

Land and Water Resource Management Plan

Plan Prepared By: Portage County Planning and Zoning Department
Land 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 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 Conservation Committee (LCC), 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. It is our hope that the next ten years will be used as a stepping stone to an enlightened era of wise natural resource use by all.

The Land Conservation Division's (LCD) 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 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 initiated at the end of 2003 and again at the end of 2008. Surveys conducted for the County comprehensive planning process and lake management planning process 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 and low biotic indexes. As a result, Mill Creek is on the Environmental Protection Agency's (EPA) 303(d) list. The central sand plain is composed of light soils with areas of high 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. Portage County has an approved Erosion Control Plan.

Goals of the LWRM Plan: Reduce the Decline in Water Quality Due to Urban Factors, Reduce the Decline in Groundwater 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 Mill Creek to a Level That Will Remove it From the EPA 303(d) List and Provide Accurate Information About Natural Resources To All Customers.

Budget Summary: Approximately \$700,000 annually has been expended on LWRM Plan implementation in recent years. The County will attempt to obtain revenues to continue these levels throughout the duration of this Plan.

Introduction

The Portage County LWRM Plan was developed to assist the Portage County LCC, 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, 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 LCD 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 in 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 LCD 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 LCC's 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 LCD 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 LCD should be in the gathering and dissemination of information, and also in providing technical assistance for the County.

A survey conducted for the County comprehensive planning process had nearly 6,700 respondents, and it 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 (Appendix B and C respectively). 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 for these issues.

Plan Coordination:

The identified goals were assimilated by the LCD in a uniform text to add consistency and to represent what the LCD 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 LCD 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 LCD. The County Board approved the Plan on July 20, 2004.

The plan update initiated in December 2008 consisted of consultation with an Advisory Group (Appendix A) 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.

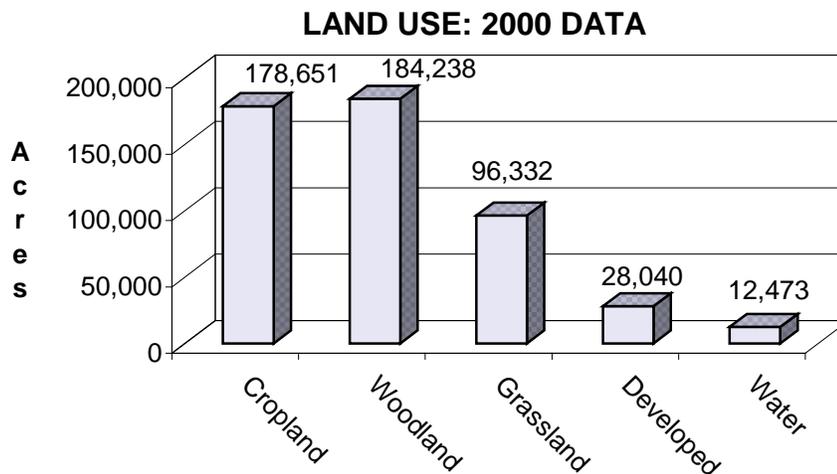
Land Use Trends Update

There were approximately 61,405 people living in Portage County in 1990, 68,227 in 2003 and 69,959 in 2008.

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 8 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.

Figure A Portage County Land Use Data



Agricultural Trends Update

(For comparison purposes, 2002 data is shown in parentheses.) According to the 2007 Census of Agriculture, Portage County has 1,066 (1,197) farms and 206,817 (211,222) acres of cropland, which is a just under 40% of the total land area. There is 91,718 (92,330) acres of cropland under irrigation, which is slightly over 44% of the cropland acres. The total market value of agriculture products sold from all farms is \$196,052,000 (\$138,949,000), with an average per farm of \$183,914 (\$116,081).

The average length of the growing season in Portage County is 140 days, from approximately May 7 to September 24. Portage County leads the State in the production of snap beans, potatoes, and sweet corn, and is second in the State in green pea production. In 2006, there were 152 (168) Grade A dairy herds, and 24 (36) Grade B herds. These numbers have been declining annually. In 2006, a total of 13,300 (13,500) cows produced an average of 17,600 (16,600) lbs. of milk per cow. This data was taken from the 2007 Wisconsin Agriculture Statistics publication.

Data from 1997 to 2006 indicates an increase in the number of farms from 913 to 1,066. The number of farmed acres increased from 262,799 to 281,575, resulting in an average per farm size decrease from 288 to 264 acres. The average net cash income per farm operation in 2006 was \$40,503. Over one half of Portage County farms reported an average net loss of \$10,792. Unless there is a significant change in the agricultural economy, this trend is likely to continue. It also raises the danger of 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.

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 is generally developing. 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 due to different forms of land use. Because of the irregular hills, conservation practices are sometimes difficult to apply to correct soil erosion problems.

Water Resources

Surface waters are identified in two distinct river basins: The Wisconsin River Basin, and the Wolf River Basin. 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 the clay soils of the region. These conditions cause excessive runoff, resulting in flashy streams and long term saturated soil conditions. Best Management Practices (BMPs) will improve and protect valuable soil, water, and wildlife resources for all citizens. The DNR 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.

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. Information about groundwater and groundwater protection can be found on the County website: <http://www.co.portage.wi.us/Groundwater/index.htm> The land use in this area contains

large acreages of irrigated cash crop production, as well as an increasing number of un-sewered residences. Some examples of concerns for the resource, which address the quality and quantity of water are:

- Pollution of the groundwater from cropland and septic systems
- A decline in groundwater levels from excessive pumping causing lake water levels to drop and rivers to dry up
- Conflict of interest for water management, such as drainage for agricultural crops and adjacent wetlands being managed for wildlife and flood control
- Poorly sited livestock operations that cause degradation of surface water and groundwater

Because most runoff from barnyards is close to channelized flow in the Mill Creek watershed, located in the northwest quarter of the County, nutrient loading of surface water is a concern. According to DNR Taskforce findings in 1978, sampling at two sites on the creek were recorded. Biotic indexes were 4.12 and 4.96. According to DNR standards, any index of 3.75 or greater is considered "very poor", which is the lowest category for water quality. Land uses involving mainly dairy, row crop production, and the associated handling of animal wastes can cause high concentrations of nitrogen and phosphorus in runoff from these sites.

The Tomorrow River Watershed area has similar issues, but the animal waste runoff problem is typically limited to within one mile or less from the River because of glacial topography and porous soils. Most nutrients reach the River via groundwater. 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.

Residential development around lakes and streams has impacted water quality and aesthetics. Several lakes, such as Lake Helen and Lake Emily, have experienced low oxygen conditions in the past, affecting the fish populations. Green areas, buffer zones, and possibly sewer systems might be incorporated into developments. A Lake Management Planning program has been initiated and will be completed by summer of 2009. The increased use of these lakes has led to the introduction of aquatic invasive species. The Portage County LCD, DNR and UWSP have utilized grant opportunities to hire staff and begin information and education prevention campaigns. This work has proven to be successful and the County should continue to pursue additional grant funding.

Streambank erosion has been a problem in several areas. The drainage ditches in Buena Vista and the Plover River have identified problem areas. McDill Pond is an example of the negative impacts of erosion and nutrient loading in the Plover River. Streambank areas were fenced to protect them from livestock. More investigation could be conducted to identify potential sources of erosion and pursue Targeted Runoff Management (TRM) grant opportunities for restoration.

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 cause algae blooms in our reservoirs, and can possibly contaminate the fish resource. While some wind erosion control systems have been implemented recently, a concern remains for the lack of minimum tillage on large potato and vegetable fields. Proper soil health, resulting in more stable soil with improved fertilizer and pesticide management, is necessary to protect groundwater contamination in this sand area. This will improve water holding capacities and limit leaching of chemicals.

Figure B. Portage County Watersheds

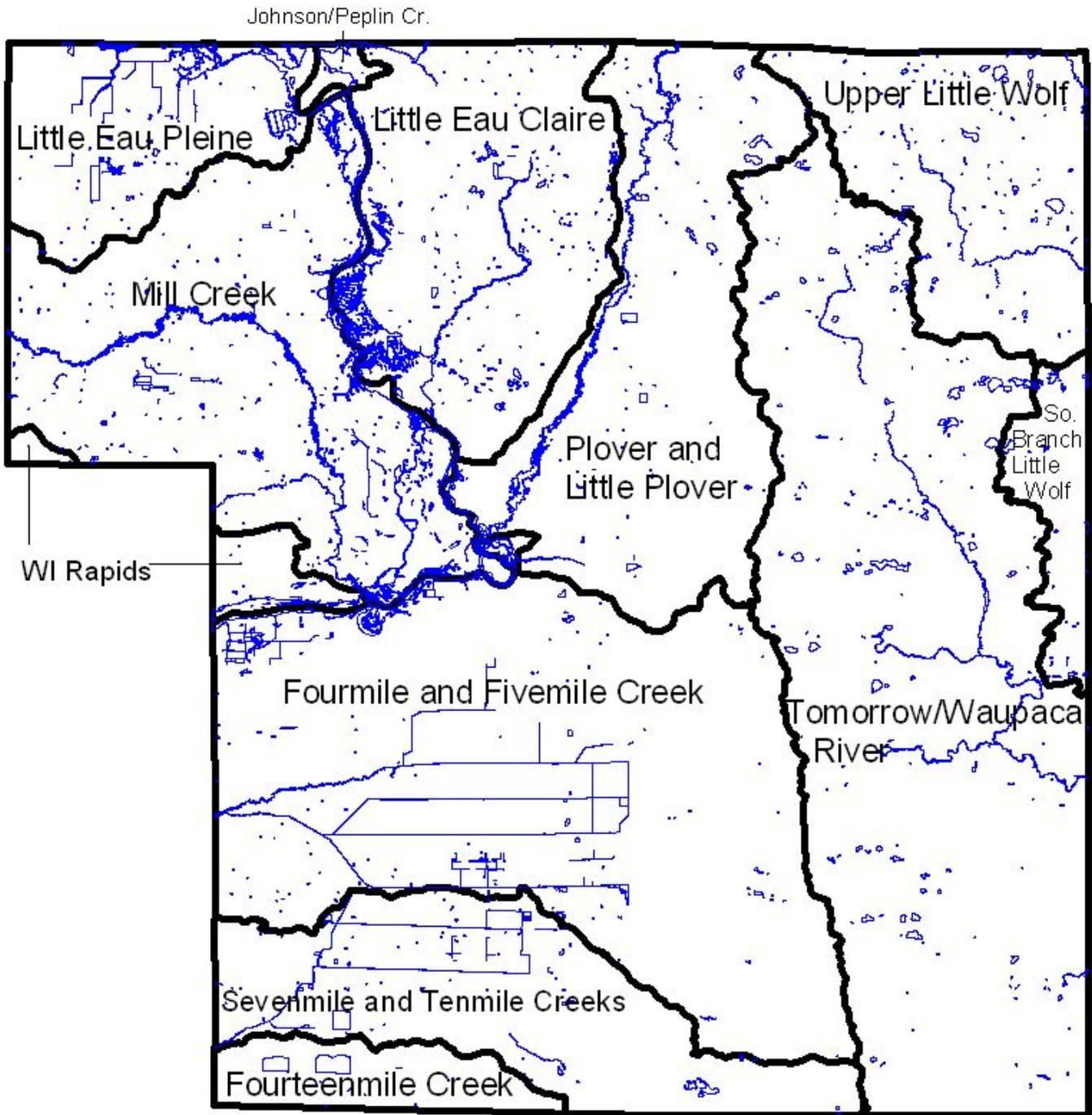


Table 1 Outstanding (ORW) and Exceptional (ERW) Resource Waters in Portage County Watersheds

Watershed Name	Miles of ORW	Miles of ERW	Name of ORW=s In Portage County	Name of ERW=s In Portage County
Mill Creek	0	0	None	None
Little Eau Pleine River	0	0	None	None
Little Eau Claire River	0	0	None	None
Little Plover and Plover Rivers	0	8.5	None	Little Plover (class I portion) Lost Creek
Seven and Ten Mile Creeks	0	6	None	Ditch #9 (class 1 portion) North Branch Ten Mile Cr. South Branch Ten Mile Cr.
Four Mile and Five Mile Creeks	0	13.7	None	Boundary Lateral Buena Vista Creek (class 1 portion) Ditch 3 (class 1 portion) Duck Creek (class 1 portion) Isherwood Lateral Unnamed Creek (Jeske Lateral)
Upper Little Wolf River	1.8	17.1	None	Bradley Creek
Tomorrow/ Waupaca River	31.5		Emmons Creek Allen Creek Radley Creek Tomorrow/Waupaca R. (class I portion, mile 39.8-43.3 and 50.0-63.3)	Bear Creek (class I portion) Mack Creek Murry Creek Poncho Creek Spring Creek (class I portion) Upper Spring Creek Stedman Creek Stoltenburg Creek (class II portion, mile 0-1.2) Tomorrow/Waupaca R. (class II portion, mile 26.6-39.8 and 43.3-50.0)

Table 2 Nonpoint Source Priority Rankings

Rankings of Portage County Watersheds as calculated by the Wisconsin Department of Natural Resources. Scores are based on 0-10, with 0-3 equal to a low priority, 4-6 equal to a medium priority, and 7-10 equal to a high priority. The Tomorrow/Waupaca River was selected as a Priority Watershed Project in 1993 and was completed in 2008.

Watershed Name	Streams Score	Lakes Score	Groundwater Score	Surface Water Ranking	Groundwater Ranking
Mill Creek	7.2	0	10	High	High
Little Eau Pleine River	3.26	0	5	Low	Medium
Little Eau Claire River	5.7	0	10	Medium	High
Little Plover and Plover Rivers	4.57	2.47	10	Medium	High
Seven and Ten Mile Creeks	7.8	0	10	High	High
Four Mile and Five Mile Creeks	4.8	3.99	10	Medium	High
Upper Little Wolf River	Medium	not ranked	High	Medium	High
Tomorrow/ Waupaca River	Medium	not ranked	High	Medium	High

Table 3 DNR Natural Resource Report

RESOURCE ISSUES

11

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	
Wisconsin River		X								X	X	X											X	X			X	X	X	X	X	X	X

Upper Wisconsin River Main Stem

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. This portion of the River is classified as a warm water fishery and aquatic community, with a diverse game and non-game fishery. However, the River is only partly supporting its full potential use classification. The section of River in Portage County receives discharges from three municipal and four industrial wastewater treatment facilities. Its wasteload is allocated from the Whiting Dam downstream (out of Portage County) to the Petenwell Dam. Wasteload 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 include:

- City of Stevens Point
- Village of Plover
- Village of Whiting

Industrial facilities include:

- Neenah Paper Company
- Foremost Foods
- McCain Foods, Inc.
- New Page Corporation -Wisconsin River Division

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. Chemicals of concern include polychlorinated biphenyls (PCBs), heavy metals, such as mercury, and dioxin (2378-TCDD). Pentachlorophenol (PCP), a banned and persistent wood preservative, has been detected in River sediments below the Merrill Dam, and below and above the Rothschild Dam (Weyerhaeuser). Known PCP spill sites adjacent to the River exist between Merrill and Rothschild. Detailed sediment sampling has been recommended by the DNR to determine the distribution and extent of PCP contamination.

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 1985-1987). In addition to the Statewide mercury advisory, the Important Health Information for People Eating Fish From Wisconsin Waters 1998 publication recommends:

PCB advisory

Wisconsin River from Dam at Merrill to Nekoosa Dam - eat no more than one meal a week (52 meals per year) for the following: Carp all sizes, Channel Catfish all sizes, Redhorse all sizes. All other species Follow the Safe-eating guidelines.

Mercury advisory

Portage County - Collins Lake Walleye larger than 20 - one meal a month for men and older women. Women of children bearing age or children under the age of 15 - do not eat.

Nutrient input is another concern in the Upper Wisconsin River sub-basins. Nutrient sources are from both point and nonpoint sources. The reservoirs and backwaters suffer from severe algae blooms and dense growths of aquatic plants due to excess nutrients, such as phosphorus. The reservoirs Petenwell and Castle Rock (downstream of Portage County) have severe use impairments from algae blooms (some toxic), and increased sedimentation and siltation because of excess available phosphorus. Wastewater treatment plants (WWTPs) are not required to remove all nutrients, and at low flows their contribution to the river can be significant.

Resources Issues

Organic chemical toxicity or bioaccumulation	Bacteria
Unspecified nonpoint source pollution	Heavy metal toxicity
Nutrients	Habitat loss
Sedimentation/turbidity	Fish migration interference
Urban stormwater runoff	Point source municipal
Point source industrial	Industrial toxicity
Stormwater	

Mill Creek Watershed

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. B, page 8). About 101 square miles of the watershed are within Portage County. Mill Creek is 47 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. Mill Creek is defined under the Federal Clean Water Act as a full fish and aquatic community. The DNR classes Mill Creek, from its mouth to 33 miles upstream, as a warm water sport fish community. This section of the creek (all 33 miles) is judged by DNR to partly meet its biological use potential. From 33 to 47 miles upstream, Mill Creek is classed as only capable of supporting limited aquatic life. This section of Mill Creek is judged to be fully meeting its biological use potential. The Mill Creek Watershed has 29 streams (including Mill Creek) totaling 105 miles. No streams in the watershed are classed as outstanding or exceptional resource waters (Table 1, page 9). Out of the 105 stream miles in the watershed, 16 miles are judged to be fully, and 54 miles are judged to be partly, supporting their biological potential uses, with 33 miles unknown.

Potential Biological Use Subtotals

Warmwater Sport Fishery	52.0 miles
Warmwater Forage Fishery	4.0 miles
Limited Aquatic Life	16.0 miles
Unknown	<u>33.0 miles</u>
Total	105.0 miles

The watershed is listed by the DNR as being severely affected by nonpoint source (NPS) pollution. The watershed rankings calculated by the DNR list Mill Creek as a **high** priority for surface water and groundwater (Table 2, page 10). A high surface water ranking indicates nonpoint sources of pollution are present that impact water quality and can be controlled or corrected with BMPs. A high groundwater ranking indicates the watershed has susceptibility for groundwater contamination. NPS controls have the potential to improve groundwater quality.

Biotic index sampling by the DNR classifies the water quality of Mill Creek as poor to very poor. Areas of streambank pasturing throughout the watershed have destroyed habitat and caused streambank erosion. Barnyard runoff, particularly in the lower sections of Mill Creek where animal densities are highest, adds excess nutrients and sediments to the stream, causing algae blooms, high bacteria levels, and siltation of the streambed. In-stream nitrate concentrations have been reported as high as 3 ppm. The creek experiences discharge fluctuations due to large volumes of surface drainage. The shallow depth and low base flow volumes lead to increased stream water temperatures. Loss of habitat and degraded water quality are the probable cause of the low biotic index ratings.

Five municipal WWTPs 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. In addition, the WWTPs may have industries discharging to them, and therefore, have the potential to discharge potential toxics such as manganese, copper, lead, zinc, mercury, chromium, cyanide, silver, nickel, fluoride, PCBs, trichloroethylene, dichlorobenzene, and phenols. The larger WWTPs of Marshfield and Junction City, with more industrial customers, are more likely to discharge toxins; however the other WWTPs also have the potential.

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 Total Maximum Daily Load (TMDL) project has been designed for Mill Creek. Modeling is scheduled to be complete in 2009.

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. B, page 8). 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 5 miles of the Little Eau Pleine River are in Portage County.

The Little Eau Pleine River is defined under the Federal Clean Water Act as a full fish and aquatic community. The DNR classes the Little Eau Pleine River from its mouth to 28.6 miles upstream as a warm water sport fishery (all of Portage County). Only 12.9 miles of this segment are judged to partly meet this potential, and the remainder is unknown. The Little Eau Pleine River is classed from 28.6 to 57 miles upstream as a warm water forage fishery. All of this section, 28.4 miles, is judged to be partly meeting its potential biological use. No streams in the watershed are classed as outstanding or exceptional resource waters (Table 1, page 9).

Potential Biological Use Subtotals

Warmwater Sport Fishery	39.1 miles
Warmwater Forage Fishery	34.4 miles
Limited Forage Fishery	21.3 miles
Limited Aquatic Life	9.4 miles
Unknown	<u>93.0</u> miles
Total	197.2 miles

Biotic index sampling on the Little Eau Pleine River by the DNR classified the water quality as fair to fairly poor. Streambank erosion and animal waste runoff are suspected causes. Portions of the River flow through the McMillan and Mead State Wildlife Areas, where it is important to waterfowl.

The DuBay Cranberry Company discharges water from a cranberry marsh to an unnamed ditch in the SE 1/4 of the SW 1/4 of T25, R7E, Section 9. The ditch then flows directly into Lake DuBay. The impacts the cranberry operation has on water quality are unknown.

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. B, page 8). 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 2 miles are within Portage County. Hay Meadow Creek is included in the Little Eau Claire River Watershed. Hay Meadow Creek's 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.

Both the Little Eau Claire River and Hay Meadow Creek are defined under the Federal Clean Water Act as a full fish and aquatic community. The DNR classifies both waters as warm water forage fish communities. It is unknown if either stream is meeting its biological use potential.

Limited information is available on the 23 (including the Little Eau Claire River and Hay Meadow Creek) streams totaling 72 miles in the Little Eau Claire River Watershed. No streams in the watershed are classed as outstanding or exceptional resource waters (Table 1, page 9). The conditions of all watershed streams are unknown in terms of meeting their biological potential use. In fact, only the Little Eau Claire River and Hay Meadow Creek have biological use designations from the DNR.

Potential Biological Use Subtotals

Warmwater Forage Fishery	46.0 miles
Unknown	<u>26.0</u> miles
Total	72.0 miles

Because of the limited information available on the watershed, no NPS pollution problems are listed by the DNR. Only beaver dams (removal) are thought to be a resource issue. The watershed rankings calculated by the DNR list the Little Eau Claire River watershed as **low** for surface water, and as **high** for groundwater pollution control work (Table 2, page 10).

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. B, page 8). The Little Plover River is 6 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, from its mouth to 1.25 miles upstream, is defined under the Federal Clean Water Act as a full fish and aquatic community. The DNR classes this section (Springville Pond) as a warm water sport fish community. From 1.25 to 6 miles upstream the Little Plover is classed as a Class I trout stream by the DNR. Springville Pond is judged to partly support, while the remainder of the stream is judged to fully support, its biological use potential by the DNR.

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. In addition, groundwater monitoring of six well nests within the basin has been conducted by the UWSP since 1980.

Nutrient concentrations, especially nitrate-N, have been increasing in surface and groundwaters within the Little Plover River Basin. In-stream nitrate concentrations have increased from 4 mg/L to 7 mg/L in the past 25 years (Shaw, et al., 1995). Groundwater concentrations of nitrate-N above the enforcement standard of 10 mg/L have been well 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 milfoil. Phosphorus is the limiting nutrient in Springville Pond.

The impacts of the high in-stream nitrate concentrations are unknown. However, nitrate concentrations of 2 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. Recent declines in trout reproductive success have the DNR concerned. 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).

		Concentration Range (ppb)
These included:	Atrazine	0.1-0.5
	De-Ethyl Atrazine	0.1-0.9
	De-Isopropyl Atrazine	0.1-0.7
	Simazine	0.1-0.2
	Metribuzin	0.1-1.1
	Alachlor	0.3-3.5
	Metolachlor	0.1-3.0
	Hexazinone	0.1-0.2

Two pesticides or pesticide metabolites were detected in surface waters.

		Concentration (ppb)
These included:	De-Isopropyl Atrazine	0.1
	Metribuzin	0.1

The greatest loading rate of triazines to the Little Plover River occurred between Highway 51/I39 and Hoover Avenue, totaling 1.22 lb triazine/acre streambed/year. The average loading rate for the Little Plover River was 0.25 lb triazine/acre streambed/year. The effects of pesticides on the fauna of the Little Plover River are unknown.

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 downward trend in groundwater elevations since 1980 has been found in the UWSP study in three of six well nests. Modeling has demonstrated that the pumping of the municipal and irrigation wells is reducing flow in the river (Kraft, 2009). Loss of flow, coupled with declining water quality, may adversely affect trout populations through loss of habitat, food, and environmental stress. A portion of the river dried up for several weeks in 2005, 2006 and 2007. A Workgroup has met approximately bi-monthly since early in 2006 to address this issue. The Workgroup is made up of “Friends of the Little Plover River”, Villages of Plover and Whiting, UWSP, DNR, Portage County, Trout Unlimited, Del Monte, Stora Enso, Neenah Paper, several area potato and vegetable growers and WI River Alliance, along with advisory support from: WI Wildlife Federation, WI Geologic and Natural History Survey, USGS, USDA-NRCS, US EPA, Golden Sands RC&D, Rural Water Association and Earth Tech.

The Plover River, from its mouth to 35.5 miles upstream, is defined under the Federal Clean Water Act as a full fish and aquatic community. The DNR classes this section as a warm water sport fish community. From 32.5 to 47 miles upstream, the Plover River is classed as a Class III coldwater fishery. From 47 to 50.6 miles upstream, it is classed as a Class II coldwater sport fishery and is judged to partly meet this biological potential. From 50.6 to 64 miles upstream, the Plover River is classed as a Class I coldwater sport fishery and is judged to partly meet this potential. This section of the Plover River is also classed as exceptional resource waters (Table 1, page 9).

The Watershed has 30 streams totaling 123 miles. Thirteen streams in the watershed are classed as outstanding or exceptional resource waters. Two, the Little Plover River and Lost Creek, are in

Portage County (Table 1, page 9). Out of the 123 stream miles in the watershed, 32 miles are judged to be partly supporting their biological potential uses, with 91 miles unknown.

Potential Biological Use Subtotals

Cold Water Sport Fishery	68.25 miles
Warmwater Sport Fishery	35.75 miles
Warmwater Forage Fishery	3.0 miles
Unknown	<u>16.0 miles</u>
Total	123.0 miles

The watershed is listed by the DNR as being significantly affected by NPS pollution. NPS pollution problems exist, but are more localized, than in other watersheds. The watershed rankings calculated by the DNR list as medium for surface water, and **high** for groundwater (Table 2, page 10). A high groundwater ranking indicates the watershed has susceptibility for groundwater contamination and NPS controls have the potential to improve groundwater quality. Also, documentation of groundwater problems, such as nitrates and pesticides, exist from NPS sources.

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. There is some evidence of streambank pasturing in the watershed. Lost Creek is reported to suffer from siltation problems, especially in the lower sections, due to a lack of buffering. The siltation of streams and loss of groundwater flows combine to slow and shallow streams, and can lead to increased stream water temperatures. Biotic index sampling by the DNR classifies the watershed water quality as fair.

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. B, page 8). About 63 square miles of the watershed are within Portage County. Sevenmile Creek is 6 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 7 miles of Tenmile Creek are within Portage County.

Sevenmile Creek is classed as a Class I coldwater sport fishery from its mouth to 3.5 miles upstream. From 3.5 to 6 miles upstream, Sevenmile Creek is classed as a warmwater forage fishery. It is unknown if Sevenmile Creek is meeting its biological use potential.

Tomorrow/Waupaca River Watershed

The Tomorrow/Waupaca River Watershed includes 320 square miles in Portage, Waupaca, and Waushara Counties (Fig. B, page 8). Sixty percent of this area is in Portage County. The following water fishery classifications exist on this river system:

- Potential warm water sport fishery mouth (0) to 26.6 miles upstream
- Potential cold water Class II sport fishery 26.6 to 39.8 miles upstream
- Potential cold water Class I sport fishery 39.8 to 43.3 miles upstream
- Potential cold water Class II sport fishery 43.3 to 50.0 miles upstream
- Potential cold water Class I sport fishery 50.0 to 63.3 miles upstream
- No assessment of potential use supported for all 63.3 miles of stream

The watershed is ranked medium priority for streams and high priority for groundwater protection. 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.

Of the 44 streams totaling 171.3 miles in watershed, 53.3 miles are listed as threatened, 5 miles are partly supporting potential use, 14 miles are fully supporting their biological potential use, 65 miles are unknown, and 34 stream miles were not assessed. DNR Water Resource Management staff should conduct comprehensive basin assessment stream monitoring for the Tomorrow/Waupaca River.

Upper Little Wolf River Watershed – Little Wolf River

The Upper Little Wolf River Watershed has approximately 50 square miles located in Portage County (Fig. B, page 8). The following water fishery classifications exist on this river system:

Potential warm water sport fishery 26.6 to 39.6 miles upstream from mouth, and is partly supporting its potential.

39.6 to 49.6 miles upstream is classed as a Class II cold water sport fishery and is listed as a threatened resource.

49.6 to 51.1 miles upstream is classed as a Class I cold water sport fishery and is listed as a threatened resource.

51.1 to 58.6 miles upstream is classed as a Class II cold water sport fishery and is listed as a threatened resource.

58.6 to 61.1 miles upstream is classed as a Class I cold water sport fishery and is listed as a threatened resource.

This watershed ranks as a high priority for groundwater, and medium priority for stream protection. Of the 37 streams totaling 153.6 miles, 101.1 miles are classified as threatened, 11.5 miles are fully supporting the potential use, 5.3 miles are not meeting potential use, 13 miles are partly meeting potential use, 22.7 miles are unknown, and 28 miles of streams were not assessed for classification purposes.

Primary problems in this watershed are runoff from specific barnyards, some cropland erosion, hydraulic modification, impact from human development, streambank erosion, habitat degradation, beaver dams, sediment, and streambank pasturing. The main point source potential problem is the Village of Rosholt.

Fourmile/Fivemile Creeks

Fourmile/Fivemile Creek Watershed has approximately 16.75 square miles located in Portage County (Fig. B, page 8). The following water fishery classifications have been assigned to this river system:

Fourmile Creek - Potential warm water sport fishery from mouth to 8 miles upstream with 8 miles partly supporting this potential use. Potential Class II cold water sport fishery from 8 to 20 miles upstream with 12 miles partly supporting its potential use.

Fivemile Creek - Potential warm water sport fishery from mouth to 2.1 miles upstream. It has a potential Class II cold water sport fishery from 2.1 to 5.8 miles upstream. Potential Class III cold water sport fishery 5.8 to 11 miles upstream. It is unknown if any part of Five Mile Creek is supporting its potential use.

The biotic index for this watershed ranges from excellent to poor water quality depending on the location and time sampled. In-stream nitrate levels have reached highs of 3-6 ppm. Of the 35 streams in basin totaling 135.2 miles, 41.6 miles are partly supporting their potential use and 93.9 miles are unknown.

The primary concerns relating to water quality are streambank erosion, sedimentation, wind erosion, streambank pasturing, past dredging techniques, water diversions, water temperatures and heavy metal toxicity.

Wildlife Resources Update

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 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. However, with increased economic pressure to make "all" land produce some economic return, we are in danger of losing a valuable resource. Landowners continue to withdraw their land from use by others in an attempt to eliminate trespassing. 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. Tight, clay soils dominate the northwest and light, sandy soils are found in the east and south. 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. Although these regions have generally been identified as having annual soil loss rates of five tons per acre or less, certain relationships of specific land use methods, soil type, percent of slope, and length of slope, result in some areas having eight or more tons per acre soil loss per year. 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. These are mainly small areas on farms and gravel pit areas that have left scars on the land, which need to be addressed.

Woodland Resources Update

A significant portion of Portage County is commercially valuable forestland. Of Portage County's 526,813 acres, Forest Service surveys of 2006 indicate slightly over 30% (159,724) acres, is forested, down 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 south and southwest. Maple or aspen dominate the timber stands in the north. Red and white pine dominates 19% of the forestland, mostly in the southeast.

Private landowners control 94% of this forestland. Only 6% 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. 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. Currently, 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 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 woodlot 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 10 acres entered under a 25-year or 50-year contract. As of January 2009, there were 45,000 acres in the county under the intensive management of the Managed Forest Law, over 4,000 of which are open to the public.

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.

Goals, Objectives, and Work Plan

The compilation of the Goals, Objectives, and Work Plan was a coordinated effort between the LCC, LCD, 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 H) were originally developed in 1999 by the LWRM Steering Committee, revised in 2004 and again by the Advisory Group (Appendix A) in 2009 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. Wind erosion reduction, protection and improvement of groundwater and minimizing urban sprawl are ranked as the highest priorities, as shown in Appendix C. Funding shortfalls are expected, which will create a challenge to implement action items over a ten-year period starting January 1, 2010. Each Goal states the identified problem, while the Objectives and action plans (See Appendix H) provide more detailed and measurable steps on how the LCD 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 LCC and LCD 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 LCC and State agencies. Portage County currently contracts with UWSP to provide educational assistance to farmers who wish to develop their own nutrient management plans.

Coordination & Cooperation

The Land 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

Table 4. Performance Standards

Performance standard (<i>Type of standard covered</i>)	Effective Date	Conservation Initiatives
Control soil erosion to meet tolerable soil loss (T) calculated by RUSLE 2. (<i>Cropland</i>)	October 1, 2002	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. (<i>Livestock operations and facilities</i>)	October 1, 2002	Meet NRCS standards for construction, maintenance, and closure using technical standards: 313 (<i>waste storage facility</i>), 360 (<i>closure of waste impoundments</i>), 634 (<i>manure transfer standard</i>).
Divert clean water from feedlots. (<i>Livestock operations and facilities within Water Quality Management Areas</i>)	October 1, 2002	Install diversions, roof runoff systems, subsurface drains, and underground outlets.
Manure Management Prohibitions <ul style="list-style-type: none"> 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. (<i>Livestock operations and facilities</i>) 	October 1, 2002	<ul style="list-style-type: none"> 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. (<i>Cropland</i>)	Effective in 2003 new operations, 2005 for land near impaired or exceptional waters, and 2008 for other existing farms.	Develop and follow an annual nutrient management plan for applying fertilizer or manure according to NRCS 590 Standard. Base plans on soil tests conducted by a DATCP certified laboratory. Become qualified to prepare plan or use qualified planners. Apply nutrients according to UWEX recommendations for crops. Install additional conservation or management practices to reduce nutrient loading.

Identification of Priority Farms

Priority farms are defined as those farms that are in violation of state prohibitions and performance standards. These farms have: significant problems with manure management; croplands with excessive nutrient applications; croplands with excessive rates of soil erosion.

All watersheds in Portage County are either water quality impaired (303d) watersheds or watersheds of Exceptional Resource Water (ERW) or Outstanding Resources Water (ORW) streams. Priority farms will be identified initially through an inventory of existing records and citizen complaints. Portage County will implement its priority farms strategy as resources permit.

- 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 Waste and Manure Management Ordinance Permit.
- Fourth Priority – Farms that receive cost-share assistance under the Land and Water Resource Management program for barnyard runoff control systems.
- 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. Both County and Federal 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 will be disseminated through newsletters published by the Portage County UWEX and the LCD. 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 will be determined based on a records inventory and onsite evaluations as explained below.

The records inventory will involve a cursory review of both State and Federal participants. This process will be ongoing throughout the implementation of the LWRM Plan, with completion planned for 2010. Evaluation methods may include one or more of the following:

- Review of existing conservation plans
- Farmland Preservation Program (FPP) certification
- Existing 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 Geographic Information Systems (GIS).

Compliance will be 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

Funding, Administration, and Technical Assistance

Additional costs for the County to implement performance standards will be approximately two hours of staff time per landowner, which will occur in the documentation and certification process. The LCD 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 LCC. 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
- The review of conservation plans by other parties (Technical Service Provider)
- 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.

The Portage County Animal Waste Storage Ordinance described in Appendix G will continue to be administered by the LCD.

Enforcement

If a landowner is found to be in violation and refuses the technical and financial assistance of the Portage County LCC, they will be referred to the DNR and notified by mail that they are subject to an enforcement action pursuant to NR 151.09. 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 will be utilized as a cost share funding source.

Plan Implementation Budget

The State and local fiscal crisis makes developing a funding plan to achieve the soil and water conservation goals of this plan difficult. Portage County intends to make full use of its State 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 against available Federal program funds, such as the Environmental Quality Incentive Program (EQIP) and the Wildlife Habitat Incentive Program (WHIP), and private grant sources, such as Trout Unlimited, to achieve better cost effectiveness of conservation program implementation. Staff funding includes the CWWP, which is a multi-county project under the administration of Portage County. The CWWP program is financially self sufficient, although decreasing cost share funds threaten their viability. Grant funds through the DNR's TRM program will be sought to implement water quality BMP's.

Projected Funding

An average of approximately \$850,000 annually has been expended by the LCD on LWRM Plan implementation from the years 2006 through 2008. The County will attempt to obtain revenues to continue these levels throughout the duration of this Plan. As the economy is expected to tighten, this level will be difficult to maintain through the duration of the Plan. Due to a large budget deficit at the State level, State grant amounts are unknown, making State grant projections impossible.

Budget Needs

Funding type	2010	2011	2012	2013	2014
Cost share	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000
Staffing	\$487,661	\$502,291	\$517,360	\$532,881	\$542,867

Funding type	2015	2016	2017	2018	2019
Cost share	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000
Staffing	\$559,333	\$576,113	\$593,396	\$611,198	\$629,534

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 LCC, 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 LCC. The LCC reviews yearly accomplishments, and selects fiscal and resource priorities for the upcoming year using the LWRM Plan as their guideline. The LWRM Plan Advisory Group (Appendix A) will also be accessed as needed.

The Resource Review process will also be used to assist in decisions for the political process. However, some impacted resources, such as surface water and groundwater quality, require years to show improvement because of previous long-term chemical 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.

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 runoff 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: Groundwater provides a particularly difficult problem in monitoring. Since the model is composed of a three-dimensional matrix, the Groundwater Citizens Advisory Committee (GCAC) has assigned a subcommittee the responsibility to design this process. The LCC will use this information and offer technical resources to implement this process, as needed.

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. A surface water quality program will be built into all future watershed plans. This information will be used to track long term trends of Portage County water quality.

Revised Universal Soil Loss Equation 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.

Record Inventory: Landowner files will be accessed to determine BMP implementation.

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

Appendices

Appendix A.

Advisory Group and Affiliation

Last Name	First Name	Organization
		Green Circle Trail
Bacon	Roger	Land Conservation Committee
Akeman	Vic	Advisor, Students Peace and Environmental Action Coalition
Anderson	Sue	Ground Water Advocates
Anderson	Del	President, Lake Helen Protection and Rehabilitation District
DeDeker	Bo	Land Conservation Committee
Benedict	Patty	Administrative Secretary, Land Conservation Division
Burns	Edward	Chair, Groundwater Citizens Advisory Committee
Bourget	Jake	Executive Director USDA FSA
Bradley	Steve	County Conservationist, Land Conservation Division
Schuler	Jeff	Director, Planning and Zoning Dept
Haga	Allen Jr	Land Conservation Committee
Burse	William	Secretary, Lake Jacqueline District
Diedrich	Jean	Izaak Walton League Bill Cook Chapter
Dostal	Karen	Boston School Forest, Environmental Education Coordinator
Dougherty	Rebecca	League of Women Voters
Thorstenson	Amy	Coordinator, Golden Sands RC&D
Eiden	Lyle	WDNR Forester
Ellingson	Robert	President, Portage/Wood County Farmers Union
Farah	Cary	Secretary, Tree Lake Association
Freckmann	Bob	Botanical Club of Wisconsin Central Wisconsin Chapter
Freckmann	Sally	Portage County Ice Age Trail
Ostrowski	Michael	City of Stevens Point, Community Development Director
Gifford	Jim	Village of Plover/Springville Pond
Graham	Anne	Friends of Mill Creek Watershed
Gresl	Wayne	President, DuBay PO Assn
Hamerski	Don	Portage County Drainage District
Hartman	Jeff	GIS/LIS Manager, Planning and Zoning Dept
Hausler	Ione	Ag Dept - SPASH
Henke	Jim	Chapter President, Frank Hornberg Chapter Trout Unlimited
Hennemen	Donna	President, Lakehurst Development/Eau Pleine Flowage
Johnson	Scott	Central Wisconsin Environmental Station
Kardash	Lesa	WDNR Wildlife Biologist
Keck	Don	President, Twelve Apostles Musky Club
Klug	Pat	Secretary, Lake Helen Protection and Rehabilitation District
Kolb	Simone	Army Corps of Engineers
Knipfel	Melissa	NRCS District Conservationist
Lochner	Tom	Executive Director, WI State Cranberry Growers Assn
Lord	Bob	Ground Water Advocates

Last Name	First Name	Organization
Kunst	Steve	Associate Planner, Planning & Zoning Dept
Maatz	Duane	Executive Director, Wisconsin Potato and Vegetable Growers Assn
Mahoney	Dan	Village of Plover Administrator
Michel	Eric	President, UWSP Student Chapter of the Wildlife Society
Miller	Leroy	Rosholt High School
Mrozinski	Rich	Izaak Walton League Bill Cook Chapter
Munson	Dr. John	President, Aldo Leopold Audubon Society
Neegard	Jack	President, McDill Inland Lake Protection and Rehabilitation District
O'Brien	Dale	Land Conservation Committee
O'Connell	Dan	Land Conservation Division
Obremski	Scott	Pok-A-Snoz Snowmobile Club
Olson	Carole	Portage County Master Gardeners
Potocki	Stanley	Chair, Planning and Zoning Committee
Pederson	Tim	Ag Dept – Amherst High School
Pence	John	Golden Sands Home Builders Assn
Walters	Jerry	Land Conservation Committee
Polum	Vince	President, Portage County Farmers Union Coop
Powell	Kathy	People for Green Space in Portage County
Rogers	George	Plover River Alliance
Rohde	Shannon	Project Manager, Central Wisconsin Windshed Partners
Rothmann	Terry	Community Foundation of Central Wisconsin
Sabel	Mike	Mid-State Technical College
Schmidt	Ray	Water Quality Specialist
Schrader	Tom	Stevens Point Parks and Rec Dept
Schroeder	Ken	UWEX Agriculture Agent
Wallace	Sarah	Associate Planner, Planning & Zoning Dept
Seiser	Jo	North Central Conservancy Trust
Shulfer	Jerry	President, Friends of Lake Emily
Slagg	Randy	Conservation Technician, Land Conservation Division
Sopa	Charlie	National Farmers Organization
Spaay	Adelle	Stevens Point Flowage PO Assn
Speckmann	Gary	Portage County Parks
Spoerl	Bob	Ducks Unlimited
Stadelman	Rick	Executive Director, Wisconsin Towns Association
Stephens	Rebecca	Friends of Tomorrow/Waupaca River Watershed
Stewart	Jennifer	UWEX Community Resource Development Agent
Thomas	Chris	Dean-CNR, UWSP
Warnecke	Audrey	Green Gloves
		DNR Basin Supervisor
Wentzel	Richard	Sierra Club
Winrich	Barry	Vice-President, Rinehart Lake Association Inc.
Jacowski	Barry	Chair, Land Conservation Committee
Zajackowski	Mark	President, Farm Bureau

Appendix B.

Public Identified Environmental Issues

- Nitrate and pesticide groundwater contamination
- Impact of upland cranberry operations of surface water quality and aquatic ecosystems
- Soil erosion - wind and water
- Urban sprawl
- Wildlife habitat fragmentation
- Water quantity in Little Plover River
- Septic systems
- Environmental costs of actions not figured in
- Timber resources
- Too much shoreland development
- Not enough buildable lots
- Excessive fertilizer use
- Animal waste/nonpoint source runoff
- Air emissions
- Conflicting land/water uses in the Buena Vista Marsh Area
- Steam dewatering
- Unrestricted livestock access to streams
- Land access
- Streambank erosion
- Too many people
- Groundwater contamination from agricultural chemicals
- Data management and accomplishment program (report card)
- Non point source pollution
- Groundwater contamination from residential sources
- Wind erosion/ambient air quality (health issue^{A-3})
- Imported air pollution - Wood County
- Development of shoreland area
- Community/industrial air and water pollution
- Possible changes in rural zoning (ag/residential)
- Runoff of manure/septage from spreading on frozen/heavy soils
- Mill Creek surface water problem - peak discharge/water quality
- Loss of wildlife habitat from industrial farming
- Loss of riparian ground cover or shoreland vegetation
- Storm sewer contribution to pollution
- Groundwater pollution from unused wells
- Inability to monitor state of resources in terms of appropriate models and money.
- Soil loss from wind erosion
- Groundwater quantity
- Protection of marginally developed lands (result of proposed legislation on new septics – Comm 83)
- Farmland preservation

- Lack of resources to address issues (people and fiscal)
- Protection of endangered species
- Divergent environmental goals
- Lack of cooperative planning efforts
- Commitment of government and citizens to make changes
- Increased use of resources (water, land use, timber harvest, etc)
- Economy vs. environment (need to make profit vs. protection of environment)
- Unsewered subdivisions
- Groundwater quality decreasing
- Home owner lawn fertilizer, chemical use
- Cattle in streams
- Wood lot fragmentation - managed size (too small)
- Financial health of agriculture
- Surface water quality decreasing
- Animal waste management
- Agriculture chemical usage - improper use causing problems
- Paper mill waste disposal
- Stream bank development
- Water erosion
- Residential density in non sewerred areas
- Need for more waste water treatment facilities - additional capacity for growth
- Use of salt on highways
- Septage spreading
- Overlapping government agency authority
- Farm/suburban conflict
- Wetland degradation/loss
- Whey spreading
- Lack of knowledge/education of the public
- Housing on wet soils
- Nutrient loading by waterfront development
- Lack of funding for cost sharing
- Farming in drainage district/high water
- Loss of wildlife habitat
- Limited public lands for hunting, fishing, and recreation
- Abuse of private lands by hunter/fisher/recreation
- Non complying septic systems
- Improperly abandoned wells
- Small underground fuel tanks
- Maintenance of manmade impoundments

Appendix C.

Steering Committee Ranked Environmental Issues

<u># of Votes</u>	<u>Concern</u>
42	Groundwater quality decline
30	Urban Sprawl
27	Nitrate and pesticide groundwater contamination
23	Protection of marginally developable lands (Result of proposed legislation on new septic - COMM 83)
22	Wind Erosion
22	Lack of knowledge/education of the public
16	Commercial/industrial air and water pollution
9	Wind and Water Soil Erosion
9	Surface Water Quality
8	Data Management and accomplishment program (report card)
8	Inability to monitor state of resources in terms of appropriate models and money
7	Economy vs. environment (need to make money vs. protection of environment)
7	Too much shoreland Development
7	Animal Waste/Nonpoint source runoff
4	Woodlot fragmentation
4	Streambank erosion
3	Commitment of government and citizens to make changes
3	Wetland degradation loss
2	Lack of funding for cost sharing
2	Loss of wildlife habitat
1	Conflicting land/water uses in the Buena Vista Marsh Area
	Wildlife Habitat Fragmentation
	Septic System
	Environmental costs of actions not figured in
	Not enough buildable lots
	Excessive fertilizer use
	Lowering water table
	Too many people
	Nutrient loading by water front development
	Maintenance of man-made impoundments
	Un-sewered subdivision
	Lack of resources to address issues (people and fiscal)
	Increased use of resources

Appendix D.

Acronyms

BARNY	Wisconsin Barnyard Runoff Model
BMP	Best Management Practice
BOD	Biochemical Oxygen Demand
COD	Chemical Oxygen Demand
CSA	Cost Share Agreement
CWWP	Central Wisconsin Windshed Partners
DATCP	Department of Agriculture, Trade, and Consumer Protection
DNR	Department of Natural Resources
EPA	Environmental Protection Agency
ERW	Exceptional Resource Waters
FCL	Forest Crop Law
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
GIS	Geographic Information System
I&E	Information and Education
IPM	Integrated Pest Management
LCC	Land Conservation Committee
LCD	Land Conservation Department
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
ppb	Parts per billion
ppm	Parts per million
P&Z	Planning and Zoning Department
PCB	Polychlorinated Biphenyls
PCP	Pentachlorophenol
PIE	Public Involvement/Education (GCAC Subcommittee)
RC&D	Resource Conservation and Development
SWP	Stevens Point, Whiting, Plover Wellhead Protection Project
SWRM	Soil and Water Resource Management
TWRP	Tomorrow/Waupaca River Priority Watershed Project
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
WTL	Woodland Tax Law
WWTP	Waste Water Treatment Plant

Appendix E.

Description of Land Conservation Committee and Land Conservation Division

What is the role of Land Conservation Committee (LCC)?

The LCC is empowered to create its own County conservation program. In addition, they choose to conserve their County's natural resources by implementing State and Federal conservation programs. 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 the LCC.** The LCC oversees administration of conservation programs to meet local priorities, conditions, and the needs of land users.

What is the Land Conservation Division (LCD)?

The Land Conservation Division (LCD) of the Planning and Zoning Department is the vehicle by which LCC policies are carried out. According to Chapter 92, Wisconsin State Statutes, LCD staff may exercise the powers granted to the LCC. This key provision allows LCD staff to carry out LCC powers and directives.

All LCD staff is employed by the County. The LCC has a direct role in hiring LCD staff to implement their programs. The LCD serves as its LCC's right arm.

How are the duties of the LCCs and LCDs divided?

LCC:

- Sets policy and program goals
- Provides leadership
- Approves LCD budget
- Approves LCD work plans
- Supports LCD
- Advises County Board

LCD:

- Administers LCC policy and programs
- Advises and informs LCC
- Prepares LCD budget
- Prepares work plan
- Provides technical assistance

How does the LCC relate to the LCD?

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 product or task, but may rely on LCD staff advice and assistance. For example, participation in a given State program may require the LCC to submit a workload plan identifying the conservation work and the various resources needed to complete the work. With such work, little or no distinction exists between LCC and LCD tasks. LCC members are **responsible for the Plan and its approval**, but they do not prepare the Plan themselves. The LCD may exercise the powers granted to the LCC, with approval of the LCC.

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

- Establishing priorities for controlling resource problems
- Deciding what types of conservation assistance will best serve the needs of County land users
- Coordinating cooperation from agencies, other departments of County government, and private organizations to accomplish goals and tasks, including developing memorandums of understanding.

In summary, the LCC provides leadership, support, advice and constructive criticism to the 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.

Appendix F.

Public Hearing Notice

To be published on April 21 and April 28, 2009

NOTICE OF PUBLIC HEARING LAND AND WATER RESOURCE MANAGEMENT PLAN

Notice is hereby given that on Tuesday, May 5, 2009 at 5:00 p.m., in Conference Room 5 of the County Annex, the Land 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 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 Conservation Division, County Annex. All interested persons are invited to attend said hearing and be heard.

Dated this 15th day of April, 2009.

Steven W. Bradley
Portage County Conservationist

Appendix G.

County Regulations

Animal Waste Management Ordinance

The Portage County Board of Supervisors finds that storage of animal waste 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 Conservation Committee provide for effective, practical, and environmentally safe methods of storing and utilizing animal waste.

The purpose of the Ordinance is to regulate the location, design, construction, installation, alteration, and use of animal waste storage facilities, and the application of waste 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, from the Portage County website at <http://www.co.portage.wi.us> on the Planning and Zoning Department webpage.

Farmland Preservation Program

The Land Conservation Division is responsible for cross compliance.

Excusive Agricultural Zoning

The Zoning Section is responsible for zoning.

Non-Metalic Mine Reclamation Plans

The Land Conservation Division is responsible for plan review.

NR 216

Under subchapter III of NR 216, Wis. Adm. Code, a notice of intent shall be filed with the DNR by any landowner who disturbs one or more acres of land. This disturbance can create a point source discharge of storm water from the construction site to waters of the state and is therefore regulated by DNR. Agriculture is exempt from this requirement for activities such as planting, growing, cultivating and harvesting of crops for human or livestock consumption, and pasturing or yarding of livestock as well as sod farms and tree nurseries. Agriculture is not exempt from the requirement to submit a notice of intent for one or more acres of land disturbance for the construction of structures such as barns, manure storage facilities or barnyard runoff control systems. (See s. NR 216.42(2), Wis. Adm. Code.) Furthermore, construction of an agricultural building or facility must follow an erosion and sediment control plan consistent with s. NR 216.46, Wis. Adm. Code including meeting the performance standards of s. NR 151.11, Wis. Adm. Code. An agricultural building or facility is not required to meet the post-construction performance standards of NR 151.12, Wis. Admin. Code.

Appendix H.

Work Plan

GOAL I: REDUCE THE DECLINE IN 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 Conservation Division will participate in the Groundwater Management Plan Subcommittee and the Continuous Assessment Subcommittee of the Groundwater Citizens Advisory Committee (GCAC).	P&Z LCD 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 LCD 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 to the Public Involvement/Education (PIE) Subcommittee of the GCAC.	P&Z GCAC LCD	As requested
	2. Assist the PIE Subcommittee in developing an Information and Education Plan using a multi-media approach to disseminate information on the decline in water quality from urban related land uses.	P&Z GCAC LCD	1 Plan
	3. Implement demonstration projects to educate the public on urban water quality issues.	P&Z GCAC LCD	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 impacts.	P&Z LCD	25 plans/year

*Bold print Actions are priorities

GOAL II: REDUCE THE DECLINE IN GROUNDWATER QUALITY AND QUANTITY DUE TO RURAL USES

OBJECTIVES	ACTIONS*	MANAGEMENT TEAM	MEASUREMENT TOOLS
A. ASSIST UWEX AND THE WISCONSIN POTATO AND VEGETABLE GROWERS ASSOCIATION (WPVGA) TO IMPROVE GROUNDWATER QUALITY AND CONSERVE ITS USE.	1. Serve on Visioning Committee of WPVGA and work with Portage County irrigated vegetable growers to develop and implement innovative bio-integrated IPM (Integrated Pest Management) practices.	WPVGA UWEX LCD	1 meeting/year
B. ENCOURAGE COMPLIANCE WITH CURRENT CODES, PROHIBITIONS AND PERFORMANCE STANDARDS	1. Secure funds to hire one new staff member in coordination with the Groundwater Section of the Planning and Zoning Department (P&Z) to inspect rural farmsteads and homes on a voluntary basis to identify underground tanks, unused wells, and failing septic systems.	P&Z GCAC LCD	Hire 1 additional staff
	2. Provide technical and financial assistance for well abandonment, replacement of failing septic systems, and removal of failing underground storage tanks.	P&Z GCAC LCD	1/year
	3. Provide technical and financial assistance to meet state nonpoint source (NPS) pollution prohibitions and performance standards.	LCD NRCS	5 practices/year
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 Golden Sands RC&D, UWEX, and the Portage County Business Council to establish a regional agricultural "Alternative Markets" committee.	RC&D WPVGA LCD NRCS UWEX	1 meeting/year
D. MINIMIZE NEGATIVE IMPACTS OF LIVESTOCK WASTE.	1. Provide technical and financial assistance for the implementation of BMPs.	LCD NRCS	5 practices/year
	2. Provide an education program with UWSP to implement nutrient and pest management plans.	LCD NRCS UWEX	5 plans/year
	3. Provide technical and financial assistance for abandonment of unused or failing waste storage facilities.	LCD NRCS	1 practice/year
E. ASSIST IN IMPLEMENTING THE PORTAGE COUNTY GROUNDWATER MANAGEMENT PLAN.	1. Provide information on well testing and well inspection (by plumbers or pump installers). 2. Provide information on wellhead protection. 3. Provide information on water conservation.	GCAC LCD P&Z	As requested

*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 townships to adopt the Rural Preservation Overlay District as described in the County Openspace Plan.	P&Z LCD	1 township/year
	2. Encourage rural landowners to investigate options (i.e. Farmland Preservation Program, Purchase of Development Rights, Conservation Easements, etc.) to protect openspace while still allowing for financial gain on their property.	P&Z LCD	1 landowner/year
	3. Work with the rural County planner to encourage all townships to adopt the County Zoning Ordinance, or one of their own.	P&Z LCD	1 township/year
	4. Educate townships on statutory variance criteria.	P&Z LCD	1 township/year
	5. Review nonmetallic mine permits.	P&Z LCD	1 permit/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. Implement plans to protect/restore shorelands, wetlands, and open space/green space.	LCD NRCS P&Z FWS	1 plan/year
	2. Identify funding sources available to Portage County and the LCD and implement BMP's to protect natural resources.	LCD NRCS P&Z FWS	5 practices/year
	3. Implement the recommendations from the Portage County Lakes Study and develop lake management plans.	LCD NRCS P&Z	1 plan/year
	4. Implement the DNR Gypsy Moth Suppression Program.	LCD	Report Number of acres treated
	5. Work to control invasive aquatic and terrestrial species.	LCD Parks Dept P&Z DNR	1 plan/year
	6. Assist State Agencies with implementation of performance standards and prohibitions.	LCD DNR	5 certifications/year
	7. Provide technical and financial assistance for implementation of BMP's to protect and enhance the Plover River watershed.	LCD NRCS	1 practice/year
	8. Provide technical and financial assistance to meet State NPS pollution prohibitions and performance standards.	LCD NRCS	2 practices/year
	9. Encourage enforcement of erosion control inspection by Town building inspectors.	LCD P&Z	1 Town/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 and greenspace.	UWEX P&Z LCD	1 press release/year
	2. Implement public education efforts on the importance of wetlands and greenspace.	UWEX P&Z LCD	1 contact/year
	3. Encourage voluntary compliance with agricultural performance standards and prohibition.	LCD DNR	1 contact/year

*Bold print Actions are priorities

GOAL V: REDUCE WIND EROSION

OBJECTIVES	ACTIONS*	MANAGEMENT TEAM	MEASUREMENT TOOLS
A. INCREASE PROTECTED ACREAGE.	1. Develop windbreak design standards to promote fast growing, long term, disease resistant species for sustainable hedgerows.	CWWP NRCS LCD	1 standard/5 years
	2. Identify cropland in need of wind erosion BMPs and refer to Central Wisconsin Windshed Partners (CWWP) for voluntary participation.	CWWP NRCS LCD	1 grower/year
	3. Provide administration of CWWP Project and its annual work plan.	LCD NRCS CWWP	1 Plan/year
	4. Install at least five new miles of windbreaks annually and maintain for three years.	CWWP NRCS LCD	5 miles/year
	5. Provide technical and financial assistance to implement wind erosion control practices.	CWWP NRCS LCD	10 growers/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. Request that NRCS provide an accurate tool to quantify soil loss due to wind erosion.	CWWP LCD NRCS	Complete
	5. 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 MILL CREEK TO A LEVEL THAT WILL REMOVE IT FROM THE EPA 303(D) LIST

OBJECTIVES	ACTIONS*	MANAGEMENT TEAM	MEASUREMENT TOOLS
A. DEVELOP AND IMPLEMENT A WATERSHED PROTECTION PLAN	1. Work with the Friends of Mill Creek Watershed, Inc. (FOMC), government agencies, and private conservation organizations to secure funding for planning and implementation.	Portage Co LCD Wood Co LCD RC&D FOMC Private Organizations DNR NRCS DATCP UWSP UWEX FWS	1 meeting/year
B. REDUCE RUNOFF AND INCREASE INFILTRATION WITHIN MILL CREEK AND ITS TRIBUTARIES.	1. Inventory and document the location and extent of altered wetlands.	LCD NRCS	5 acres/year
	2. Provide technical and financial assistance to meet State NPS pollution prohibitions and performance standards and voluntarily implement BMPs.	LCD NRCS FWS	2 practices/year
C. REDUCE NONPOINT SOURCE (NPS) POLLUTION	1. Inventory and document extent of NPS pollution.	LCD DNR	1/year
	2. Provide technical and financial assistance to voluntarily implement BMPs.	LCD NRCS FWS	2 practices/year
	3. Work with DNR to evaluate effectiveness of BMPs on water quality and the fishery.	DNR LCD	1 practice/year
D. EDUCATE LANDOWNERS IN MILL CREEK WATERSHED ON NATURAL RESOURCE CONCERNS AND POSSIBLE REMEDIAL BMPS.	1. Regularly attend FOMC meetings and assist with their educational work plan.	LCD UWEX NRCS	1 meeting/year

*Bold print Actions are priorities

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

OBJECTIVES	ACTIONS*	MANAGEMENT TEAM	MEASUREMENT TOOLS
A. DEVELOP AND MAINTAIN A COUNTY GEOGRAPHIC INFORMATION SYSTEM (GIS) TO REPORT ACTIVITIES, ACCOMPLISHMENTS, AND RESOURCE PROTECTION STATUS.	1. Utilize Agricultural Environmental Assessment sheet to identify necessary attributes to be placed in GIS.	P&Z LCD	1/year
	2. Cooperate with other agencies to develop and maintain County GIS.	P&Z LCD DNR NRCS	As requested
	3. Secure funds to hire technical staff to develop and maintain GIS.	P&Z LCD	Hire 1 additional staff
	4. Publish conservation data through County internet mapping application.	P&Z	1 layer/year
B. PROMOTE YOUTH EDUCATION PROGRAMS	1. Provide Stewardship Week materials to schools.	LCD	Number of booklets
	2. Promote and provide scholarships for youth conservation camps.	LCD	Number of scholarships
	3. Coordinate Conservation Poster and Speaking contests.	LCD	Number of participants

*Bold print Actions are priorities

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