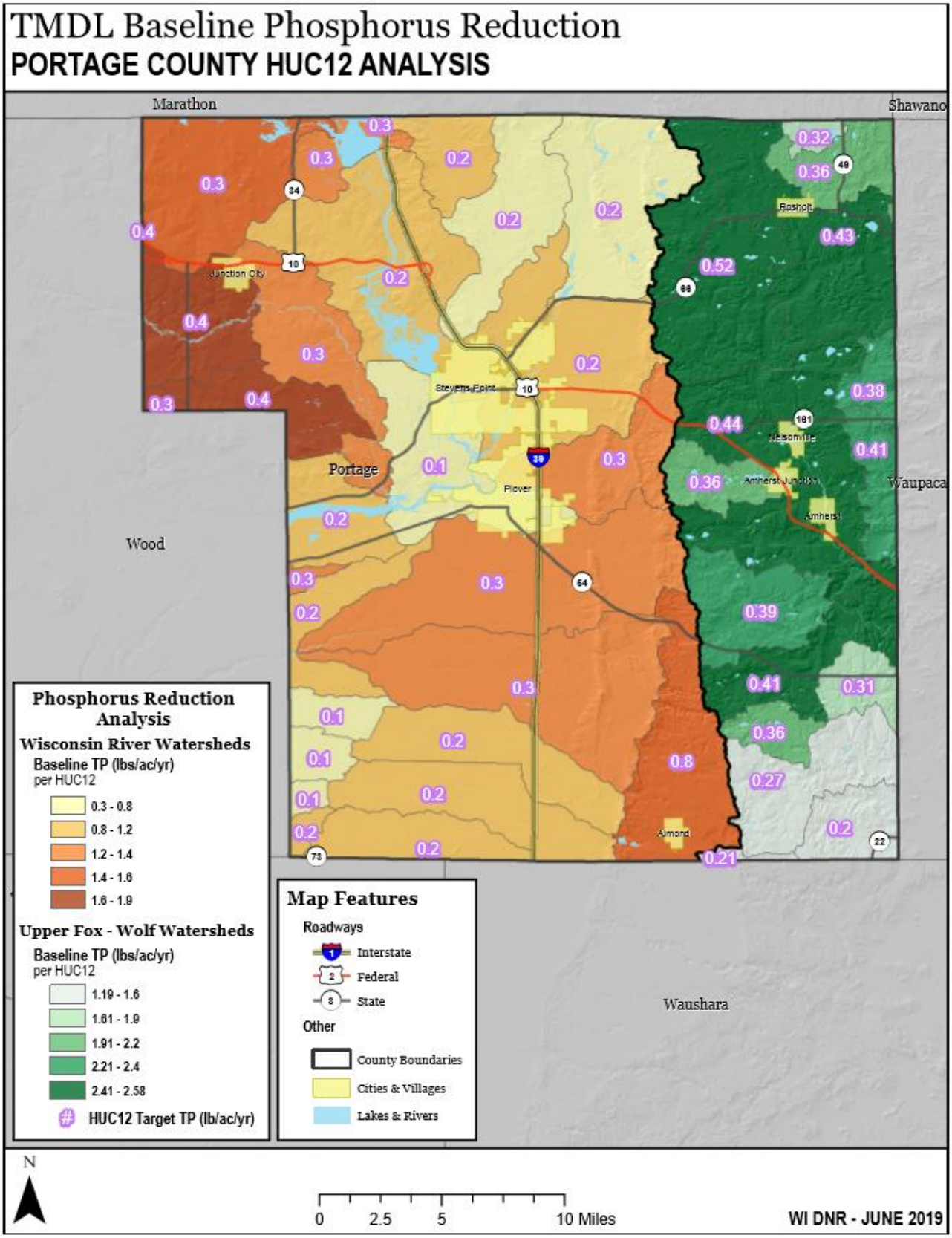


Figure E(b)

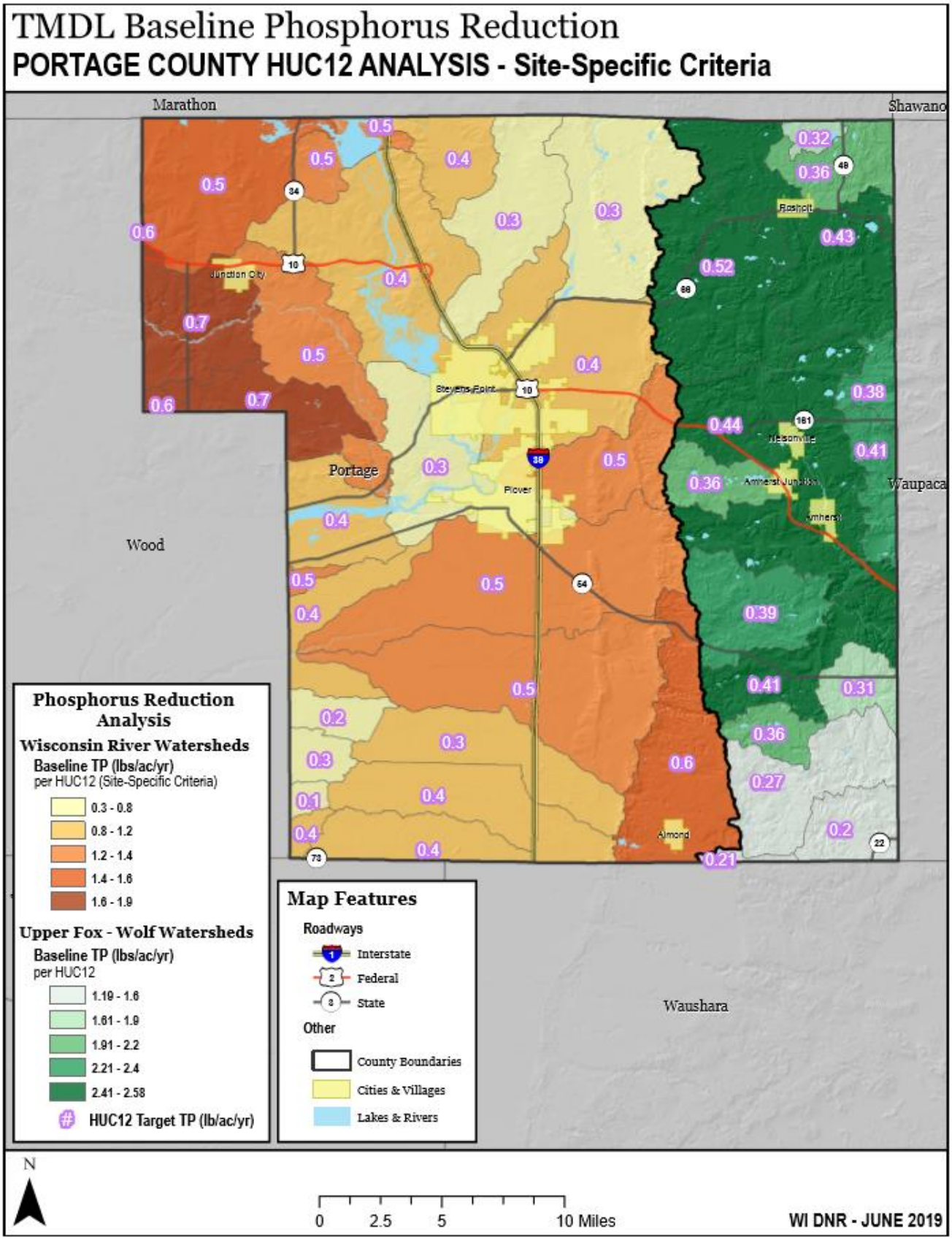
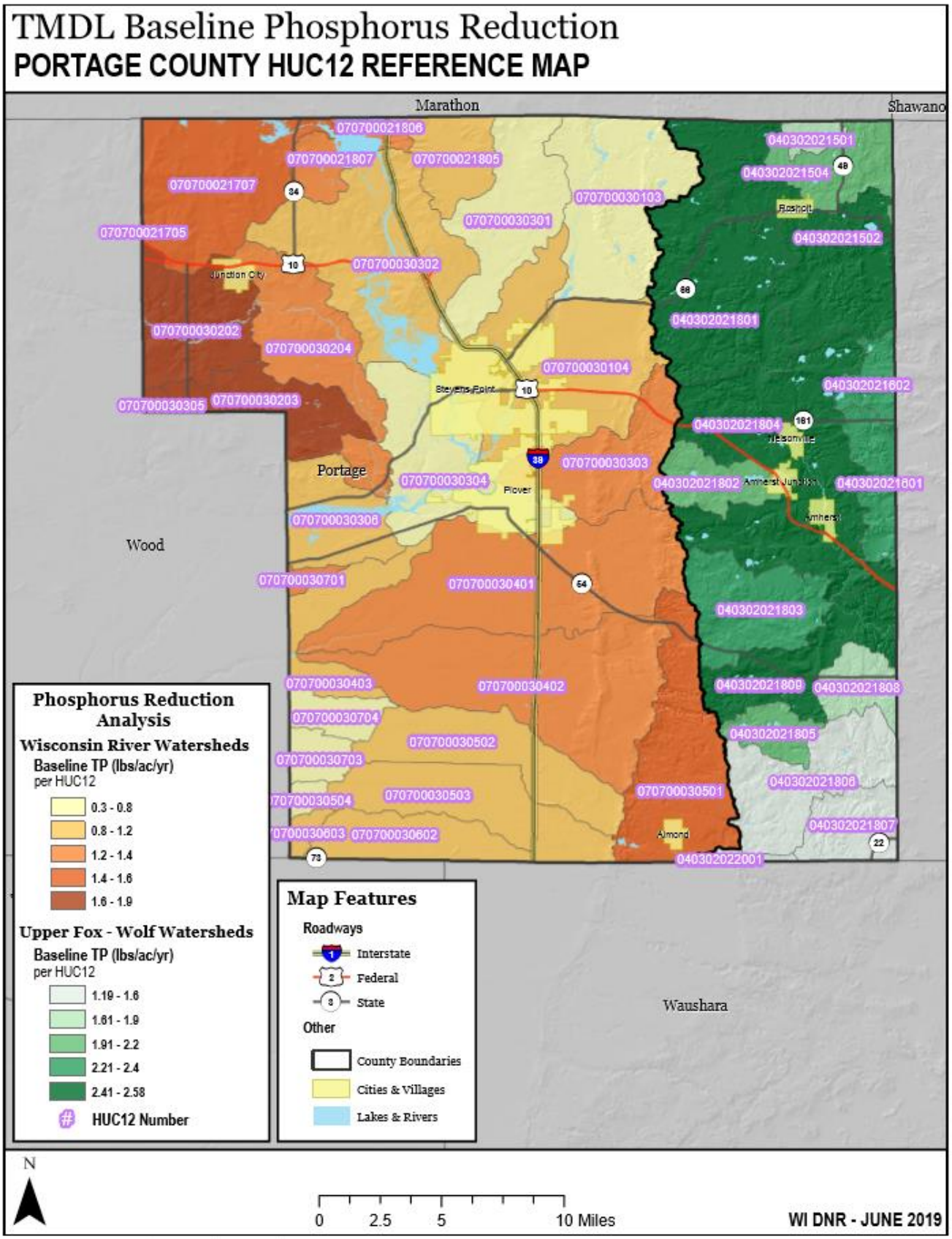

TMDL Baseline Phosphorus Reduction
PORTAGE COUNTY HUC12 ANALYSIS - Site-Specific Criteria
Marathon
Shawano
Wood
Portage
Waupaca
Waushara
Junction City
Stevens Point
Plover
Rosholt
Nelsonville
Amherst Junction
Amherst
Almond
Phosphorus Reduction Analysis
Wisconsin River Watersheds
Baseline TP (lbs/ac/yr)
per HUC12 (Site-Specific Criteria)
0.3 - 0.8
0.8 - 1.2
1.2 - 1.4
1.4 - 1.6
1.6 - 1.9
Upper Fox - Wolf Watersheds
Baseline TP (lbs/ac/yr)
per HUC12
1.19 - 1.6
1.61 - 1.9
1.91 - 2.2
2.21 - 2.4
2.41 - 2.58
HUC12 Target TP (lb/ac/yr)
Map Features
Roadways
Interstate
Federal
State
Other
County Boundaries
Cities & Villages
Lakes & Rivers
N
0
2.5
5
10 Miles
WI DNR - JUNE 2019

Figure E(c)


TMDL Baseline Phosphorus Reduction
PORTAGE COUNTY HUC12 REFERENCE MAP
Marathon
Shawano
Wood
Waushara
Portage
Stevens Point
Plover
Junction City
Rosholt
Nelsonville
Amherst Junction
Amherst
Almond
070700021806
070700021807
070700021805
070700021707
070700021705
070700030103
070700030301
070700030302
070700030202
070700030204
070700030104
070700030305
070700030203
070700030303
070700030304
070700030306
070700030701
070700030401
070700030403
070700030402
070700030704
070700030502
070700030703
070700030504
070700030503
070700030603
070700030602
070700030501
040302021501
040302021504
040302021502
040302021801
040302021602
040302021804
040302021802
040302021601
040302021803
040302021800
040302021808
040302021805
040302021806
040302021807
040302022001
Phosphorus Reduction Analysis
Wisconsin River Watersheds
Baseline TP (lbs/ac/yr)
per HUC12
0.3 - 0.8
0.8 - 1.2
1.2 - 1.4
1.4 - 1.6
1.6 - 1.9
Upper Fox - Wolf Watersheds
Baseline TP (lbs/ac/yr)
per HUC12
1.19 - 1.6
1.61 - 1.9
1.91 - 2.2
2.21 - 2.4
2.41 - 2.58
HUC12 Number
Map Features
Roadways
Interstate
Federal
State
Other
County Boundaries
Cities & Villages
Lakes & Rivers
N
0
2.5
5
10 Miles
WI DNR - JUNE 2019

Mill Creek Watershed
The Mill Creek Watershed Implementation Plan (i.e., Nine Key Element Watershed Based Plan) was approved by both WDNR and U.S. EPA in May 2019 and will be used to help implement the Wisconsin River Basin TMDL. Implementation is scheduled to begin in 2020.
The Mill Creek Watershed Implementation Plan can be obtained via the following link:
https://dnr.wi.gov/water/wsSWIMSDocument.ashx?documentSeqNo=199348869

Mill Creek has been listed by the U. S. EPA as degraded 303(d) waters due to lack of dissolved oxygen for extended periods. The watershed includes 165 square miles in eastern Wood and western Portage Counties (Fig. A, page 9). About 101 square miles of the watershed are within Portage County. Mill Creek is 57 miles long from its mouth at the Wisconsin River to its headwaters, which is near Marshfield. About 18 miles of Mill Creek are within Portage County.

Five municipal Waste Water Treatment Plants (WWTP) discharge to Mill Creek or its tributaries. These include: Marshfield, Blenker-Sherry, Junction City, Hewitt, and Milladore. Junction City is the only WWTP in Portage County that discharges to Mill Creek. The treatment plants are sources of nutrients. Coordination with Wood County will be necessary to improve water quality in the Mill Creek watershed. Sixty-four square miles of the watershed and 39 miles of Mill Creek are in Wood County.

A voluntary, non-regulatory farmer led group, Farmers of Mill Creek Watershed Council, was formed in 2016 and is working toward improving the water quality of Mill Creek. The Council's goals are:

- Further educate ourselves and our neighbors on phosphorus best management practices with the goal of improving water quality of the Mill Creek in Portage and Wood Counties.
- Focus on adopting more environmentally friendly farming practices that will ensure clean water and healthy soils for future generations while maintaining or improving profitability.
- The ultimate goal of the Farmers of Mill Creek Watershed Council is to be stewards of environmental sustainability for our land and water in our watershed.

More information can be found at https://portage.extension.wisc.edu/agriculture/farmers-of-mill-creek-watershed-council/

Little Eau Pleine River Watershed
The Little Eau Pleine River Watershed includes 264 square miles in eastern Wood, southern Marathon, eastern Clark, and western Portage counties (Fig. A, page 9). About 40 square miles of the watershed are in Portage County. The Little Eau Pleine River is 57 miles long, from its mouth at Lake DuBay to its headwaters northwest of Unity. About five miles of the Little Eau Pleine River are in Portage County. Portions of the River flow through the McMillan and Mead State Wildlife Areas, where it is important to waterfowl.

Because most of the Little Eau Pleine River Watershed is outside of Portage County, little can be done by the County to improve water quality. The majority of the watershed lies within Marathon and Wood Counties. Coordination with those counties and Clark County will be necessary to improve water quality in the watershed.

Little Eau Claire River Watershed
The Little Eau Claire River Watershed includes 123 square miles in eastern Marathon and northern Portage Counties (Fig. A, page 9). About 74 square miles of the watershed are in Portage County. The Little Eau Claire River is 27 miles long from its mouth at Lake DuBay to its headwaters west of Hatley. About two miles are within Portage County. Hay Meadow Creek is included in the Little Eau

Claire River Watershed. Hay Meadow Creek watershed accounts for the majority of the Little Eau Claire River Watershed in Portage County. Hay Meadow Creek is 17 miles long from its mouth at the Stevens Point Flowage to its headwaters in the Dewey Marsh.

Little Plover and Plover River Watershed

The Little Plover and Plover River Watershed includes 195 square miles in eastern Marathon and northern Portage Counties, with small portions in western Langlade and Shawano Counties. About 89 square miles of the watershed are within Portage County (Fig. A, page 9). The Little Plover River is six miles long, from its mouth at the Wisconsin River to its headwaters. It is entirely within Portage County. It has one dam on it, which creates Springville Pond. The Plover River is 64 miles long from its mouth at the Wisconsin River to its headwaters, northwest of Aniwa. About 16 miles of the Plover River are within Portage County. It has four reservoir forming dams on it: McDill Pond (262 acres), Jordan Pond (85 acres), Christensen Pond (19 acres), and Bentley Pond (75 acres).

The Little Plover River and its basin have been extensively studied. Numerous studies directed at surface water, groundwater, and land use have been completed. The University of Wisconsin-Stevens Point (UWSP) has conducted water quality monitoring of seven sites along the Little Plover River since 1971.

Groundwater concentrations of nitrate-N above the enforcement standard of 10 mg/L have been documented in the monitoring wells since 1980 (Shaw, et al., 1995). Because the Little Plover River is groundwater fed, the source of nitrates in the river is thought to be groundwater. Excess nutrients are also affecting Springville Pond by contributing to nuisance aquatic plant growths, mainly Eurasian Water Milfoil. Phosphorus is the limiting nutrient in Springville Pond.

The impacts of the high in-stream nitrate concentrations are unknown. However, nitrate concentrations of two mg/L have been shown to cause increased mortality of rainbow trout fry and eggs (Kinchelow, et al., 1979). The Little Plover River is a Class I brook trout stream (naturally reproducing population), and numerous habitat improvement projects have been done to help improve the fishery. The effects of nitrates on brook trout are unknown, but declining water quality may threaten the trout population, despite the habitat improvement work.

Pesticides have also been detected in surface and groundwater in the Little Plover River Basin. Eight pesticides or pesticide metabolites were detected in groundwater in a 1995 and 1996 study conducted through the UWSP (1996).

The loss of water quantity is another concern in the Little Plover River basin. Municipal wells of the Villages of Plover and Whiting are within the basin. In addition, there is a high density of high capacity wells for irrigated agriculture in the area. This results in large quantities of groundwater being pumped from the aquifer. Water used by the municipalities is lost from the watershed. Once residents use the water, it flows to a treatment plant and is discharged to the Wisconsin River. The connection between groundwater levels and stream flow has been well-documented (Mechenich, 1980; Hunt, 1985; Mechenich and Kraft, 1996).

A portion of the Little Plover River dried up for several weeks in 2005, 2006, and 2007. The Little Plover River Workgroup meets approximately twice a year to address issues in the watershed. The Workgroup is made up of representatives of the Friends of the Little Plover River, Villages of Plover and Whiting, Towns of Buena Vista, Plover, and Stockton, UWSP, DNR, Portage County, Trout Unlimited, Del Monte, several area potato and vegetable growers, and WI River Alliance, along with advisory support from the WI Wildlife Federation, WI Geologic and Natural History Survey, U. S.

Geological Service (USGS), and U. S. Department of Agriculture-Natural Resources Conservation Service (USDA-NRCS).

The sandy soils of the watershed make it extremely susceptible to groundwater contamination. Land use practices are greatly influencing groundwater and surface water quality and quantity.

Sevenmile and Tenmile Creek Watershed

The Sevenmile and Tenmile Creek Watershed includes 116 square miles in eastern Wood, northern Adams and Waushara, and western Portage Counties (Fig. A, page 9). About 63 square miles of the watershed are within Portage County. Sevenmile Creek is six miles long, from its mouth at the Wisconsin River to its headwaters. About 2.5 miles of Sevenmile Creek are in Portage County. Tenmile Creek is 23 miles long from its mouth at the Wisconsin River to its headwaters west of Almond. About seven miles of Tenmile Creek are within Portage County.

Fourteenmile Creek

The Fourteenmile Creek Watershed Non-Point Pollution Reduction Plan is still under development and can be obtained via this link when completed:
https://dnr.wi.gov/topic/nonpoint/9keyelement/

Fourmile/Fivemile Creeks

Fourmile/Fivemile Creek Watershed has approximately 16.75 square miles located in Portage County (Fig. A, page 9). The primary concerns relating to water quality are streambank erosion, sedimentation, wind erosion, and streambank pasturing.

Wolf River Watershed

Table 4. Wolf River Basin TMDL Cropland Reduction Targets

HUC12	HUC12 Name	Row Crop Acres	SnapPlus Translated TMDL Allocations					
			TP			TSS		
			TP Baseline (lb/ac/yr)	Reduction Needed	TP Target (lb/ac/yr)	TP Baseline (tons/ac/yr)	Reduction Needed	TP Target (tons/ac/yr)
040302021501	Holt Creek	563	1.87	83%	0.32	1.45	45%	0.79
040302021502	Flume Creek	8,044	2.53	83%	0.43	1.85	47%	0.99
040302021504	Bradley Creek	1,905	2.09	83%	0.36	1.57	47%	0.84
040302021601	Peterson Creek	1,820	2.40	83%	0.41	1.56	46%	0.84
040302021602	Nace Creek	794	2.25	83%	0.38	1.41	47%	0.75
040302021801	Poncho Creek	7,096	2.55	79%	0.52	2.93	35%	1.90
040302021802	Emily Lake	3,195	2.12	83%	0.36	2.34	35%	1.52
040302021803	Spring Creek	4,275	2.32	83%	0.39	2.47	35%	1.60
040302021804	Bear Creek	13,761	2.58	83%	0.44	2.38	36%	1.53
040302021805	Wolf Lake	1,320	2.09	83%	0.36	2.41	35%	1.56
040302021806	Emmons Creek	3,834	1.57	83%	0.27	1.98	35%	1.28
040302021807	Radley Creek	2,217	1.19	83%	0.20	1.50	35%	0.97
040302021808	Crystal River	987	1.82	83%	0.31	1.69	35%	1.10
040302021809	Mud Lake	3,545	2.41	83%	0.41	2.05	36%	1.32

See Figures G(a), (b), and (c) (Pages 18-20): Portage County - Wisconsin River + Upper Fox Wolf River TMDL WQ Objectives above.

Tomorrow/Waupaca River Watershed

The State of the Tomorrow River report can be obtained via the following link: https://www.co.portage.wi.us/home/showdocument?id=24600

The Tomorrow/Waupaca River Watershed includes 320 square miles in Portage, Waupaca, and Waushara Counties (Fig. A, page 9). Sixty percent of this area is in Portage County. The greatest threat to water quality is excessive amounts of nutrients entering the groundwater. Ninety-five percent of the watershed is highly susceptible to groundwater contamination due to highly permeable soils,

geology, and other physical resources. This results in documented groundwater contamination of nitrates and pesticides above State health standards. The river is well buffered in Portage County.

The voluntary, non-regulatory farmer led group, Farmers for Tomorrow River Watershed Council, was formed in 2017 with a mission to bring local farmers together to educate each other and the public about what can be done to keep our water safe and plentiful. The Council's goals are:

- Reduce nitrates entering the groundwater in the Tomorrow/Waupaca River watershed from non-point sources.
- Further educate ourselves and our neighbors on nitrogen best management practices with the goal of improving groundwater quality and the water quality of the Tomorrow Waupaca River.
- Focus on adopting more environmentally friendly farming practices that will ensure clean water and healthy soils for future generations while maintaining or improving profitability.
- The ultimate goal of the Farmers for Tomorrow River Watershed Council is to be stewards of environmental sustainability for our land and water in our watershed.

More information can be found on the Council's Facebook page:
https://www.facebook.com/FarmersForTomorrow/

Upper Little Wolf River Watershed – Little Wolf River
The Upper Little Wolf River Watershed has approximately 50 square miles located in Portage County (Fig. A, page 9). The main point source discharge is the Village of Rosholt.

Wildlife Resources

There are three larger wildlife properties in the County managed by the DNR. The Mead Wildlife Area contains 28,500 acres in Portage, Marathon, and Wood Counties. One quarter of the acreage is located in the northwestern portion of Portage County. The Buena Vista Grassland Wildlife Area consists of 12,000 acres of grasslands providing habitat for prairie chickens and other grassland species in the southwestern area of the County. The Dewey Marsh Wildlife Area in the north central part of the County has 5,100 acres managed largely as upland game habitat. There are approximately 6,000 acres of smaller parcels owned by the DNR that are associated with trout streams, or natural areas that support a variety of game and non-game species.

Privately owned lands and how they are used and managed have the most effect on total wildlife populations. There has always been a strong tradition for wildlife management in the private sector. Hunting pressure is not consistent, so game populations are concentrated, which further exacerbates conflicts between landowners with crop damage.

Soil Resources

The Wisconsin River generally divides major soil types. More loam soils dominate the west side of the River and course, sandy soils are found on the east side. This coincides with major land use differences and significantly different techniques to solve local community problems.

The primary impacts on soil resources in Portage County are the agricultural, non-metallic surface mining, and urban development land uses. The northwest and eastern townships in the moraine are primarily dairy production, while the central sand plain is developing into an irrigated cash crop region. Clearing fence rows and woodlands for center pivot irrigation have also created an opportunity for wind erosion in the sand plain area. If not managed properly, some areas can result in 10-20 tons per acre per year of soil loss during single wind events. Residential development in the moraine region has also resulted in some specific areas with high erosion rates. This is primarily due to poor site layout and improper methods of soil protection during construction. Another problem is scattered

critical soil erosion areas caused by water. Soil erosion from wind will continue to be a priority over the next 10 years and will be addressed by continuing with the Central Wisconsin Windshed Partnership project.

Woodland Resources

A significant portion of Portage County is commercially valuable forestland. Of Portage County's 526,813 acres, USDA Forest Service surveys as of 2016 indicate slightly over 35% (186,251) acres, is forested, which is up from 1996 when just over 32% (171,400 acres) was forested, A large majority of the county's woodlands contain hardwoods. Oaks are the predominant species on the coarse sandy soils of the southern half of the county. Maple or aspen dominate the timber stands in the north. Red and white pine also make up a significant timber type, mostly in the south.

Following is a clip from a spreadsheet of USDA Forest Service - Forest Inventory & Analysis (FIA) data, of area of forest land by forest type in thousands of acres for Portage County:

White/red/jack pine	Spruce/fir	Exotic softwoods	Oak pine	Oak/hickory
37.4	10.7	2.7	12	67.4
Elm/ash/cottonwood	Maple/beech/birch	Aspen/birch	Nonstocked	
21.6	11.9	19.8	1.4	

FIA data also shows that from 2013 to 2018, about 0.5% of forested acreage was lost to other uses. Private landowners control 87% of this forestland. Thirteen percent is owned by government or corporations. This division of ownership should not change in the foreseeable future.

There is a large trend toward forest fragmentation as a result of the parceling off of large woodlots. Conversion from wooded land to agricultural land saw a slight increase around 2013. This trend involves building homes in the woods as well as not managing the forest surrounding these homes, which ultimately removes that area from the productive forest category. As of 2009, 2% of land is classified as urban, which will increase as this trend continues.

All forestland requires management at several times during the life of the trees and this information needs to be conveyed to landowners. Many forest landowners do not take advantage of the free forest management opportunities offered by the DNR. It has been estimated that 10% of the State's privately owned forests change ownership each year. This adds extra difficulty to tasks of forest managers. However, the DNR Forester assists in management of approximately 3,000 acres per year. This includes the planting of an average of 650 acres of trees and shrubs. The majority of planting is done with pine species on idle land. These plantings also aid in soil and water conservation, provide habitat for wildlife, and add aesthetic qualities to the land.

The Managed Forest Law (MFL), administered by the DNR, allows a landowner to set their wooded acreage aside for timber production and receive an incentive in the form of a reduced property tax rate for doing so. The MFL requires a minimum of 20 acres entered under a 25-year or 50-year contract. As of January 2019, there were more than 51,000 acres in the county under the intensive management of the MFL, almost 1,500 are open to the public.

As of 2009, Portage County forest products and processing industrial output accounts for 14.7% ($668 million) of the total county industrial output. These forest related industries employ 4.0% (1,651 jobs) of the total employment in the county. For every 10 statewide jobs in the forest related industries, an additional 23 jobs are produced in other sectors of the state's economy as a result of forest industry purchases and their employee's household purchases.

Pulpwood production statistics from 1996 indicate that Portage County produced 43,000 cords of pulpwood and smaller amounts of mill residue from the local saw mills and several smaller pallet mills located in the county. Nevertheless, there is a projected decline in the county's production of pulpwood and saw timber as more land is removed from productive forestland. Seven primary forest product companies and 13 secondary forest product companies exist in Portage County. The saw mills throughout the county produce approximately eight million board feet each year, which are mainly hardwoods. USDA FIA data from 2018 shows that approximately 29,000 cords of pulpwood product and more than 12.5 million boardfeet of timber were harvested on an average annual basis.

Goals, Objectives, and Work Plan

The compilation of the Goals, Objectives, and Work Plan was a coordinated effort between the LWCC, LWCD, partnering agencies, and citizens of Portage County. Conservation partners and local leaders' perspectives enhanced Portage County's LWRM Plan. The Goals, Objectives, and Work Plan (Appendix E) were revised in 2019 by the Local Advisory Group to address natural resource issues in Portage County. The Goals and Objectives listed in the Work Plan are the County priorities and staff will be directed to implement the action items within each Goal. Each Goal states the identified problem, while the Objectives and Actions provide more detailed and measurable steps on how the LWCD plans to attain each goal.

Information and Education Activities

Newsletters, press releases, youth education programs, and workshops are developed on an as needed basis, as time and budget allows. The LWCC and LWCD will continue to partner with citizen led watershed groups, RC&D, UWEX, and DNR education specialists to accomplish activities in the Work Plan in order to promote conservation and the enhancement of the county's natural resources. Accomplishments will be reviewed annually and reported to the LWCC and State agencies.

Coordination & Cooperation

The Land and Water Conservation Division will work with DNR, NRCS, DATCP, UW and the Planning and Zoning Department to implement the Work Plan.

NR 151 Performance Standards and Implementation Strategy

Wisconsin's NR 151 performance standards can be found using this link:
https://docs.legis.wisconsin.gov/code/admin_code/nr/100/151

Table 5. State of Wisconsin NR 151 Performance Standards and Prohibitions

Performance standard ***(Type of standard covered)***	Conservation Initiatives
Control soil erosion to meet tolerable soil loss (T) calculated by RUSLE 2. *(Cropland)*	Install contour farming, cover and green manure crop, crop rotation, diversions, field windbreaks, residue management, strip-cropping, and terrace systems. Related runoff controls: critical area stabilization, grade stabilization structures, sinkhole treatment, water and sediment control basins, waterway systems.
Construct, maintain, and close manure storage facilities to prevent manure overflows and leaks. *(Livestock operations and facilities)*	Meet NRCS standards for construction, maintenance, and closure using technical standards. Barnyard and manure storage facilities are installed to control runoff and store manure until it can be applied to crops at the beginning of the growing season. This eliminates spreading animal wastes during the winter.
Divert clean water from feedlots. *(Livestock operations and facilities within Water Quality Management Areas)*	Install diversions, roof runoff systems, subsurface drains, and underground outlets.
Tillage setback	No tillage operations may be conducted within 5 feet of the top of the channel of surface waters.
Process wastewater handling	There may be no significant discharge of process wastewater to waters of the state.
Manure Management Prohibitions a. No overflow from manure storage facilities. b. No unconfined manure stacks within the Water Quality Management Area c. No direct runoff from feedlots and manure storage facilities. d. No unlimited access of livestock to shore lands that prevents maintenance of adequate sod cover. *(Livestock operations and facilities)*	a. Design and construct facilities to technical standards, maintain facilities including adequate freeboard, repair or replace facilities as needed. b. Relocate manure piles, construct manure storage facilities. c. Install barnyard runoff control systems, including diversions, milking center waste control systems, relocating or abandoning animal feeding operations, roof runoff systems, sediment basins, subsurface drains, underground outlets, water and sediment control basin, wastewater treatment strips, well decommissioning. For manure storage facility runoff, see (a.) above. d. Install access roads and cattle crossings, animal trails and walkways, critical area stabilization, livestock fencing, livestock watering facilities, prescribed grazing, riparian buffers, streambank and shoreline protection.
Nutrient Management Planning. Control nutrient runoff into waters of the State. *(Cropland)*	Develop and follow an annual nutrient management plan for applying fertilizer or manure according to NRCS 590 Standard. Phosphorus index: Croplands, pastures, and winter grazing areas shall average a phosphorus index of 6 or less over the accounting period and may not exceed a phosphorus index of 12 in any individual year within the accounting period.

Identification of Priority Farms

Priority farms are defined as those farms that are currently in violation of state prohibitions and performance standards. Priority farms will be identified initially through an inventory of existing records and citizen complaints. Portage County will implement its priority farms strategy as staff resources allow.

- First Priority - Farms where a valid complaint has been received regarding the violation of the agricultural performance standards or prohibitions.
- Second Priority – Farms applying for Farmland Preservation Agreements.
- Third Priority – Farms applying for an Animal Manure Storage Permit.
- Fourth Priority – Farms that receive cost-share assistance under the Land and Water Resource Management program.
- Fifth Priority – Farms located in watersheds draining to 303(d) waters.

Strategy to Encourage Voluntary Compliance

Efforts will be made to inform Portage County landowners about the required agricultural performance standards and prohibitions. County staff will provide landowners with an overview of the regulatory requirements, as well as available cost sharing programs. This effort will utilize existing fact sheets, in addition to any materials provided by the DNR and DATCP. The primary goal will focus on establishing a voluntary approach by landowners to come into compliance with the required standards. Additional information may be disseminated through newsletters published by the Portage County UWEX and the LWCD. When implementing soil and water conservation practices, staff will work with landowners to assure that the practices being constructed meet the regulatory framework. They will also inform the landowner why compliance is necessary, and the expectations for long-term maintenance of the practice being implemented.

Determine Current Compliance

Current compliance is determined based on a records inventory and onsite evaluations as explained below. Once a land parcel is deemed compliant, it is documented in the County GIS parcel database. Evaluation methods may include one or more of the following:

- Review of existing conservation plans
- Farmland Preservation Program (FPP) certification
- Previous Priority Watershed Contracts
- Nutrient Management Plans
- Status Reviews

Portage County will perform onsite evaluations throughout the implementation of the LWRM Plan and will be prioritized in the following order**:**

1. Review at the request of the landowner.
2. Landowners who, through the records inventory, are deemed to be out of compliance based on the evaluation methods utilized.
3. Formal complaints received by the LCD where a landowner may be out of compliance with the performance standards or applicable Portage County Ordinance.
4. Farmsteads located within a Water Quality Management Area (WQMA) as determined through the use of GIS.

Compliance is determined by the staff and documented. Should it be determined that the field/farmstead being evaluated is not in compliance, a report will be drafted to include the following:

- Corrective measures needed to be brought into compliance
- Estimated costs for implementing corrective action(s)
- Status of eligibility for cost share assistance
- Funding sources and technical assistance available from Federal, State, and local sources
- Signature line on the report findings indicating whether the landowner agrees or disagrees with the report findings
- Process and procedures for the purpose of the landowner contesting the findings
- A copy of the performance standards, prohibitions, and technical design standards
- A process/schedule for continued compliance monitoring

For more information on specific parcels documented as compliant with NR151, please contact Portage County LWCD.

Funding, Administration, and Technical Assistance

Additional costs for the County to document compliance with performance standards will be approximately four hours of staff time per landowner. The LWCD will utilize existing staff and sources of cost share for implementing conservation practices including local, State, and Federal cost share programs. The criteria used to evaluate applications will be reviewed annually and revised as necessary by the LWCC. Overall ranking criteria will be based on resource priorities and funding availability. If cost sharing is involved, the appropriate agreements will be signed and implemented. Technical assistance in the following forms will be provided throughout project implementation:

- Conservation planning assistance
- Engineering design
- The review of engineering designs by other parties
- Construction oversight
- Certification of construction projects to standards
- Cost containment

Upon completion of the practice installation, staff will issue a letter of compliance to the landowner indicating the site has been brought into compliance with the applicable performance standards and prohibitions.

Enforcement

A landowner is entitled to cost sharing if the landowner is required to implement best management practices on “existing cropland” or an “existing” livestock facility or operation in order to comply with a DNR NR 151 agricultural performance standard. If a landowner is found to be in violation of NR 151 and refuses an offer of technical and financial assistance from the Portage County LWCC, they will be referred to the DNR and notified by mail that they are subject to an enforcement action pursuant to NR 151.09 or NR 151.095. Reviews and appeals will be handled by the DNR. Moving from a voluntary to a non-voluntary situation, backed by State enforcement, needs to be carefully coordinated between agencies. Notice of Discharge grants from DNR and DATCP may be utilized as a cost share funding source. Please read the following state codes for more detail

https://docs.legis.wisconsin.gov/code/admin_code/nr/100/151/II/09

https://docs.legis.wisconsin.gov/code/admin_code/nr/100/151/II/095

Plan Implementation Budget

Portage County intends to make full use of its State staff support and cost share funding from DATCP, as well as funding available through various DNR programs, to address priority problems identified in this plan. The County will try to leverage these funds with available Federal program funds and private grant sources to achieve better cost effectiveness of conservation program implementation. Grant funds through the DNR's Targeted Runoff Management (TRM) program will be sought to implement water quality BMP's.

Budget Needs to Fully Implement Plan

Funding type	2020	2021	2022	2023	2024
Cost share	$300,000	$300,000	$300,000	$300,000	$300,000
Staffing	$442,000	$447,000	$452,000	$457,000	$462,000

Funding type	2025	2026	2027	2028	2029
Cost share	$300,000	$300,000	$300,000	$300,000	$300,000
Staffing	$467,000	$472,000	$477,000	$482,000	$487,000

Monitor and Evaluation

For the purposes of this Plan, the Monitoring and Evaluation process was divided into two segments: Administrative Review and Resource Review. One process is political and the other is technical, thus, they will be handled differently.

The Administrative Review is done by the LWCC, and will be conducted annually, as well as at the end of five years. Five County Board Supervisors and a representative of the Farm Service Agency (FSA) Committee are assigned to the LWCC. The LWCC will review yearly accomplishments and select fiscal and resource priorities for the upcoming years using the LWRM Plan as their guideline.

The Resource Review process will also be used to assist in decisions for the political process. However, surface water and groundwater quality typically require years to show improvement because of previous long-term pollutant loading.

The County GIS will provide the base for resource information layers. These layers will provide spatial, as well as other resource protection information needed to determine program implementation accomplishments. This will be accomplished within the next ten years.

Wisconsin Barnyard Runoff Model: The program known as "BARNY", was designed by the DNR to be used by Wisconsin counties primarily in conjunction with Wisconsin's Nonpoint Source Pollution Abatement Program. The model estimates the pounds of phosphorus and Chemical Oxygen Demand (COD), which can run off a barnyard during a single large rainfall. BARNY can predict a single event pollutant load, which is used to target barnyards for management (based on their probable water quality impacts), and to determine the corrective practice elements necessary to achieve the desired level of pollution reduction. As a self-contained model and database management system, BARNY is used to enter, edit, store, and report barnyard runoff information, and will be used to evaluate before and after BMP impacts on surface water.

Groundwater Models for Monitoring: The dynamic nature of groundwater flow creates a particularly difficult problem in accurately monitoring. The LWCC will defer to the Groundwater Citizens Advisory Committee (GCAC) to determine appropriate models.

Surface Water Quality Monitoring: It is primarily the DNR's responsibility to provide this information. However, they have had limitations placed on their ability to collect it. When possible, surface water quality monitoring will be conducted the Portage County Water Resource Specialist in coordination with DNR. This information will be used to track long term trends of Portage County water quality.

Revised Universal Soil Loss Equation II (RUSLE II): This model, developed by NRCS, evaluates sheet and rill soil erosion by water. It will be used to assess all soil erosion in Portage County and establishes "T" as the maximum soil loss rate, unless otherwise noted in specific watershed plans as needing to be less.

Wind Erosion Prediction System (WEPS): This is a wind erosion model. Since little is known on its impact on Central Wisconsin erosion rates, this will need to be calibrated in the Central Sands area.

Soil Nutrient Application Planner (SnapPlus): The program helps farmers make the best use of their on-farm nutrients, as well as make informed and justified commercial fertilizer purchases. By calculating potential soil and phosphorus runoff losses on a field-by-field basis while assisting in the economic planning of manure and fertilizer applications, SnapPlus provides Wisconsin farmers with a tool for protecting soil and surface water quality.

Record Inventory: Landowner files will be accessed to determine BMP implementation with a goal to convert them digitally to incorporate into the County GIS.

LWRM Plan Annual Report: The Annual Report will be used to determine progress in meeting goals and objectives.

Spreadsheet Tool for Estimating Pollutant Load (STEPL): This watershed modeling tool employs simple algorithms to calculate nutrient and sediment loads from different land uses and the load reductions that would result from the implementation of various BMPs.

Appendix A.

Acronyms

BARNY	Wisconsin Barnyard Runoff Model
BMP	Best Management Practice
COD	Chemical Oxygen Demand
CWWP	Central Wisconsin Windshed Partnership
DATCP	Department of Agriculture, Trade, and Consumer Protection
DNR	Department of Natural Resources
EPA	Environmental Protection Agency
ERW	Exceptional Resource Waters
FPP	Farmland Preservation Program
FSA	Farm Service Agency
FWS	Fish and Wildlife Service
FOMC	Friends of Mill Creek (Watershed, Inc.)
GCAC	Groundwater Citizens Advisory Committee
GMP	Groundwater Management Plan
GIS	Geographic Information System
I&E	Information and Education
LCC	Land Conservation Committee
LWCC	Land and Water Conservation Committee
LCD	Land Conservation Division
LWCD	Land and Water Conservation Division
LTE	Limited Term Employee
LWCB	Land and Water Conservation Board
LWRM	Land and Water Resource Management
MFL	Managed Forest Law
NGO	Non-governmental Organizations
NPS	Nonpoint Source
NRB	Natural Resources Board
NRCS	Natural Resources Conservation Service
ORW	Outstanding Resource Waters
P&Z	Planning and Zoning Department
RC&D	Resource Conservation and Development
SWP	Stevens Point, Whiting, Plover Wellhead Protection Project
TMDL	Total Maximum Daily Load
USDA	United States Department of Agriculture
UWEX	University of Wisconsin Extension
UWSP	University of Wisconsin-Stevens Point
WQMA	Water Quality Management Area
WEPS	Wind Erosion Prediction System
WPDES	Wisconsin Pollutant Discharge Elimination System (permit system)
WPVGA	Wisconsin Potato and Vegetable Growers Association
WWTP	Waste Water Treatment Plant

Appendix B.

Description of Land and Water Conservation Committee and Land and Water Conservation Division (Taken from the WI Land+Water's LCC Supervisors Handbook, Spring 2018)

Conservation at the County Level:
Land Conservation Committees and Land Conservation Departments

What is a Land Conservation Committee?
Land Conservation Committees were created through state law. Chapter 92 of the Wisconsin State Statutes (Chapter 92) required all counties create an LCC to carry out their responsibilities for conserving soil, water, and related natural resources.

LCCs oversee the administration and implementation of conservation programs that meet local priorities and the needs of land users. These programs might be local programs or state programs that are implemented at the local level. Locally implemented conservation programs across the state address a variety of resource issues, including but not limited to:

- Controlling soil erosion
- Managing manure and nutrient applications
- Planning for future land use
- Protecting important land areas
- Managing and protecting groundwater
- Controlling construction site erosion and urban stormwater runoff
- Managing lakes, rivers and shoreline areas
- Protecting and restoring wetlands
- Managing forest resources
- Controlling invasive species

Unless skillfully implemented, even the best conservation programs can do little to assist local residents and protect valuable resources. Effective coordination and implementation of conservation programs at the local level is the primary role and the major challenge for LCCs.

Who serves on the Land Conservation Committee?
Chapter 92 specifies LCC makeup as:

- At least 2 persons serving on the county's Agriculture and Extension Committee;
- One representative of the county USDA Farm Service Agency (FSA) Committee;
- Any number of county board members; and
- Up to 2 members that are not on the county board.

How long do members serve?
LCC members serve two-year terms or until a successor is appointed. Surveys indicate that approximately one-third of members are replaced every two years following county board elections and committee reorganization.

Who advises the Land Conservation Committee?
The county board appoints advisors to the LCC. Each county committee that deals with natural resources including county zoning, land use, forestry, parks and solid waste committees, must be represented. Additionally, the LCC may invite a representative from the agencies and organizations with which it has a Memorandum of Understanding, such as the USDA Natural Resources Conservation Service (NRCS). The public also acts in an advisory capacity to LCCs by participating in LCC-sponsored public meetings.

What is a Land Conservation Department?
The Land Conservation Department is made up of employees of the county. According to a key provision in Wis. Stats. Chapter 92.09, LCD staff may exercise the powers granted to the LCC and serve as the vehicle by which LCC policies are carried out. Therefore, the LCD serves as its committee's right arm. Most LCCs have a direct role in hiring LCD staff to implement their programs. Because of differing county administrative structures, some LCCs are not directly involved with hiring staff but do supervise the direction of the county program.

What is the relationship between the LCCs and LCDs?
We have just described the LCCs' statutory responsibility to conserve local soil, water, and related natural resources. The LCDs provide the assistance to the committee that helps them meet this responsibility. In this way, the county LCC and LCD function together with a common purpose of conserving the county's natural resources. The LCC is often responsible for a particular project or task but they generally rely on LCD staff for advice and project implementation. For example, participation in a given state program may require the LCC to submit a grant application and detailed work plan to carry out the project. The LCD will generally prepare the needed materials, while the LCC approves the grant application.

Each county in the state is required to have a Land and Water Resource Management (LWRM) Plan approved by the Department of Agriculture, Trade and Consumer Protection. LWRM Plans are approved for ten years, with a review by the Land and Water Conservation Board (LWCB) in year five. The LWCB must provide a recommendation to DATCP regarding the approval of every LWRM Plan. The LWCB uses guidance and a checklist to determine if the plans have appropriate performance benchmarks, include priority farm strategies, and meet other criteria for plan approval. To learn more visit: https://datcp.wi.gov/Pages/Programs_Services/LWCPlanning.aspx

It is often the case that LCCs influence, contribute to, and support the LCDs' work. Other examples of shared effort include:

- Establishing priorities for addressing resource challenges;
- Deciding what types of conservation assistance will best serve the needs of county land users; and
- Coordinating cooperation from agencies and other departments of county government to accomplish goals and tasks.

In summary, the LCC provides leadership, support, advice and constructive criticism to its LCD. The LCD carries out LCC policy on a daily basis. Although the LCD is indispensable to the success of any county's conservation effort, the LCC is ultimately responsible for the conservation of the county's natural resources. Here are examples of the division of responsibilities found in most counties:

LCC	LCD
• Sets policy and program goals programs • Provides leadership • Approves the LCD budget • Approves the LCD work plans • Supports the LCD • Advises the county board	• Administers the LCC policy and • Advises and informs the LCC • Prepares the LCD budget • Prepares the work plan • Provides technical assistance and distributes cost sharing to landowners • Administers grants and regulations

Roles and Responsibilities of LCCs

Land Conservation Committees and Chapter 92

Chapter 92 of the Wisconsin Statutes, which creates LCCs, is the state's soil and water conservation law. The statute ". . . declares it to be the policy of the state to halt and reverse the depletion of the state's soil resources and pollution of its waters." To carry out this policy, the legislature enacted Chapter 92 to:

- Establish goals and standards for conservation of soil and water resources;
- Provide cost sharing, technical assistance, educational programs, and other programs to conserve soil and water resources;
- Encourage coordinated soil and water conservation planning and program implementation; and
- Enable the regulation of harmful land use and land management practices by county ordinance where necessary.

The statute explains why the state and county are involved in natural resource conservation. It lays out the basic organizational framework for implementing the state's conservation policy and identifies the conservation work to be done and who is responsible for completing this work. LCCs are a key component of this law. Under Chapter 92, LCCs must meet defined statutory responsibilities. The law also authorizes committees to carry out state and federal programs, and grants them powers to address local resource concerns through the adoption of strong local conservation programs. As a member of your county's LCC, you have a responsibility to understand Chapter 92 and the powers that you are granted to meet your statutory responsibilities and address local conservation concerns. View the entire statute at https://docs.legis.wisconsin.gov/statutes/statutes/92

What are the statutory responsibilities of LCCs?

Chapter 92 requires certain activities of LCCs. Under Chapter 92, LCCs shall:

- Prepare and implement a Land and Water Resource Management Plan;
- Actively solicit public participation in planning and evaluating their soil and water conservation programs;
- Follow the Department of Agriculture, Trade and Consumer Protection procedures and requirements in order to receive funding through DATCP's Soil and Water Resource Management (SWRM) Program.

To meet these statutory responsibilities, LCCs work closely with LCDs, as well as with state and federal agencies.

What other powers may be exercised by LCCs?
By statute, LCCs also have the following *permissive* powers. These powers *may*, rather than *shall*, be exercised by Land Conservation Committees. Generally, LCCs are empowered to:

- Develop and adopt conservation standards for their county;
- Distribute and allocate federal, state, and county funds for conservation activities;
- Encourage information and education programs;
- Carry out preventative projects for water conservation;
- Provide technical, planning, or other assistance;
- Obtain property;
- Make equipment and supplies available to land users;
- Construct conservation structures;
- Adopt and administer conservation projects or programs;
- Make and execute contracts;
- Require payment for services;
- Enter lands of private owners;
- Employ staff; and
- Administer and enforce select ordinances.

LCCs rely on their partnership with the LCD to carry out these permissive powers to implement their local land and water conservation programs.

Do LCCs have the power to regulate?
No, not by themselves; however, the state does grant LCCs the power to propose adoption of county ordinances to promote soil and water conservation or nonpoint source water pollution control. Once passed and adopted by the county board, such ordinances allow county regulation of land use, land management, and pollution management practices. (Note: some proposed ordinances must pass a public referendum before being passed by county board – see Chapter 92, Wis. Stats. for details.)

Appendix C.

Public Hearing Notice

To be published on October 22 and October 29, 2019.

NOTICE OF PUBLIC HEARING
LAND AND WATER RESOURCE MANAGEMENT PLAN

Notice is hereby given that on Tuesday, November 5, at 6:00 p.m., in Conference Room 5 of the County Annex, the Land and Water Conservation Committee will hold a public hearing at which time and place all interested persons may appear and will be given an opportunity to be heard in support of or in opposition to the proposed Portage County Land and Water Resource Management Plan, which outlines the goals and objectives of the Land and Water Conservation Committee for the next ten years.

Such request may be examined by any interested person during regular business hours in the offices of the Portage County Planning and Zoning Department, Land and Water Conservation Division, County Annex. All interested persons are invited to attend said hearing and be heard.

Dated this 17th day of October, 2019.

Steven W. Bradley
Portage County Conservationist

NOTICE OF PUBLIC HEARING
LAND AND WATER RESOURCE
MANAGEMENT PLAN
Notice is hereby given that on Tuesday, November 5, at 6:00 p.m., in Conference Room 5 of the County Annex, the Land and Water Conservation Committee will hold a public hearing at which time and place all interested persons may appear and will be given an opportunity to be heard in support of or in opposition to the proposed Portage County Land and Water Resource Management Plan, which outlines the goals and objectives of the Land and Water Conservation Committee for the next ten years.
Such request may be examined by any interested person during regular business hours in the offices of the Portage County Planning and Zoning Department, Land and Water Conservation Division, County Annex. All interested persons are invited to attend said hearing and be heard.
Dated this 17th day of October, 2019.
Steven W. Bradley
Portage County Conservationist
Run: Oct. 22, 29, 2019 WNAXLP

Appendix D.

County Regulations

Animal Manure Storage Ordinance and Nutrient Management Standards

The Portage County Board of Supervisors finds that storage of animal manure in storage facilities not meeting technical design and construction standards may cause pollution of the surface and groundwater of Portage County, and may result in actual or potential harm to the health of County residents, livestock, aquatic life, and other plants and animals, and to the property tax base of Portage County. The Portage County Board of Supervisors also finds that improper management of animal waste storage facilities and utilization, including land application of stored animal waste may cause pollution of ground and surface waters of Portage County. The Portage County Board of Supervisors further finds that the technical standards developed by the United States Department of Agriculture (USDA) Natural Resource Conservation Service and adopted by the Portage County Land and Water Conservation Committee provide for effective, practical, and environmentally safe methods of storing and utilizing animal manure.

The purpose of the Ordinance is to regulate the location, design, construction, installation, alteration, and use of animal manure storage facilities, and the application of manure from these facilities. Portage County intends that such regulation will prevent water pollution and the spread of disease, and thereby promote the health, prosperity, and general welfare of the citizens of Portage County. Portage County also intends by this Ordinance to provide means for its administration and enforcement.

A copy of the Ordinance can be obtained from Portage County Land Conservation or from the Portage County website at https://www.co.portage.wi.us/home/showdocument?id=6955.

Farmland Preservation Program

The Land and Water Conservation Division is responsible for cross compliance. Currently, there are no participants in this DATCP program.

Non-Metallic Mine Reclamation Plans and Permits

The Land and Water Conservation Division is responsible for administering this program.

Stormwater Permits

The Land and Water Conservation Division is responsible for administering this program.

Appendix E.

Work Plan

GOAL I: IMPROVE WATER QUALITY AND QUANTITY DUE TO URBAN FACTORS

OBJECTIVES	ACTIONS*	MANAGEMENT TEAM	MEASUREMENT TOOLS
A. PARTICIPATE IN THE IMPLEMENTATION OF THE GROUNDWATER MANAGEMENT PLAN	1. The Land and Water Conservation Division (LWCD) will participate as needed in the Groundwater Citizens Advisory Committee (GCAC).	P&Z LWCD GCAC	2 meetings/year
	2. Secure funds to hire staff to develop, map, and prioritize a comprehensive list of factors contributing to the decline in groundwater quality from urban related land uses and implement Best Management Practices (BMPs) to correct them.	P&Z LWCD GCAC	Hire 1 additional staff
B. INFORMATION AND EDUCATION OBJECTIVE: INCREASE THE PUBLIC'S AND LOCAL ELECTED OFFICIALS' UNDERSTANDING AND AWARENESS OF ISSUES RELATED TO URBAN IMPACTS ON WATER QUALITY	1. Provide technical information as needed.	P&Z GCAC LWCD	As requested
	2. Implement demonstration projects to educate the public on water quality issues.	P&Z GCAC LWCD	1 project/5 years
C. ASSIST PLANNING AND ZONING DEPARTMENT (P&Z) WITH PERMIT REVIEW	**1. Review construction site erosion control, stormwater, and subdivision plans for water quality and quantity impacts.**	P&Z LWCD	50 plans/year

***Bold print Actions are priorities**

GOAL II: IMPROVE WATER QUALITY AND QUANTITY DUE TO RURAL USES

OBJECTIVES	ACTIONS*	MANAGEMENT TEAM	MEASUREMENT TOOLS
A. ASSIST UW-Extension (UWEX) AND THE WISCONSIN POTATO AND VEGETABLE GROWERS ASSOCIATION (WPVGA) TO IMPROVE GROUNDWATER QUALITY AND CONSERVE ITS USE	1. Work with Portage County irrigated vegetable growers to develop and implement innovative conservation practices.	WPVGA UWEX LWCD	1 meeting/year
B. ENCOURAGE COMPLIANCE WITH CURRENT CODES, PROHIBITIONS, PERFORMANCE STANDARDS AND TMDL WATER QUALITY OBJECTIVES	**1. Provide technical and financial assistance to meet state nonpoint source (NPS) pollution prohibitions and performance standards, such as well abandonment.**	LWCD NRCS	5 practices/year
	2. As Portage County LWCD staff and resources allow, help meet or make progress towards the Wisconsin River or Wolf/Upper Fox River TMDL edge of field reduction targets on agricultural fields/farms.		
C. ASSIST IN THE ESTABLISHMENT OF AN AGRICULTURAL AND ECONOMIC TASK FORCE TO AID IN THE DEVELOPMENT OF ALTERNATIVE AGRICULTURAL INDUSTRY TO REDUCE GROUNDWATER USAGE AND CONTAMINATION	1. Work through UWEX, and the Portage County Business Council to establish a regional agricultural "Alternative Markets" committee.	WPVGA LWCD NRCS UWEX	1 meeting/year
	2. Work with vegetable producers and processors.		
D. MINIMIZE NEGATIVE IMPACTS OF LIVESTOCK MANURE	**1. Provide technical and financial assistance for the implementation of BMPs.**	LWCD NRCS	5 practices/year
	2. Provide education programs to implement nutrient and pest management plans for improved water quality.	LWCD NRCS UWEX	5 plans/year
	3. Provide technical and financial assistance for abandonment of unused or failing manure storage facilities.	LWCD NRCS	1 practice/year
E. ASSIST IN IMPLEMENTING THE PORTAGE COUNTY GROUNDWATER MANAGEMENT PLAN	1. Provide information on wellhead protection.	GCAC LWCD P&Z	As requested
	2. Provide information on water conservation		

***Bold print Actions are priorities**

GOAL III: IMPROVE AWARENESS OF THE IMPACTS THAT INCREASED DEVELOPMENT AND UNPLANNED GROWTH CAN HAVE ON NATURAL RESOURCES IN RURAL AREAS

OBJECTIVES	ACTIONS*	MANAGEMENT TEAM	MEASUREMENT TOOLS
A. PROVIDE TECHNICAL INFORMATION ON EFFECTS THAT SPRAWL DEVELOPMENT HAS ON RURAL AREAS	1. Encourage rural landowners to investigate options (i.e. Farmland Preservation Program, Ag Enterprise Areas, Purchase of Development Rights, Conservation Easements, etc.) to protect openspace while still allowing for financial gain on their property.	P&Z LWCD	1 landowner/year
	2. Administer nonmetallic mine program.	P&Z LWCD	25 permits/year

***Bold print Actions are priorities**

GOAL IV: PROTECT AND RESTORE LAKES, RIVERS, SHORELANDS, WETLANDS, AND UPLANDS FOR WILDLIFE HABITAT, WATER QUALITY, AND RECREATIONAL USE

OBJECTIVES	ACTIONS*	MANAGEMENT TEAM	MEASUREMENT TOOLS
A. PROTECT, RESTORE, AND ENHANCE LAKES, RIVERS, SHORELANDS, WETLANDS, AND UPLANDS	**1. Identify funding sources available to Portage County and the LWCD and implement and monitor BMP's to protect natural resources.**	LWCD NRCS P&Z FWS	5 practices/year
	2. Implement and monitor lake management plans.	LWCD NRCS P&Z	5 plans/year
	3. Work to control invasive aquatic and terrestrial species.	LWCD Parks Dept RC&D DNR Weed Commissioner Highway Dept.	100 sites mapped/year 100 sites treated/year
	4. Work to eradicate noxious species.		
	5. Assist State Agencies with implementation of performance standards and prohibitions.	LWCD DNR	5 certifications/year
	6. Provide technical and financial assistance to meet State NPS pollution prohibitions and performance standards.	LWCD NRCS	60 parcels/year
B. INFORMATION AND EDUCATION OBJECTIVE: WORK WITH PORTAGE COUNTY AND OTHER INTERESTED PARTIES TO PUBLICIZE PORTAGE COUNTY'S PLAN TO RESTORE AND ENHANCE PROTECTED AREAS	1. Provide technical information for a media program to the County, UWEX, and other organizations on the importance of wetlands, greenspace and pollinator habitat.	UWEX P&Z LWCD	5 press releases/year
	2. Implement public education efforts on the importance of wetlands, greenspace and pollinator habitat.	UWEX P&Z LWCD	20 contacts/year
	3. Encourage voluntary compliance with agricultural performance standards and prohibition.	LWCD DNR	20 contacts/year

***Bold print Actions are priorities**

GOAL V: REDUCE WIND EROSION

OBJECTIVES	ACTIONS*	MANAGEMENT TEAM	MEASUREMENT TOOLS
INCREASE PROTECTED ACREAGE.	1. Identify cropland in need of wind erosion BMPs and refer to Central Wisconsin Windshed Partners (CWWP) for voluntary participation.	CWWP NRCS LWCD	2 growers/year
	2. Provide administration of CWWP Project and its annual work plan.	LWCD NRCS CWWP	1 Plan/year
	3. Install at least five new miles of windbreaks and/or living snow fences annually and maintain for three years.	CWWP NRCS LWCD	5 miles/year
B. INFORMATION AND EDUCATION OBJECTIVE: ESTABLISH AND MAINTAIN PUBLIC SUPPORT FOR WIND EROSION CONTROL.	**1. Provide education to local schools during field trips to the Hancock Agricultural Research Station.**	CWWP	15 attendees/year
	2. Educate clientele at appropriate trade shows and educational venues.	CWWP	20 attendees/year
	3. Educate State, County, and local elected officials on the implications of wind erosion.	CWWP	2 contacts/year
	4. Partner with WPVGA to educate their constituency on the benefits of wind erosion control.	CWWP WPVGA	2 contacts/year

***Bold print Actions are priorities**

GOAL VI: REDUCE SURFACE WATER POLLUTION ON WATERBODIES TO A LEVEL THAT WILL REMOVE THEM FROM THE EPA 303(D) LIST

OBJECTIVES	ACTIONS*	MANAGEMENT TEAM	MEASUREMENT TOOLS
A. DEVELOP AND IMPLEMENT NINE KEY ELEMENT WATERSHED RESTORATION PLANS	1. Work with the Friends of Mill Creek Watershed, Inc. (FOMC), Farmers of Mill Creek Watershed Council, Farmers for Tomorrow, government agencies, and private conservation organizations to secure funding for implementation.	Portage Co LWCD Wood Co LWCD RC&D FOMC Private Organizations DNR NRCS DATCP UWSP UWEX FWS	2 meetings/year One or more cropland practices on 100 acres/year
	2. Obtain grant funding. As Portage County LWCD staff and resources allow, help implement the Mill Creek and 14 Mile Creek Watershed plan milestones via adoption of agricultural practices described in plan.		
	3. Encourage establishment of new farmer led groups within the Mill Creek and 14 Mile Creek watersheds.		
B. REDUCE RUNOFF AND INCREASE INFILTRATION	**1. Inventory and document the location and extent of altered wetlands. Provide technical and financial assistance for wetland restoration.**	LWCD NRCS	5 acres/year
	2. Provide technical and financial assistance to meet State NPS pollution prohibitions and performance standards and voluntarily implement BMPs.	LWCD NRCS FWS	2 practices/year
C. REDUCE NONPOINT SOURCE (NPS) POLLUTION	1. Inventory and document extent of NPS pollution. Use Wisconsin River and Upper Fox Wolf River TMDL reports to focus limited LWCD staff and financial resources in selected watersheds to meet or make progress towards TMDL edge of field reduction targets on agricultural fields/farms.	LWCD DNR	2 farms/year
	2. Provide technical and financial assistance to voluntarily implement BMPs.	LWCD NRCS FWS	3 practices/year
	3. Provide technical and financial assistance to meet: (1) state nonpoint source agricultural prohibitions and performance standards, and (2) TMDL edge of field reduction targets on agricultural fields/farms.		1 farm/yr verified in compliance with NR 151
	4. Provide education programs to implement nutrient and pest management plans for improved water quality and restore nutrient impaired waters.		1 program/year
	5. Work with DNR to evaluate effectiveness of BMPs on water quality and restoring nutrient impaired waters using SnapPlus or other modeling tools and/or WQ monitoring.	DNR LWCD	2 fields/practices per year
D. EDUCATE LANDOWNERS ON NATURAL RESOURCE CONCERNS AND POSSIBLE REMEDIAL BMPS	**1. Regularly attend Friends of Mill Creek, Farmers of Mill Creek Watershed Council, Farmers for Tomorrow, and potential future farmer led group meetings and assist with their educational work plan.**	LWCD UWEX NRCS	3 meetings/year

***Bold print Actions are priorities**

GOAL VII: PROVIDE ACCURATE INFORMATION ABOUT NATURAL RESOURCES TO ALL CUSTOMERS

OBJECTIVES	ACTIONS*	MANAGEMENT TEAM	MEASUREMENT TOOLS
A. ENHANCE AND MAINTAIN A COUNTY GEOGRAPHIC INFORMATION SYSTEM (GIS) TO REPORT ACTIVITIES, ACCOMPLISHMENTS, RESOURCE PROTECTION STATUS AND COMPLIANCE WITH NR 151	1. Cooperate with other agencies to develop and maintain County GIS.	P&Z LWCD DNR NRCS	As requested
	2. Secure funds to hire technical staff to develop and maintain GIS.	P&Z LWCD	Secure funding to hire 1 additional staff
	3. Publish conservation data through County internet mapping application.	LWCD P&Z	1 layer/year
B. PROMOTE YOUTH EDUCATION PROGRAMS	1. Promote and provide access to Stewardship Week materials to educators and youth leaders.	LWCD	10 educators/youth leaders
	2. Promote and provide scholarships for youth conservation camps.	LWCD	2 scholarships
	3. Coordinate Conservation Poster and Speaking contests.	LWCD	30 participants
	4. Maintain website with youth education programs.	LWCD	As needed
	5. Provide classroom learning opportunities.	LWCD	100 students

***Bold print Actions are priorities**

Rev. 2019

Appendix F.

DNR Natural Resource Report

WATERSHED	Old Manure Pits	Unspecified Nonpoint Source Pollution	Streambank Pasturing	Woodlot Pasturing	Streambank Erosion	Wind Erosion	Cropland Erosion	Barnyard/Exercise Lot Runoff	Pesticide/Herbicide Toxicity	Nutrients	Sedimentation/Turbidity/Siltation	Bacteria	Dredging	Discharge Fluctuations	Groundwater Quantity/Quality	Irrigation Induced Low Base Flow	Cranberry Marsh	Farmland Loss	Fire Ash Deposition	Nonmetallic Mining	Beaver Dams	Increased Stream Temperatures	Habitat Loss	Fish Migration Interference	Heavy Canoe Use	Urban Development	Urban Stormwater Runoff	Point Source Municipal	Point Source Industrial	Organic Chemical Toxicity or Bioaccumulation	Heavy Metal Toxicity	Industrial Toxicity
Mill Creek	X		X		X			X		X	X	X		X	X							X	X					X	X			
Little Eau Pleine River			X	X	X		X	X		X	X	X					X			X			X				X	X				
Little Eau Claire River											X										X											
Little Plover and Plover Rivers		X	X		X	X		X	X		X	X			X	X		X		X	X	X	X	X	X	X	X				X	
Seven Mile and Ten Mile Creeks		X	X		X	X			X		X			X	X	X	X		X		X			X							X	
Four Mile and Five Mile Creeks		X	X		X	X				X	X		X		X		X		X		X			X							X	
Upper Little Wolf		X	X		X		X	X			X		X	X		X					X		X									
Tomorrow/Waupaca River		X	X		X		X	X	X		X	X			X	X						X	X	X	X	X	X	X	X		X	X
Wisconsin River		X								X	X	X											X	X			X	X	X	X	X	X