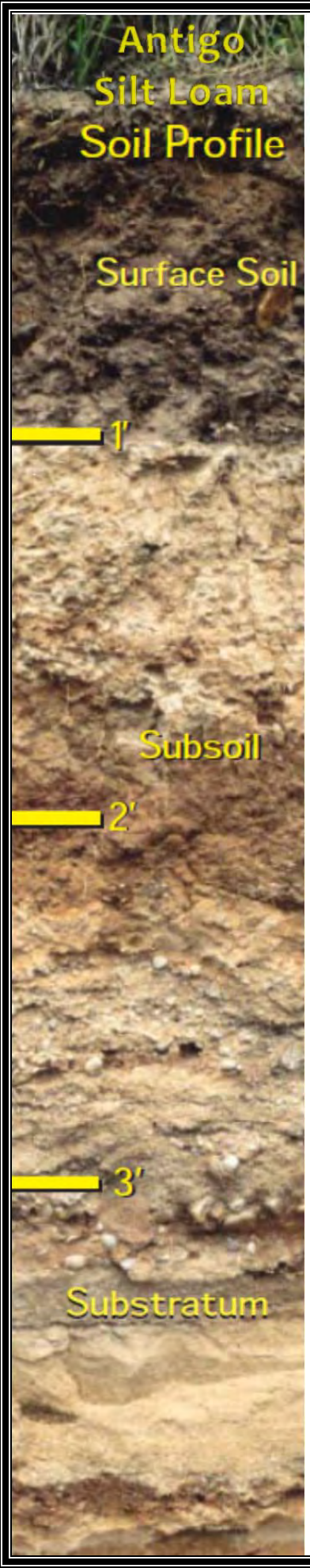
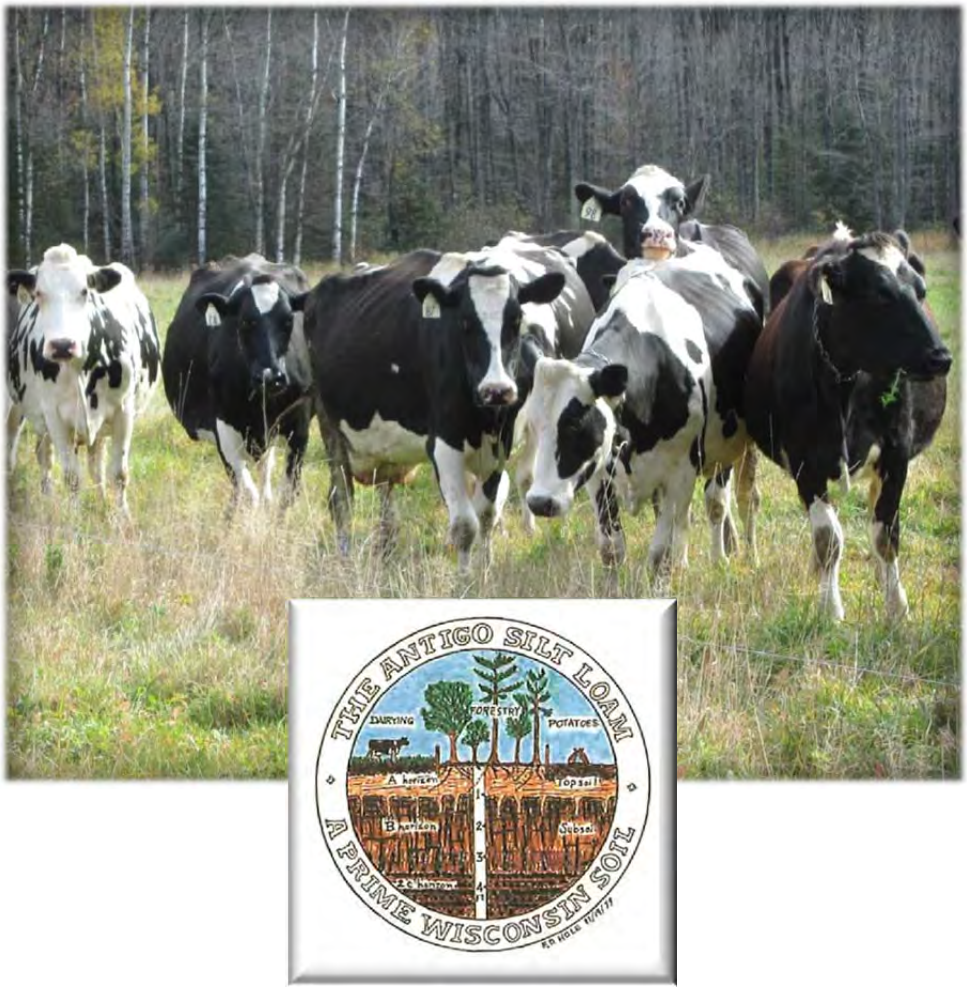


Langlade County
Land and Water Resource Management Plan
2015 – 2019



November 2014

Langlade County

NCWRPC

Land and Water Resource Management Plan 2015-2019

Prepared under the direction of the Langlade County Land Conservation Committee:

David Solin, Chair

William Bostwick

Samuel Hardin

Joseph Novak III

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Staff for this plan

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Molly McKay, Conservation Technician
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Cover photo sources

State Soil symbol - State of Wisconsin
Soil profile picture – Natural Resources Conservation Service
Cow picture – Andy Bures Farms, Deerbrook, WI

LANGLADE COUNTY

RESOLUTION # 58 -2014

INTRODUCED BY: Land Conservation Committee

INTENT: Approval of Langlade County Land and Water Resource Management Plan

WHEREAS, the State of Wisconsin requires its 72 counties (Wisconsin Act 27 Chapter 92) to prepare and submit for state approval, and adopt a Land and Water Resource Management (LWRM) Plan, that identifies a citizen driven initiative to conserve and protect the quality of related natural resources, enhance water quality and focus on soil erosion problems within individual counties; and

WHEREAS, the Langlade County LWRM Plan was written with the assistance of partner agencies such as the Wisconsin Department of Agriculture, Trade and Consumer Protection, the Wisconsin Department of Natural Resources, USDA Natural Resources Conservation Service, and Langlade County University of Wisconsin Cooperative Extension: and

WHEREAS, input on the plan also came from an advisory committee, comprised of individuals representing a wide array of interest including: agricultural producers, lake districts, state/federal government and county government. A public hearing was held on October 27, 2014, at which time the public had the opportunity to attend and be heard. The plan is to be presented to the Wisconsin Land and Water Conservation Board in December 2014 for final approval; and

WHEREAS, the Land and Water Resource Management plan identifies seven goals, the goals are:

- Protect and improve surface and ground water
- Promote Working Forests and Farms
- Control Invasive Species
- Protect public health from unwanted chemical waste
- Develop online presence for public education
- Improve forest Silviculture for multiple uses
- Manage wildlife conflicts

WHEREAS, adoption of the LWRM plan will provide a five-year period of eligibility for Langlade County to obtain state funding that could provide local residents with education, cost sharing for conservation efforts that will result in the protection and enhancement of the natural resources of Langlade County.

THEREFORE, BE IT RESOLVED that the Langlade County Board of Supervisors approves and herby adopts the December 2014 edition of the Langlade County Land and Water Resource Management Plan as prepared and approved by the Langlade County Land Conservation Committee.

Land Conservation Committee

David Solin, Chairman

William Bostwick

Samuel Hardin

Joseph Novak

Angie Schreiber

Fiscal Note: No fiscal impact.

ADOPTED BY THE COUNTY BOARD OF LANGLADE COUNTY
THIS 18th DAY OF NOVEMBER, 2014.

Kathryn Jacob, Langlade County Clerk

Acknowledgements

Langlade County Land Conservation would like to thank the following individuals who gave of their time by providing valuable input by serving on the:

Citizens Advisory Committee

Sonny Wreczycki	Lake Association citizen
Tom Wild	AG - Potato farmer
Roy Gallenberg	AG - Potato farmer
Andy Bures	AG - Dairy farmer
Greg Schroepfer	AG - Dairy farmer
Helen Wanca	Real Estate
Dave Kautza	Construction
Paul Schuman	Interested citizen

Technical Advisory Committee

Stephanie Plaster	Langlade County – UW Extension - Agricultural Agent
Eric Rantala	Langlade County – Forestry Department
Ron Barger	Langlade County – Health Department
Tim Rusch	Langlade County – Highway Department
Molly McKay	Langlade County – Land Conservation Department
John Preuss	Lumberjack RC&D - Tri County AIS
Matt Peplinski	USDA – FSA
Peggy Winter	USDA - NRCS
Keith Lindner	WDNR – Forester

Acronyms / Initials

ACE	Army Corps of Engineers	**LCC**	Land Conservation Committee
AIS	Aquatic Invasive Species	**LCD**	Land Conservation Department
BMP's	Best Management Practices	**MOU**	Memorandum of Understanding
CC	County Conservationist	**NACD**	National Association of Conservation
CES	Cooperative Extension Service	**NCWRPC**	North Central Wisconsin Regional Planning Commission
CREP	Conservation Reserve Enhancement Program	**NMP**	Nutrient Management Plan
CRP	Conservation Reserve Program	**NPS**	Nonpoint Source Pollution
DATCP	Department of Agriculture, Trade, and Consumer Protection	**NRCS**	Natural Resources Conservation Service
DC	District Conservationist	**RC & D**	Lumberjack Resource Conservation and Development Council, Inc.
DOA	Department of Administration	**SOC**	Standards Oversight Committee
DNR	Department of Natural Resources	**SWRM**	Soil and Water Resource Management Program
DOR	Department of Revenue	**"T"**	Soil Loss Tolerance
EPA	Environmental Protection Agency	**TIP**	Timberland Invasives Partnership
EQIP	Environmental Quality Incentive Program	**TIS**	Terrestrial Invasive Species
FCL	Forest Crop Law	**USDA**	United States Department of Agriculture
FEMA	Federal Emergency Management Agency	**USGS**	United States Geological Society
FLEP	Forest Landowner Enhancement Program	**UWEX**	University of Wisconsin-Extension
FPP	Farmland Preservation Program	**WAL**	Wisconsin Association of Lakes
FS	Forest Service	**WALCE**	Wisconsin Land and Water Conservation Employees
FSA	Farm Service Agency	**WCA**	Wisconsin Counties Association
FWS	Fish and Wildlife Service	**WDACP**	Wildlife Damage Abatement and Claims Program
GIS	Geographic Information Systems	**WHIP**	Wildlife Habitat Incentives Program
GLIFWC	Great Lakes Indian Fish and Wildlife Commission	**WLP**	Wisconsin Lakes Partnership
I & E	Information and Education	**WLWCA**	Wisconsin Land and Water Conservation Association
IPAW	Invasive Plant Association of Wisconsin	**WRP**	Wetland Reserve Program
LWCB	Land and Water Conservation Board	**WVIA**	Wisconsin Valley Improvement Authority
		WTL	Woodland Tax Law

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A. Public Hearing Notice
B. Antigo Silt Loam Fact Sheet
C. Langlade County Trout Streams Map
D. Nutrient Management Conservation Practices
E. NR151 Performance Standards and Prohibitions Fact Sheets

EXECUTIVE SUMMARY

Introduction

The Langlade County Land and Water Resource Management Plan is drafted as a 5-year plan (2015-2019) with a 5-year Work Plan (2015-2019) in accordance to the requirements set forth in Chapter 92 of the Wisconsin Statutes.

Plan Development

To assist in the revision of the land and water resource management plan, Langlade County Land Conservation invited participants from a variety of natural resource professionals, and interested farmers to become the Technical Advisory Committee and the Citizens Advisory Committee. These individuals discussed and prioritized conservation concerns in the county.

Both committees (TAC and CAC) met on **March 4, 2014** for the kick-off to planning for both the *Land and Water Resource Management Plan* and the *Farmland Preservation Plan*. The full group was broken into sub-groups that each contained both TAC and CAC members so better interaction would occur as they identified issues and concerns, and trends in farming practices.

The TAC met on **July 16, 2014** to review and revise the Resource Assessment chapter, along with creating parts for the Work Plan.

The CAC met again on **August 5, 2014** to prioritize the Work Plan goals that the TAC developed from the March 4th issues.

The **October 27, 2014** public hearing on the plan was noticed twice in the official paper (Oct. 14 & 20). An open house meeting directly proceeded the public hearing, where the plan and maps were explained, and concerns answered.

December – Presentation of Plan to the Wisconsin Land and Water Conservation Board.

December – Adoption of the plan by the Langlade County Board of Supervisors.

December 2014 – DATCP sends letter adopting the plan following LWCB recommendations.

Resource Assessment

Brief summaries of the land and water resources in Langlade County, and how they may have changed over the past 5 years, are described in this chapter.

Location/Geography

Langlade County is located in northern Wisconsin. The City of Antigo and the Village of White Lake are the only incorporated communities in the county, with Antigo as the

county seat. The County is bounded by Oneida and Forest County to the north, on the east by Oconto County, to the south by Menominee, Shawano and Marathon County, and on the west by Lincoln County.

General Land Use

Langlade County is nearly 78 percent covered with woodlands, mainly in the northern half of the county and eastern third where the Wolf River runs. Agriculture lies mainly within the Antigo Flats, which are centered around Antigo.

Agriculture

Dairy and vegetable industries in Langlade County stand on equal footing. Long the main farming enterprise of Langlade County, dairy is the largest part of Langlade County's agriculture in terms of combined on-farm value and processing value. In 2008, Langlade County milk producers and the dairy industry contributed $158.6 million to the county's economy. The on-farm production and sale of milk accounted for $30 million in economic activity. The processing of milk into dairy products accounted for another $128.6 million. Much of the corn and forage crops grown in the County remain in the County for livestock feed.

Potatoes are by far the most important cash crop in the County. In 2007, the market value of vegetable crops was $33.5 million, or 45 percent of the total market value of all agricultural products sold in the County. The production of certified seed potatoes for domestic and international markets has added value to the commodity over the last decades.

Other vegetables grown in the County are on contract with canning companies outside of Langlade County.

Forestry

Large blocks of public and private forests exist in Langlade County. School districts have school forests, the county maintains several forest blocks, and the federal government manages the Chequamegon-Nicolet National Forest. DNR manages two private property programs that allow public access on private lands, while also providing timber management on those lands – Managed Forest Law, and Forest Legacy Area. In 2006 there were 114,682 total acres enrolled in both FCL and MFL. In 2013 there were 119,536 total acres enrolled in both FCL and MFL.

Surface Water

Langlade County is rich in water resources. The county has hundreds of miles of cold water streams, 196 lakes covering about 8,000 acres and about 108,800 acres of wetland greater than five acres in size based on Wisconsin Wetland Inventory data. The largest natural lake in Langlade County is Rolling Stone Lake with 671.9 acres and the largest impoundment is Upper Post Lake at 756.7 acres. The deepest lake is Jack Lake at 85 feet deep and the largest body of water in the county is the Wolf River at 983.7 acres. There are 391 miles of trout streams (DNR 2002) in Langlade County.

Impaired Waters – 303(d) Waters

In 2014 there were 7 waterbodies in Langlade County on the 303(d) list. Four additional waterbodies are awaiting approval to join the list.

Aquatic Invasive Species

One threat to lake health is invasive species. Langlade, Lincoln, and Forest Counties, and Lumberjack Resource Conservation and Development have joined together to fight aquatic invasive species in this tri-county area by jointly hiring an aquatic invasive species (AIS) coordinator. It is the responsibility of the AIS coordinator to work with citizens, volunteers, county staff, DNR staff, and other AIS professionals to educate the public and control aquatic invasive species in the Tri-County area.

Outstanding/Exceptional Resource Waters

Outstanding Resource Waters in Langlade County include 2 lakes, 4 rivers, and 6 creeks. Exceptional Resource Waters in Langlade County include 7 rivers, 2 flowages, 95 creeks, and 1 spring.

Groundwater

Groundwater supplies nearly all of the water for residential, commercial, and industrial uses in Langlade County. In general, groundwater use has increased in the county as urban areas continue to grow and agricultural users install more high capacity wells. The increase in rural housing developments and a water bottling facility, each with their own private well, also places demands on groundwater.

The quality of the ground water is generally very good. Many soils however have very porous layers that are poor filters for domestic waste and agricultural chemicals. The impact of development and agriculture may cause deterioration of the ground water.

In general, the infiltration and recharge rates in Langlade County are relatively high due to the coarse texture of surficial materials. The average recharge from precipitation on 1 square mile of the Antigo Flats is about 256,000 gallons per day.

Performance Standards and Prohibitions

Agricultural Performance Standards will continue to be achieved through a voluntary educational approach along with one-on-one contacts with landowners who request technical assistance.

Priority farms will be ranked highest if (1) a citizen complaint is filed against them; followed by (2) Farmland Preservation Program participants that come out of compliance with pollution controls; and finally (3) farms in water quality management areas or other *designated water* areas (Map 1) with significant erosion problems.

Non-agricultural Performance Standards are regulated by the County Land Records and Regulations department through a variety of ordinances.

2010-2015 Work Plan Accomplishments

Accomplishments and activities completed from the 2010-2015 Langlade County Work Plan are summarized in Chapter 4. Knowing what has been completed or needs more attention helps us to determine which actions to continue when creating the next 5-year Work Plan. Land Conservation Department and Land Conservation Committee accomplishments are described under each goal in Chapter 4.

2015-2019 Work Plan

Our mission *to protect the county's natural communities from degradation* will be implemented through the following work plan over the course of a five-year period, beginning in 2015 and extending through 2019.

The goals are listed below in order of priority as determined by the Langlade County Land Conservation Committee/Department in association with recommendations from the Citizens Advisory Committee and Technical Advisory Committee.

Goal 1: Protect and improve surface and groundwater

Goal 2: Promote Working Forests and Farms

Goal 3: Control Invasive Species

Goal 4: Protect public health from unwanted chemical waste

Goal 5: Develop online presence for public education

Goal 6: Improve forest silviculture for multiple uses

Goal 7: Manage wildlife conflicts

Monitoring and Evaluation

Performance Standards – Spot checks are the main tool used to monitor the erosion of croplands within the county. LCD staff spot check each farm in the Farmland Preservation Program every four years.

Langlade County LCD relies on NRCS to develop conservation plans on the cropland acres of the county. A 2014 database estimates the weighted average tolerable soil loss (T) for Langlade County is 4.1 T.

Phosphorus Loading – The Wastewater Treatment Strip and BARNY spreadsheets will be used to determine compliance with the standard. In addition, the citizen based water quality monitoring conducted on county lakes will be used to monitor whether improvements are being made in water quality.

Information and Education

Possible educational strategies include posting information on the Internet, creating new brochures, holding workshops, and continuing school group and other public presentations. Examples of current educational strategies being employed include: nutrient management farmer training, tax preparer training, and collaboration with UW-Extension to host "Getting Started in Grazing" courses and a farm transition workshop.

PLAN DEVELOPMENT AND PUBLIC PARTICIPATION
Chapter 1

Introduction

Locally led natural resource management is an important concept in Wisconsin land and water conservation. State and federal agencies support the idea that local residents are best suited to identify and provide solutions for natural resource problems within a county. At the root of the county Land and Water Resource Management (LWRM) plan is the concept of cooperation among local residents and all natural resource agencies operating within the county. The Department of Agriculture, Trade, and Consumer Protection (DATPC) requires that each county Land Conservation Department (LCD) locally create a Land and Water Resource Management (LWRM) plan (Chapter 92, WI Statutes) to coordinate LCD activities. The Langlade County Land Conservation Committee (LCC) contracted with North Central Wisconsin Regional Planning Commission (NCWRPC) to assist with facilitating the LWRM planning process.

Chapter 92 has clearly defined roles and responsibilities for DATCP and LCCs. The Department of Agriculture, Trade and Consumer Protection (DATCP) has the primary responsibility to set state conservation program policy. County land conservation committees (LCC's), through their respective land conservation departments, have primary responsibility for implementation of conservation programs within their jurisdiction. Both DATCP and county land conservation committees have joint responsibility to develop and administer the conservation programs. Chapter ATCP 50 (the Soil and Water Resource Management Administrative Rule) further articulates land and water resources management planning program roles and responsibilities.

The development of this document provides Langlade County with guidance to address the natural resource needs of the county over the next 5 years. It also provides an opportunity for Langlade County to further develop and expand coordination with other partners and agencies involved in resource management to accomplish the goals and objectives identified in the plan.

Plan Development with Public Participation

The focus of this plan's development process was to identify and prioritize land and water resource issues to develop a Work Plan that addresses those issues. The Work Plan coordinates various agency's efforts to conserve the land and water resources in the county.

A good start to any planning process is finding out what currently exists. NCWRPC staff collected land and water resource inventories from a variety of sources, including the County's Comprehensive Plan.

Two groups, the Technical Advisory Committee and the Citizens Advisory Committee, were assembled to assess what currently exists and to help guide development of this plan.

A Technical Advisory Committee (TAC) of natural resource professionals was gathered to review the Resource Assessment Chapter, and to add additional perspective on the inventory and current trends. Those perspectives were incorporated into the Resource Assessment Chapter. TAC members also reviewed and revised the Work Plan according to what actions worked well.

The Citizens Advisory Committee (CAC) was a diverse group of residents appointed by the Langlade County Land Conservation Committee (LCC) and also included some Committee members to provide priority issue feedback for this plan. CAC members are listed with their representation on the back of this plan's cover.

Both committees (TAC and CAC) met on **March 4, 2014** for the kick-off to planning for both the *Land and Water Resource Management Plan* and the *Farmland Preservation Plan*. This first joint committee meeting introduced everyone to both planning processes and what each plan strives to accomplish. The full group was broken into sub-groups that each contained both TAC and CAC members so better interaction would occur.

Sub-group discussions identified the following **issues and concerns**:

- Acres under irrigation increasing significantly.
- Total agricultural acreage anticipated to remain constant.
- Number of farms will decrease, while farm sizes increase.
- Residences encroaching on agricultural and forest land uses.
- Increased land values.
- Forest fragmentation.
- Increased recreational uses and conflicts.

Sub-group discussions identified the following **trends in farming practices**:

- Precision agriculture will increase efficiency (e.g. field mapping, drones, satellites, variable rate fertilizer applicators)
- Production will respond more quickly to international markets.
- Sustainability and food safety practices will increase.
- Larger equipment will cause a need for wider roads.
- More irrigation will occur.
- More uses for forest products will occur.

The TAC met on **July 16, 2014** to:

- Review and revise the Resource Assessment Chapter;
- Create objectives and actions for the Work Plan, and
- Create goals out of CAC issue identification from March 4th.

Follow up among TAC members occurred throughout July.

The CAC met again on **August 5, 2014** to prioritize the Work Plan goals that the TAC developed from the March 4th issues. A refresher of this plan's purpose was used to frame how the issues were identified. Next, all participants received 3 stickers to place next to the goals they felt were most important for the county to pursue. The following list is their priorities:

GOALS (created by TAC, and prioritized by CAC)

13 votes – Protect and improve surface and groundwater.

13 votes – Promote Working Forests and Farms

8 votes – Control Invasive Species.

6 votes – Protect public health from unwanted chemical waste.

3 votes – Develop online presence for public education

2 votes – Improve forest silviculture for multiple uses.

No votes – Reduce sources of nonpoint source water pollution.

No votes – Manage wildlife conflicts.

Land Conservation Department personnel further discussed the goals, objectives, and actions of the Work Plan and kept the following goals:

Goal 1: Protect and improve surface and groundwater.

Goal 2: Promote Working Forests and Farms.

Goal 3: Control Invasive Species.

Goal 4: Protect public health from unwanted chemical waste.

Goal 5: Develop online presence for public education.

Goal 6: Improve forest silviculture for multiple uses.

Goal 7: Manage wildlife conflicts.

Public Hearing

The public hearing Monday, October 27, 2014, was proceeded by an open house, where the plan and maps were all described to everyone in attendance, and everyone was allowed to ask questions. Eighteen people were in attendance for the public hearing. All concerns were answered during the open house period, so no comments were made during the public hearing.

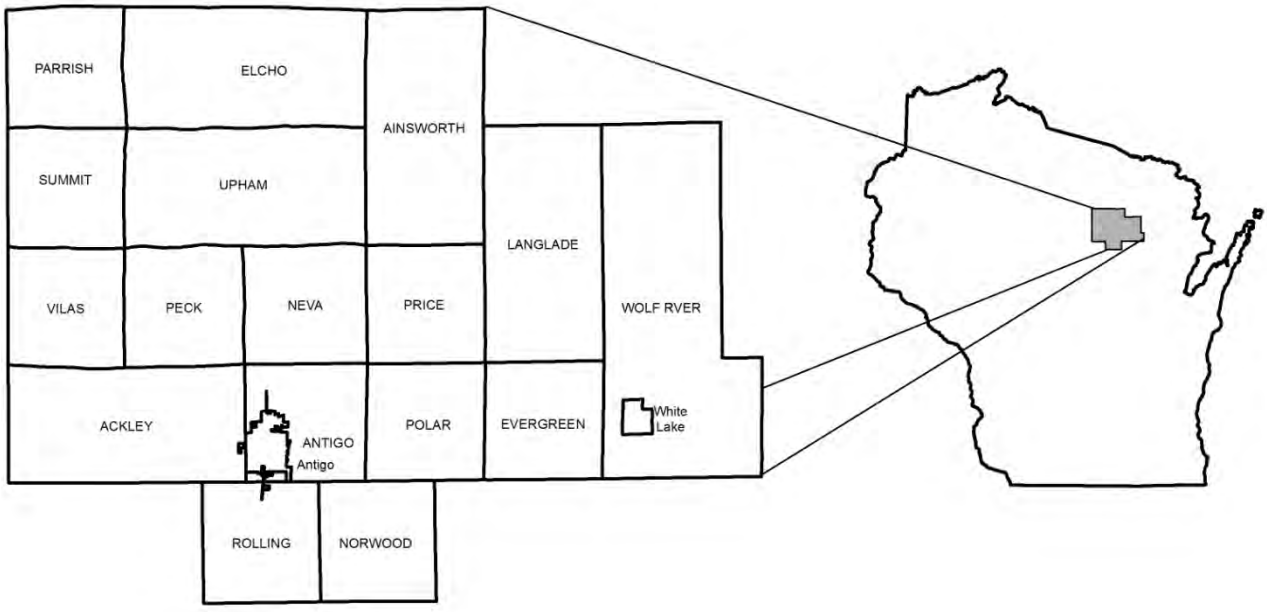
RESOURCE ASSESSMENT
Chapter 2

This chapter briefly summarizes the land and water resources within Langlade County. This information provides a general background of how trends may impact the land and water resources in the county. Developing an understanding of these characteristics and their changes will help direct future planning efforts in the appropriate directions. This chapter is not intended to contain an exhaustive inventory of land and water resources within Langlade County; instead it drew upon existing inventories and information from previously prepared reports.

Location/Geography

Langlade County is located in northern Wisconsin. The City of Antigo and the Village of White Lake are the only incorporated communities in the county, with Antigo as the county seat. The County is bounded by Oneida and Forest County to the north, on the east by Oconto County, to the south by Menominee, Shawano and Marathon County, and on the west by Lincoln County.

Figure 1 Langlade County



Climate

Langlade County has a continental climate characterized by cold, snowy winters, warm summer days and cool summer nights. The short frost-free period during the summer restricts suitable crops mainly to forage, small grain, and vegetables. Precipitation is fairly well distributed throughout the year, reaching a peak in summer. Snow covers the ground much of the time from late fall until early spring, and has an annual range from 20 to 90+ inches and an annual mean of 51.9 inches in the period of 1971-2000. June is generally the wettest month and February is the driest. Precipitation averages 30.6 inches annually. The sun shines 65 percent of the time in summer, and shines 45 percent in the winter. The prevailing wind is from the southwest. Average wind speed is highest in spring at 12 miles per hour.

Surface Topography

The topography of Langlade County is of glacial origin. Moraines, outwash plains, drumlins, eskers, kames, lake plains, bogs and other depressional areas where organic soils have formed and alluvial deposits in drainage ways characterize the landscape. The moraines of the older drift area found in southwestern part of the county and the outwash plains of the Antigo Flats form a triangular region that is some of the smoothest land in the county. These areas were not covered by glacial ice during the most recent glaciations. The end moraines are the roughest terrain. Elevations range from about 1,070 feet where the Wolf River leaves the county to about 1,903 feet above sea level in the Township of Langlade. Antigo is about 1,498 feet above sea level. The eastern part of the county drains to Lake Michigan and the western part of the county drains to the Mississippi River.

Glacial Geology

The unconsolidated deposits overlying the Precambrian bedrock are predominantly Quaternary glacial sediments. Holocene or recent marsh deposits and alluvium occur in low lying wetlands and in areas adjacent to lakes and streams. The distribution and texture of these deposits and associated landforms affect the movement, availability, and chemical characteristics of surface water and groundwater in the county. (WGNHS)

General Land Use

In the early 1870's the first European traders established posts in the Northwoods. Soon after the areas vast forests provided lumber for the developing cities of the Midwest. Farming began as an auxiliary use to forestry, but with the arrival of rail in the 1880's new markets for commodities opened. Oats, potatoes, and wheat were and remain important commodities for the County along with forestry. (Soil Survey)

Langlade County is nearly 78 percent covered with woodlands, mainly in the northern half of the county and eastern third where the Wolf River runs. Agriculture lies mainly within the Antigo Flats, which are centered around Antigo.

The Langlade County Future Land Use Plan (within the Comprehensive Plan) reflects no major changes in land use over the plan period 2009-2029. Forestry will continue to be the major land use in the county followed by agriculture.

See Map 2: Generalized Existing Land Use

The following is a brief description of the major land uses and their trends in Langlade County.

Forestry

Large blocks of public and private forests exist in Langlade County. Many types of public entities own forests. School districts have school forests, local governments own forests for various outdoor recreational pursuits, the county maintains a forest, Board of Commissioners of Public Lands maintains land granted by the federal government to begin UW-Madison, and the federal government manages the Nicolet National Forest.

Forested lands that may be open to the public but are not part of a public forest are privately held lands that are enrolled in the Forest Crop Law (FCL) or Managed Forest Law (MFL).

In 2006 there were 114,682 total acres enrolled in both FCL and MFL.
In 2013 there were 119,536 total acres enrolled in both FCL and MFL.

More land is now enrolled in FCL and MFL than in the past, which is contrary to the trend in many other Wisconsin counties.

Forest Legacy Area (FLA) – The WDNR recently purchased the development rights for two industrial forests in the towns of Langlade and Wolf River (see Map 4). No additional land in the county is targeted for FLA creation at this

time, but all land in Langlade County is within the Northern Forest FLA, which makes it eligible for this program.

Agriculture

Dairy and vegetable industries in Langlade County stand on equal footing. Long the main farming enterprise of Langlade County, dairy is the largest part of Langlade County's agriculture in terms of combined on-farm value and processing value. In 2008, Langlade County milk producers and the dairy industry contributed $158.6 million to the county's economy. The on-farm production and sale of milk accounted for $30 million in economic activity. The processing of milk into dairy products accounted for another $128.6 million.(http://www.uwex.edu/ces/ag/wisag/documents/agimpactbrochLangladeCoFINAL.pdf). Much of the corn and forage crops grown in the County remain in the County for livestock feed.

Potatoes are by far the most important cash crop in the County. In 2007, the market value of vegetable crops was $33.5 million, or 45 percent of the total market value of all agricultural products sold in the County. The production of certified seed potatoes for domestic and international markets has added value to the commodity over the last decades.

Other vegetables grown in the County on contract with canning companies include: snap beans, peas, and sweet corn. Acreage of these crops can swing year to year. Acreage has increased recently as canning contracts have shifted northward out of the Central Sands region of Wisconsin due to the increased demand for field corn acreage there. Soybeans are also extensively grown for use both on local dairy farms and as a commodity sold outside of the County.

Several factors make Langlade County an excellent location for seed production: skilled management, cool climate, silt loam soils, packaging equipment, and management of crop protectants. In addition to the certified seed potato producers, the County is the home of two seed cleaning and packaging companies that market corn, soybean, and small grain seeds.

Maple syrup has been a prominent component of the agricultural economy at $2 million in recent years. Greenhouse and nursery products including tomatoes, Christmas trees, and nursery stock also contribute $1.4 million to the local economy.

Direct marketing to consumers through roadside stand, farmers' markets and pick-your-own generate $339,000 in direct sales.

Table 1 Agricultural Trends in Langlade County						
	2008	2009	2010	2011	2012	2013
All cattle & calves	16,500	16,000	16,800	18,000	17,000	18,000
Dairy herds: As of:	68 4-1-08	64 4-1-09	65 4-1-10	65 4-1-11	59 4-1-12	54 4-1-13
Agricultural sales Total acres sold	11 628 ac	5 829 ac	14 761 ac	10 507 ac	19 587 ac	Not yet available
Forage [1]	15,000 ac	14,597 ac	14,766 ac	13,747 ac	12,618 ac	11,040 ac
Corn [2]	12,300 ac	11,765 ac	11,555 ac	14,733 ac	17,674 ac	17,500 ac
Wheat [2]	4,070 ac	4,585 ac	4,079 ac	3,595 ac	2,926 ac	2,130 ac
Oats [2]	7,600 ac	8,653 ac	8,080 ac	6,154 ac	5,036 ac	4,900 ac
Soy beans [2]	2,900 ac	3,064 ac	2,402 ac	4,430 ac	4,310 ac	4,515 ac
Potatoes [2]	9,040 ac	9,184 ac	8,908 ac	9,198 ac	9,389 ac	7,640 ac

Source: Wisconsin Agricultural Statistics 2008-2013 and USDA-FSA

[1] Acres planted as reported to USDA-FSA – established forage acres are not included.

[2] Acres planted as reported to USDA-FSA.

Table 2 Agricultural Trends in Langlade County From Census of Agriculture			
	2002	2007	2012
Farmland (acres)	87,558	78,258	113,881
Average Farm Size (acres)	260	252	288
Irrigated land (farms) (acres)	50 15,244	54 17,465	44 19,717
Wheat for grain (farms) (acres)	20 2,582	16 2,017	22 3,077
Corn for grain (farms) (acres)	102 5,897	94 7,483	103 7,933
Corn for silage (farms) (acres)	91 4,522	87 5,463	82 5,939

Source: Census of Agriculture, 2002, 2007, 2012.

Soils

Langlade County covers a total acreage of 568,333 of which 113,881 acres (according to 2012 Ag Census) in 2012 are in farmland. Antigo Silt loam, Kennan loam, and Pence Sandy Loam make up the majority of Langlade County's cropland acres. See **Map 3** for general soil locations. These soils are nearly level to moderately sloping and are well suited for farming.

Langlade County is the home to the Antigo silt loam; Wisconsin's state soil.

Antigo silt loam was selected to represent the more than 550 different soils in Wisconsin. It is a productive, well-drained soil with a light-colored surface layer developed under northern hardwood forests. Antigo soils are formed in silty material underlain by sand and gravel on glacial outwash plains.

See Attachment 2 for a list of soils and the Antigo silt loam fact sheet.
See Map 3 for the general soil map.

There are 6 major soil associations covering Langlade County. Each soil association has distinct soil patterns, relief, and drainage features. The Langlade County Soil Survey contains detailed descriptions of each soil type, and includes tables to determine suitability and limitations.

General Soil Map Unit Descriptions

Antigo-Langlade
Well drained, nearly level and gently sloping, silty soils on outwash plains. These soils make a roughly triangular outwash plain called the Antigo Flats. The State soil (Antigo Silt Loam) is named for this soil unit.

Antigo-Pence
Well drained, nearly level to very steep, silty and loamy soils on outwash plains, kames, and eskers.

Kennan-Keweenaw
Well drained, undulating to very steep, stony, loamy and silty soils on moraines and drumlins.

Magnor-Cable
Somewhat poorly drained and very poorly drained, nearly level and gently sloping, silty and mucky soils on moraines.

Milladore-Sherry-Mylrea
Somewhat poorly drained and very poorly drained, nearly level and gently sloping, silty and mucky soils on moraines. Granite bedrock is close to the surface.

Oesterle-Minocqua-Scott Lake
Somewhat poorly drained, very poorly drained, and moderately well drained, nearly level, silty and mucky soils on outwash plains.

Soil erosion from cropland

Cropland soil erosion for the county is available on a countywide basis. A 2014 database estimates the weighted average tolerable soil loss (T) for Langlade County is 4.1 T. See Attachment 4.

T-by-2000, a DATCP report published in 2001 showed that about 96% of farm fields sampled in Langlade County were being farmed to T, the tolerable soil level. This is higher than the state average identified in the report of 82%

Wind erosion is a concern throughout the Antigo Flats. Another concern is soil erosion caused by runoff mainly in potato fields northeast of Antigo along Spring Brook. Potatoes are a relatively shallow rooted crop that require intensive management to promote growth and yield. In fall, there is not adequate time to harvest crops and then establish a cover crops.

Surface Water

Langlade County is rich in water resources. The county has hundreds of miles of cold water streams, 196 lakes covering about 8,000 acres and about 108,800 acres of wetland greater than five acres in size based on Wisconsin Wetland Inventory data. The largest natural lake in Langlade County is Rolling Stone Lake with 671.9 acres and the largest impoundment is Upper Post Lake at 756.7 acres. The deepest lake is Jack Lake at 85 feet deep and the largest body of water in the county is the Wolf River at 983.7 acres. There are 391 miles of trout streams (DNR 2002) in Langlade County.

Wisconsin trout streams are ranked based on their ability to sustain reproducing trout. Class I trout streams are high quality waters able to support a reproducing trout population without need of any fish stocking.

Class II trout streams have some natural reproduction, but not enough to sustain a sport fishery. Some fish stocking is necessary to maintain the fishery. Class III trout streams have no reproduction and have marginal trout habitat. Fish stocking is required to support the fishery in these streams.

There are 142 miles of Class I trout water, 246 miles of Class II trout stream and 6 miles of Class III trout streams in Langlade County. The Wolf River, Eau Claire River, Evergreen River and Spring Brook constitute highly regarded Class I trout fishing resources in the County.

See Attachment C for a map of the major trout streams in Langlade County.

The Wisconsin State Legislature created the Wisconsin Nonpoint Source Water Pollution Abatement Program (NPS) in 1978 (§281.66, Wis. Stats.). The goal of the NPS Program is to improve and protect the water quality of streams, lakes, wetlands, and groundwater by reducing pollutants from agricultural and residential non-point sources. The WDNR and DATCP administer the program, which focuses on critical hydrologic units called priority watersheds. The program is implemented through the Targeted Runoff Management Program and Urban Non-point Source Water Pollution Abatement and Storm Water Management Grant Program, led by local units of government. Landowners, land renters, counties, cities, villages, towns, sewer districts, sanitary districts, lake districts, and regional planning commissions are eligible to participate.

Basin & Watersheds

Langlade County is in portions of 16 watersheds and 4 drainage basins (Table 3). The subcontinental divide separates the Mississippi River drainage basin from the Lake Michigan drainage basin. See **Map 5**. On the eastern side of the divide, water flows into the Wolf River, which leads to Lake Michigan. On the western side of the divide, the water flows into the Wisconsin River on its way to the Mississippi River.

The DNR ranked each watershed per the DNR's Nonpoint Source Priority Watershed Selection Criteria. Table 3 shows these rankings that establish the priority for future grant eligibility through the Nonpoint Source Program. In some cases the data was not sufficient to produce a ranking. Some of the assessments are missing or out of date, but more current data is not available.

Table 3 DNR's Nonpoint Source Priority Watershed Rank				
Basin Watershed (DNR Code)	Overall Ranking	Stream Ranking	Lake Ranking	Groundwater Ranking
Upper Wisconsin				
Noisy and Pine Creeks (UW33)	High	High	High	Low
Pelican River (UW40)	Medium	Not Ranked	Low/Med.	Low
Prairie River (UW30)	Medium	Medium	Medium	Low
Central Wisconsin				
Pine Creek (CW29)	?	?	?	?
Plover and Little Plover Rivers (CW12)	?	?	?	?
Springbrook Creek (CW21)	High*	High*	High*	High*
Trappe River (CW27)	?	?	?	?
Upper Eau Claire River (CW22)	?	?	?	?
Wolf River				
Lily River (WR19)	Not Ranked	Not Ranked	Not Ranked	Low
Middle & South Branches Embarrass River (WR11)	Low	Low	Not Ranked	Medium
Red River (WR16)	Low	Low	Not Ranked	Medium
Upper Wolf River and Post Lake (WR20)	Not Ranked	Not Ranked	Not Ranked	Low
West Branch Wolf River (WR17)	Not Ranked	Not Ranked	Not Ranked	Low
Wolf River – Langlade & Evergreen River (WR18)	Not Ranked	Not Ranked	Not Ranked	Low
Green Bay				
Lower North Branch Oconto River (GB05)	Low	Low	Not Ranked	Low
South Branch Oconto River (GB06)	Low	Low	Not Ranked	Low

Source: Headwaters Basin Report, 2002
*Springbrook Creek Watershed Plan online, 2010

One watershed plan has been updated in the Upper Wisconsin Basin. This basin plan update synopsis is provided below:

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Watershed – Spring Brook Creek (CW21), updated in 2010.

Spring Brook Creek is the main source of surface water throughout the watershed and almost 50 percent of this creek is classified as ERW trout waters, maintaining a high water quality is very important to this valuable resource.

Between Skinner Dam and the City of Antigo, in-stream habitat is severely impacted due to heavy runoff deposits of silt due primarily to agricultural practices. In some cases in this area, Spring Brook has been altered to the point that it no longer flows in its original channel. The fairground's racetrack discharges fine clay sediment to the stream during spring runoff and summer rain events. *(NCWRPC Note: Several years ago, there was a retention pond build at the fairground to collect the runoff from the racetrack.)* Below the WWTP in Antigo, Spring Brook has exhibited higher phosphorus levels than immediately above the treatment plant. Further below the City of Antigo, Spring Brook is wide and shallow in areas due to historic and the present day practice of allowing livestock free access to the stream.

Prior to building the city of Antigo's Waste Water Treatment Plant (WWTP), Spring Brook was classified as a non-trout water below the city. Since that time, water quality in Spring Brook has improved dramatically, allowing for the reestablishment of trout in the 12 mile reach below Antigo (Class I).

However, a 2.5- mile stretch of the creek near Antigo is still non-trout water. Warmer waters due to Antigo Lake and urban runoff prevent establishment of trout in this stretch. Biotic index sampling conducted in 1987 showed very poor and good water quality conditions in Spring Brook. Spring Brook also experiences excessive growths of filamentous algae and aquatic plants downstream of Antigo WWTP, indicating nutrient problems. Monitoring in 2009 and 2010 indicated nutrient levels are elevated below the WWTP when compared to background levels upstream. This is believed to accentuate the excessive algae and macrophyte growth found downstream of the discharge. Extreme diurnal dissolved oxygen swings have been recorded downstream, all the way to the Eau Claire River. In the 1990s, the watershed was ranked per Wisconsin's DNR Nonpoint Source Priority Watershed selection criteria. Based on surface and groundwater data and land use characteristics, the overall ranking is high, establishing a high priority for future grant eligibility through the DNR Nonpoint Source Program. In 1997, a nonpoint source control plan

was approved for the Spring Brook Watershed; the plan completion date was December 2008.

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Impaired Waters – 303(d) Waters

The DNR maintains a list of surface waters that do not meet specific water quality standards outlined by section 303(d) of the Clean Water Act (Table 4). The DNR is required to update the list every two years.

Impaired waters are on Map 1—Designated Waters.

Table 4 Impaired Waters [303(d)] Langlade County

Name	Pollutant	Impairment	Priority
Clear Lake	Atmospheric deposition of Mercury	Contaminated fish tissue	Medium
Deep Wood Lake	Atmospheric deposition of Mercury	Contaminated fish tissue	Medium
Greater Bass Lake	Atmospheric deposition of Mercury	Contaminated fish tissue	Medium
Little Sand Lake	Atmospheric deposition of Mercury	Contaminated fish tissue	Medium
Lower Bass Lake	Atmospheric deposition of Mercury	Contaminated fish tissue	Medium
Spring Brook	Unspecified metals from urban runoff	Chronic aquatic toxicity	Low
Summit Lake	Atmospheric deposition of Mercury	Contaminated fish tissue	Medium

Source: WDNR, online search in March 2014

Table 5	**Draft 2014 Impaired Waters [303(d)] Langlade County**	
Name	Pollutant	Impairment
Little Sand Lake	To be unlisted.	
Enterprise Lake	Unknown	Point Source/Non-Source Point
Spring Brook Creek – southwest of Antigo	Total Phosphorus	Non-Point Source
West Branch Eau Claire River	Total Phosphorus	Point Source/Non-Source Point
Upper Post Lake	Total Phosphorus	Point Source/Non-Source Point

Source: WDNR, online search in March 2014

Outstanding/Exceptional Resource Waters

Wisconsin has designated many of the state's highest quality waters as Outstanding Resource Waters (ORWs) or Exceptional Resource Waters (ERWs). Waters designated as ORW or ERW are surface waters which provide outstanding recreational opportunities, support valuable fisheries and wildlife habitat, have good water quality, and are not significantly impacted by human activities. ORW and ERW status identifies waters that the State of Wisconsin has determined warrant additional protection from the effects of pollution. These designations are intended to meet federal Clean Water Act obligations requiring Wisconsin to adopt an "antidegradation" policy that is designed to prevent any lowering of water quality – especially in those waters having significant ecological or cultural value.

Outstanding Resource Waters (ORWs) typically do not have any point sources discharging pollutants directly to the water (for instance, no industrial sources or municipal sewage treatment plants), though they may receive runoff from nonpoint sources. New discharges may be permitted only if their effluent quality is equal to or better than the background water quality of that waterway at all times—no increases of pollutant levels are allowed.

Exceptional Resource Waters (ERWs) are more likely designated if a waterbody has existing point sources at the time of designation. Like ORWs, dischargers to ERW waters are required to maintain background water quality levels.

See Map 1–Designated Waters for all the ORWs and ERWs countywide.

Outstanding Resource Waters in Langlade County include 2 lakes, 4 rivers, and 6 creeks. Exceptional Resource Waters in Langlade County include 7 rivers, 2 flowages, 95 creeks, and 1 spring.

Designation as an ORW or ERW has implications for permitting, in order to protect the quality of the waterway. Point source discharges must meet background water quality, except in specific cases on ERW. A general or individual permit is required for various waterway alteration activities. Increased environmental review is required for high capacity wells near ORW/ERW.

Invasive Species Management

Terrestrial Invasive Species

Langlade County is a partner in the Timberland Invasive Partnership (TIP), a cooperative endover with the Lumberjack RC&D, and USDA Forest Service. This is Cooperation Weed Management Area (CWMA) between Menominee, Shawano, Oconto and Langlade County; and the Menominee and Stockbridge-Munsee Tribes.

Aquatic Invasive Species

One threat to lake health is invasive species. Wisconsin Statute Section 23.22 (1) (c) officially defines invasive species as "nonindigenous species whose introduction causes or is likely to cause economic or environmental harm or harm to human health."

Langlade, Lincoln, and Forest Counties, and Lumberjack Resource Conservation and Development have joined together to fight aquatic invasive species in this tri-county area by jointly hiring an aquatic invasive species (AIS) coordinator. It is the responsibility of the AIS coordinator to work with citizens, volunteers, county staff, DNR staff, and other AIS professionals to educate the public and control aquatic invasive species in the Tri-County area.

Langlade, Lincoln, and Forest Counties each have a strong volunteer citizen base that is concerned about their lakes and what aquatic invasive species can do to them. The tri-county AIS partnership can build on volunteer efforts that are already in place.

The AIS coordinator and area volunteers work together on a variety of programs, including:
Clean Boats Clean Waters program, and
(Volunteers are trained to organize and conduct a boater education program in their community.)

Citizen Lake Monitoring Network program.
(Volunteers are trained to collect scientific data on a lake for the DNR.)

45 lakes in Langlade County have aquatic invasive species in them as of 2014.

Groundwater

Groundwater supplies nearly all of the water for residential, commercial, and industrial uses in Langlade County. In general, groundwater use has increased in the county as urban areas continue to grow and agricultural users install more high capacity wells. The increase in rural housing developments and a water bottling facility, each with their own private well, also places demands on groundwater.

Groundwater is comprised of the portion of rainfall that does not run off to streams or rivers and that does not evaporate or transpire from plants. This water percolates down through the soil until it reaches the saturated zone of an aquifer. The average recharge from precipitation on 1 square mile of the Antigo Flats is about 256,000 gallons per day. The groundwater generally moves southward, and the level generally rises in spring, declines in summer, rises slightly in fall, and declines in winter. Use of groundwater for irrigation has caused a measurable decline in the water level only in the immediate vicinity of the withdrawal. The depth to groundwater ranges to as much as 138 feet beneath the hills on the moraines. On the Antigo Flats, the depth to groundwater averages about 25 feet. Groundwater yields from the glacial deposits vary. Generally, the outwash yields more than the glacial till. The underlying crystalline bedrock yields little or no water. (Soil Survey)

In general, the infiltration and recharge rates in Langlade County are relatively high due to the coarse texture of surficial materials. Calculated groundwater recharge rates for the Eau Claire River basin in southwestern Langlade County and the Wolf River basin in eastern Langlade County were 6.1 in/year and 10.8 in/year, respectively. The lower recharge rate for the Eau Claire River basin is probably due to lower permeability and infiltration rates of the tight, finer grained Wausau and Merrill tills that cover the western part of the basin. (WGNHS)

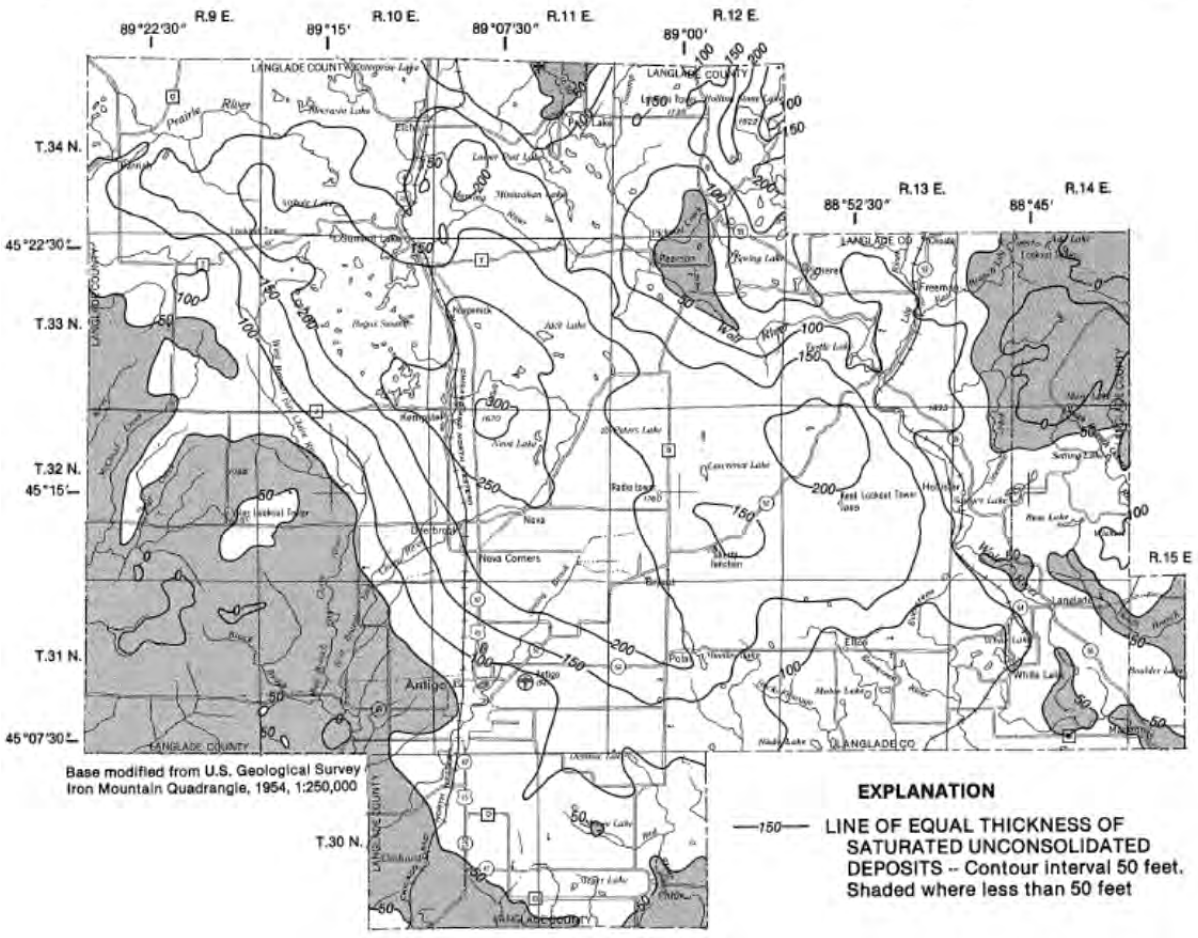
Natural groundwater generally discharges at streams, marshes, lakes, and springs or as underflow. The continued flow of perennial streams during long dry periods is caused by the natural discharge of the groundwater reservoir. Langlade County uses approximately 1.4 billion gallons of groundwater for irrigation, bottling, and mining operations each year. Urban groundwater uses in the County are approaching 400 million gallons annually from the three municipal water systems combined (Antigo, White Lake, and Elcho). Ensuring

an adequate supply of usable groundwater is an important issue in Langlade County since water could become more difficult to obtain for everyone when the resource is more heavily used.

The sand and gravel aquifer consists of saturated glacial sand and gravel. The thickness of saturated glacial deposits of sand and gravel generally ranges from 50-250 feet (see Figure 2). Areas where the saturated thickness is less than 50 feet are shaded in Figure 2. Saturated sand and gravel deposits suitable for well development are present at depths less than 150 feet throughout much of the county.

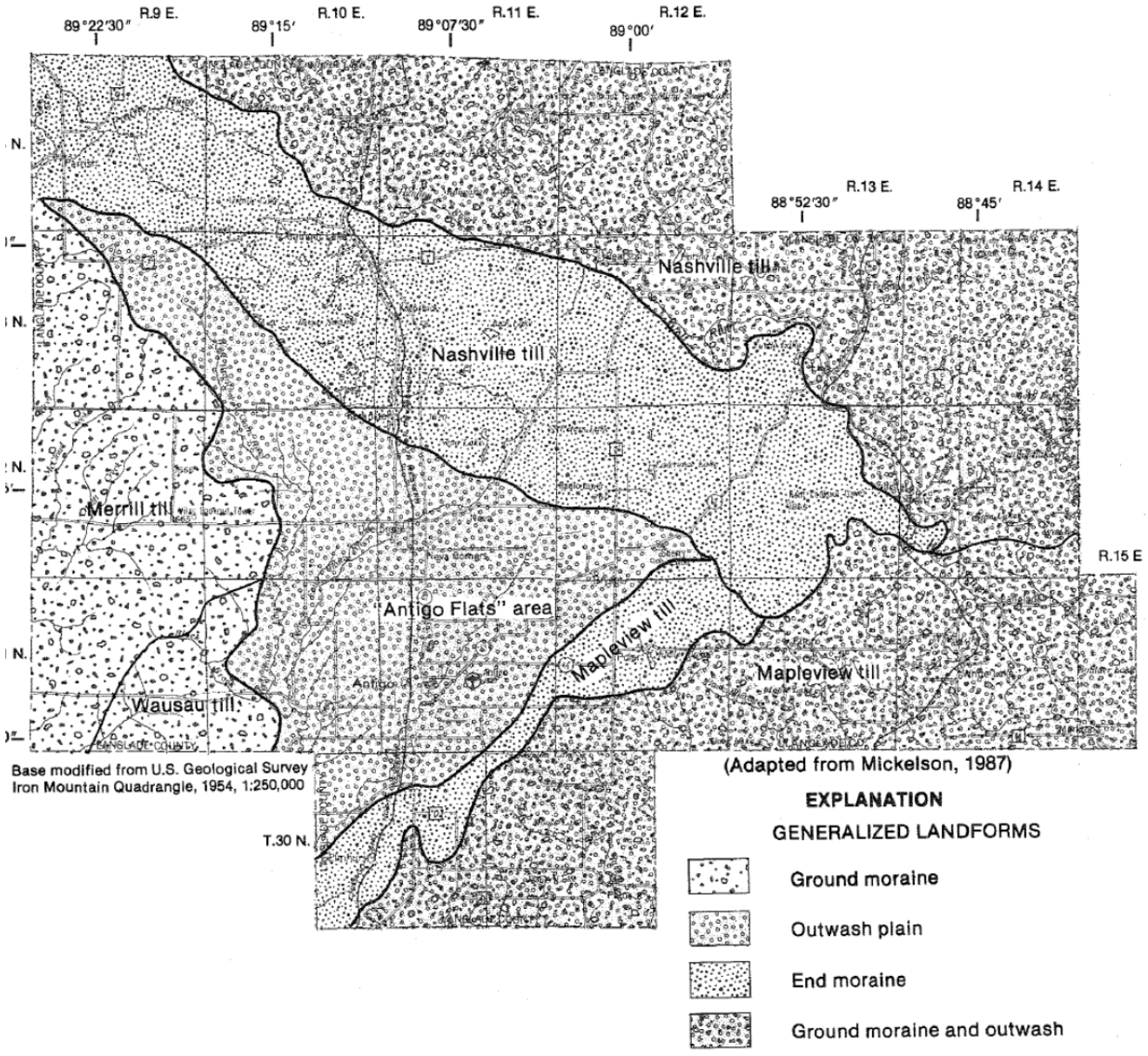
Outwash deposits are present at land surface in much of Langlade County and often extend to considerable depths. For example, in the Antigo Flats area (see Figure 2) saturated outwash deposits are more than 100 feet thick. Most land surfaces with a gentle slope and significant areal extent are underlain by such deposits. These deposits are commonly capable of sustained well yields of 400 gallons/minute or more.

Figure 2 Saturated thickness of glacial deposits in Langlade County.



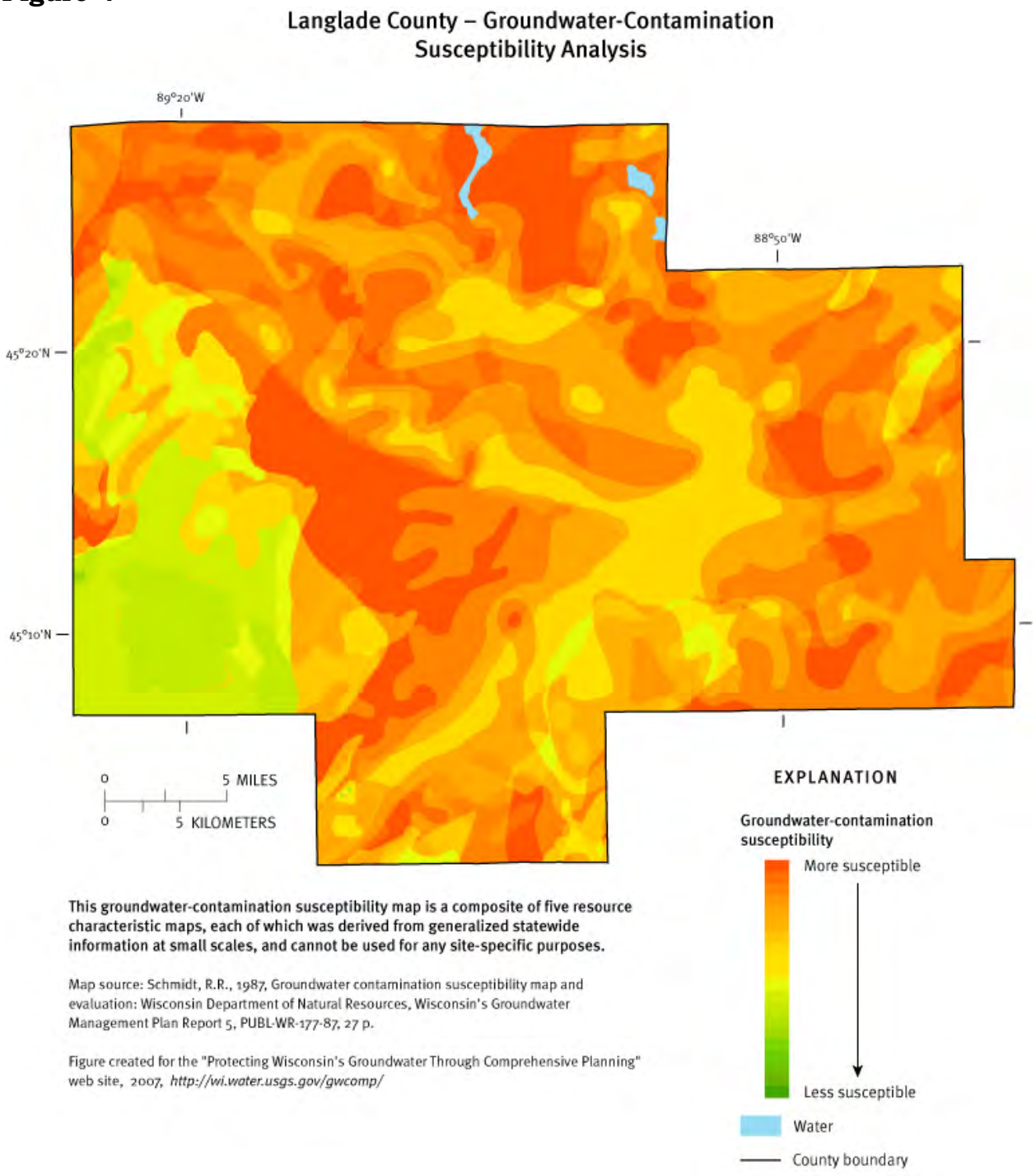
Source: WGNHS, Water Resources Of Langlade County

Figure 3
Generalized landforms and associated glacial units in Langlade County.



Source: WGNHS, Water Resources Of Langlade County

Figure 4



Source: USGS Groundwater contamination susceptibility map,
Accessed via website: Protecting WI's Groundwater Through Comprehensive Planning.

The quality of the ground water is generally very good. Many soils however have very porous layers that are poor filters for domestic waste and agricultural chemicals. The impact of development and agriculture may cause deterioration of the ground water. Generally, the content of dissolved solids in the ground water is relatively low in the western half of Langlade County and relatively high in the eastern half. The higher content in the eastern part probably results from a higher content of limestone in the glacial deposits.

Groundwater quality can be impaired by a variety of pollutants including leaking underground storage tanks (LUSTs), landfills, septic tanks, over-application of pesticides and fertilizers, and spills of hazardous chemicals. The most common contaminants found in Wisconsin's groundwater are pesticides, nitrates, nitrogen, and volatile organic compounds (VOCs). These contaminants come from a multitude of sources including nitrogen-based fertilizers, septic systems, animal waste storage, feedlots, municipal and industrial wastewater discharges, and sludge disposal. Nitrates are an issue in the southern part of the county in vegetable and potato production areas. Groundwater contaminants can affect the health of humans, livestock, and wildlife. Because groundwater seeps more slowly than surface runoff, pollution that occurs today may not become evident for several years. Once polluted, the groundwater is very difficult to purify and may take many years to clean itself by the dilution process.

Groundwater quality summary:
83% of 193 private well samples collected in Langlade County from 1990-2006 met the health-based drinking water limit for nitrate-nitrogen.

A 2002 study estimated that 18% of private drinking water wells in the region of Wisconsin that includes Langlade County contained a detectable level of an herbicide or herbicide metabolite. Pesticides occur in groundwater more commonly in agricultural regions, but can occur anywhere pesticides are stored or applied.

Potential sources of groundwater contamination summary:
There are no atrazine prohibition areas in Langlade County.

In 2014 there are 14 open-status sites in Langlade County that have contaminated groundwater and/or soil. These sites are generally located in: Antigo (9 sites), White Lake (1 site), Kempster (1 site), Elcho (1 site), and Summit Lake (1 site).

There are 2 concentrated animal feeding operations in Langlade County.
There are no licensed landfills in Langlade County.
There are no Superfund sites in Langlade County.

Previous Reports Summarized

Plans that were used to make this LWRM Plan are summarized below:

Langlade County Comprehensive Plan 2009–2029
(http://www.ncwrpc.org/langlade/langladecp.html)

The comprehensive plan is a combination of nine chapters—Issues & Opportunities; Natural, Cultural, & Agricultural Resources; Housing; Transportation; Economic Development; Land Use; Utilities & Community Facilities; Intergovernmental Cooperation; and Implementation. Zoning and subdivision ordinances must be consistent with the comprehensive plan.

An extensive inventory of natural and agricultural resources exists in this plan for use in the LWRMP.

Headwaters State of the Basin Report, 2002
Contact NCWRPC or DNR to view this report.

The Headwaters Integrated Basin Plan comprises a six county area in the northeastern portion of Wisconsin including the counties of Forest, Florence, Lincoln, Langlade, Oneida and Vilas. The Headwaters Basin includes 42 watersheds from five basins. The five basins are the Green Bay, Lake Superior, Upper Chippewa, Wolf River and Upper Wisconsin. The basin plan provides a snapshot of the current condition of land and water resources in the basin and identifies priority resource issues and concerns. Attachment A contains the major resource issues, concerns, and recommendations identified in the plan as they relate to the Langlade County LWRM plan.

2010 Water Quality Management Plan Update for Spring Brook Watershed
Contact NCWRPC or DNR to view this report.

This report was created by the DNR and lists priorities, goals, and the overall watershed condition for Spring Brook Creek.

Protecting Wisconsin's Groundwater Through Comprehensive Planning
(http://wi.water.usgs.gov/gwcomp/)

USGS, UW Extension, and WDNR developed this website as an inventory of groundwater data from a variety of public sources.

Wisconsin Land Legacy Report 2006-2056

A copy is available at WDNR Service Centers or online at:
http://dnr.wi.gov/Master_Planning/land_legacy.

This report is a comprehensive inventory of the special places that will be critical to meet future conservation and outdoor recreation needs for the next fifty years. Some of the questions asked to guide creation of this report were: Which lands and waters remain unprotected that will be critical for conserving our plants and animals and their habitats? What gaps exist now (and will likely emerge in the future) in providing abundant and satisfying outdoor recreation? How can we most effectively build upon the state's existing investment in protected lands to fill conservation and recreation gaps? What special places will our children and grandchildren wish we had protected?

The Land Legacy report recommends protection of these lands by using federal, state, and local funding opportunities; along with: possibly creating new kinds of incentives for landowners, working to craft comprehensive plans, or offering different types of technical assistance.

Each Langlade County Legacy Area is summarized below with 5 stars representing the highest level for that category:

CN Chequamegon-Nicolet National Forest

Size	Large
Protection Initiated	Substantial
Protection Remaining	Limited
Conservation Significance	☆☆☆☆☆
Recreation Potential	☆☆☆☆☆

EC East and West Branches of the Eau Claire River

Size	Medium
Protection Initiated	Moderate
Protection Remaining	Moderate
Conservation Significance	☆☆
Recreation Potential	☆☆☆

LA Langlade Moraine

Size	Medium
Protection Initiated	Moderate
Protection Remaining	Substantial
Conservation Significance	☆☆
Recreation Potential	☆☆☆

PR Prairie River

Size	Medium
Protection Initiated	Moderate
Protection Remaining	Substantial
Conservation Significance	☆☆☆
Recreation Potential	☆☆☆

RD Red River

Size	Small
Protection Initiated	Limited
Protection Remaining	Substantial
Conservation Significance	☆☆☆
Recreation Potential	☆☆☆

UP Upper Wolf River

Size	Large
Protection Initiated	Substantial
Protection Remaining	Moderate
Conservation Significance	☆☆☆☆☆
Recreation Potential	☆☆☆☆

NRCS Soil Survey for Langlade County, 1986
http://soils.usda.gov/survey/online_surveys/wisconsin/

The Natural Resource Conservation Service (NRCS) is a federal agency that prepared the Langlade County, Wisconsin Soil Survey. The survey contains predictions of soil behavior for selected land uses and also highlights the limitations and hazards inherent in the county's soil. A series of detailed maps identifying the location of soil types in Langlade County accompanies the survey.

Water Resources of Langlade County, Wisconsin, 1987
Contact NCWRPC to view this report.

The USGS in cooperation with UW Extension, WI Geological and Natural History Survey (WGNHS), and Langlade County prepared this report in 1987 just after the Soil Survey was completed.

Tri County Aquatic Invasive Species Strategic Plan, 2013-2015
Contact NCWRPC to view this report.

Langlade, Lincoln, and Forest Counties, and Lumberjack Resource Conservation and Development have joined together to fight invasive species in this tri-county area by jointly hiring an aquatic invasive species (AIS) coordinator. It is the responsibility of the AIS coordinator to work with citizens, volunteers, county staff, DNR staff, and other AIS professionals to educate the public and control aquatic invasive species in the Tri-County area.

This plan was created by the AIS coordinator to guide proactive AIS management within the tri-county area.

PERFORMANCE STANDARDS AND PROHIBITIONS
Chapter 3

The County land and water resource management plans are the local mechanism to implement performance standards and prohibitions. Through Wisconsin Act 27, the Wisconsin Legislature amended State statues to allow LCCs to develop implementation strategies for addressing local water quality priorities related to controlling erosion, sedimentation, and nonpoint source water pollution.

NR 151 Performance Standards and Prohibitions Fact Sheets are in Attachment E.

Agricultural Performance Standards

A voluntary educational approach will continue to be used to achieve erosion control standards in Langlade County. One-on-one contacts with landowners and operators who request technical assistance is the most common method used to promote soil conservation in Langlade County. A backlog of landowners voluntarily willing to resolve water quality issues will be maintained, and the landowners will need to reapply annually to remain on the list. The projects on the list will be annually ranked to determine which project has the most significant water quality or soil erosion problem. These high ranking landowners are then the priority projects for technical assistance and cost sharing during the calendar year.

The performance standards and prohibitions inventory will be completed as limited time and funding allow.

The Langlade County Land Conservation Department (LCD) offers a cost share program for county landowners through ATCP 50 grant funding. This program is used to address soil erosion or other water quality problems, but is not sufficient to address all the needs in the county. The LCD has established the following guidelines to prioritize the highest needs to receive cost share funding:

A ***priority farm*** is one that is found to be non-compliant with the state performance standards and prohibitions. Farms are ranked as follows with the highest priority listed first:

1. Farms with valid citizen complaints filed against them;
2. All Farmland Preservation Program participants will be spot checked once every four years to verify their compliance.

Table 6 identifies agricultural performance standards and the conservation practices that would be used to ensure compliance.

Table 6	**Conservation Practices Used To Comply With Agricultural Performance Standards**
Performance Standard/Prohibition	**Effective Date**
Sheet, rill and wind erosion performance standard (NR 151.02) · All land where crops or feed are grown · Pastures	October 1, 2002 July 1, 2012
Tillage setback performance standard (NR 151.03)	January 1, 2011
Phosphorus index performance standard (NR 151.04) · Croplands and winter grazing areas · Pastures	January 1, 2011 July 1, 2012
Manure storage facilities performance standards (NR 151.05) · New facility · Substantially altered facility · Existing facility · Closure · Margin of safety (new, substantially altered, and existing) · 25-year, 24-hour storm event (new and substantially altered)	October 1, 2002 October 1, 2002 October 1, 2002 October 1, 2002 January 1, 2011 January 1, 2011
Process wastewater handling performance standard (NR 151.055)	January 1, 2011
Clean water diversion performance standard (NR 151.06)	October 1, 2002
Nutrient management (NR 151.07) · Existing croplands in watersheds containing outstanding or exceptional resource waters, impaired waters or source water protection areas · All other existing croplands · New croplands	January 1, 2005 January 1, 2008 October 1, 2003
Manure management prohibitions (NR 151.08) · No overflow of manure storage facilities · No unconfined manure pile in a water quality management area · No direct runoff from a feedlot or stored manure into the waters of the state · No unlimited access by livestock to waters of the state	October 1, 2002 October 1, 2002 October 1, 2002 October 1, 2002

Source: WDNR

NR 216 of Wisconsin's Administrative Code
Subchapter III — Construction Site Storm Water Discharge Permits

> The landowner disturbing one acre or more of land shall submit a notice of intent to the DNR on the appropriate DNR form. Data submitted in the notice of intent forms shall be used as a basis for conferring coverage under a WPDES storm water permit.

This disturbance can create a point source of soil erosion from construction sites to waters of the state and is therefore regulated by DNR.

Agriculture **is exempt** from this requirement for activities such as:

- Planting, growing, cultivating, and harvesting crops;
- Pasturing or yarding livestock;
- Sod farming; and
- Tree nurseries.

Performance Standards Fact Sheets

Available in Attachment E

Agriculture is **not exempt** [NR 216.42(2) Wis. Admn. Code] from the requirement to submit a notice of intent for:

- Constructing agricultural structures (e.g. barns; manure storage facilities, or barnyard runoff control structures).

1. Construction of an agricultural building or facility must follow an erosion and sediment control plan consistent with NR 216.46 Wis. Admn. Code; and include meeting the performance standards of NR 151.11 Wis. Admn. Code.
2. An agricultural building or facility is not required to meet the post-construction performance standards of NR 151.12 Wis. Admn. Code.

Non-Agricultural Performance Standards

Langlade County finds that construction site erosion and uncontrolled stormwater runoff from land disturbing and land development activities can have significant adverse impacts upon local water resources and the health, safety and general welfare of the community, and can diminish the public enjoyment and use of natural resources.

Non-agricultural land disturbance activities in Langlade County are regulated by the following ordinances:

- Zoning Code (Langlade County Code of Ordinances – Chapter 17)
  Administered by: Langlade County Land Records and Regulations.
  The general zoning ordinance, shoreland/wetland ordinance, and floodplain ordinance make up these regulations.

- Land Division Ordinance (Langlade County Code of Ordinances – Chapter 18)
  Administered by: Langlade County Land Records and Regulations.
  It regulates the creation of parcels and the division of land.
- Private Onsite Wastewater Treatment System (POWTS) (Langlade County Code of Ordinances – Chapter 15)
  Administered by: Langlade County Land Records and Regulations.
  It regulates the installation and maintenance of private onsite waste treatment systems.
- Nonmetallic Mining Reclamation Ordinance (Langlade County Code of Ordinances – Chapter 20)
  Administered by: Langlade County Land Records and Regulations.
  It regulates new and existing non-metallic mines and reclamation of mine sites.
- Animal Waste Storage Ordinance (Langlade County Code of Ordinances – Chapter 24)
- Soil and Water Conservation Standard for the Farmland Preservation Program (Langlade County Code of Ordinances – Chapter 19)

Table 7 identifies non-agricultural performance standards and the conservation practices that would be used to ensure compliance.

Table 7	**Conservation Practices Used To Comply With Non-Agricultural Performance Standards**	
Non-Ag. Performance Standard	**Effective Date**	**Conservation Initiative**
Peak discharge (151.123)	1-1-2011	Stream bank protection
Infiltration (151.124)	1-1-2011	Filter strip
Infiltration (151.124)	1-1-2011	Sediment basin
Protective areas (151.125)	1-1-2011	Shoreline protection

Source: Langlade County LCD

Langlade County has also relied on the following State regulations for the protection of natural resources:

- Department of Natural Resources – Chapter 30, Wisconsin Statutes – Navigable Waters
- Department of Natural Resources – Wisconsin Pollution Discharge Elimination System Permits
- Department of Natural Resources – Performance Standards – Administrative Code NR 151
- Department of Natural Resources – NR 216, Stormwater Discharge Permits and Construction Site Erosion Control
- Department of Natural Resources – Chapter 29.601, Wisconsin Statutes – Noxious Substances
- Department of Agriculture, Trade, & Consumer Protection – ATCP 50, Soil and Water Resource Management Program
- Department of Natural Resource – NR115
- Wisconsin Department of Commerce – Chapter Comm. 83

Enforcement Process

A landowner who is out of compliance with State performance standards and prohibitions and refuses technical and financial assistance from the LCD will be notified by mail that they are subject to enforcement actions. They will receive a multi-agency communication from the LCD and DNR. A copy of the enforcement letter will be sent to DATCP. Landowners who are in violation of the Langlade County Zoning Ordinance will be referred to the Langlade County Corporation Counsel. Langlade County will continue to work with the Department of Natural Resources on enforcement of landowners who are in violation of the soil erosion control standards as the County has done in the past.

MAJOR 2008-2013 WORK PLAN ACCOMPLISHMENTS
Chapter 4

Activities performed under Goals 1 & 2.

Goal 1: Protect and improve surface and ground water quality.

- Provided technical assistance and cost-sharing to landowners.
    - Contacted with Private Engineer and Lincoln County for technical design until County hired technician.
    - Worked with DATCP engineer for review of technical design.
- Worked with UW-Extension to provide grazing education opportunities for area farmers.
- Distributed LCD newsletter 2 to 3 times per year to educate landowners.
- Successfully encouraged landowners to sign up for Environmental Quality Incentive Program (EQIP).
- Provided cost-share dollars and technical assistance each year for installation of erosion control practices, manure storage, well decommissioning, nutrient management planning, and other conservation practices.
- Conducted transect survey in 2010.
- Held nutrient management training for farmers each year.
- Prepared restriction maps for farmers as requested.
- Identified local crop consultants certified for nutrient management planning upon request.
- Worked to ensure nutrient management was in place on lands with manure storage systems installed after effective date of ordinance.
- Distributed literature to the public on groundwater protection.
- Continued to administer, implement, and enforce Langlade County Animal Waste Storage Ordinance through annual spot-checks.
- Provided technical assistance and cost-share dollars for manure storage facilities.
- Reported compliance results to landowners.
- Work with Zoning department on shoreland restoration projects.
- Provided education to non-agricultural landowners through sessions and displays.
- Employed tri-county Aquatic Invasive Species coordinator through Lumberjack RC&D for education and support.
- Held “Clean Sweep” programs

Goal 2: Protection of resources through land use planning.

- Spot checked 60-75 farms each year that were part of the Farmland Preservation program.
- Signed 97 Farmland Preservation agreements in the Antigo Flats Agricultural Enterprise Area (AEA).

- Annual Farmland Preservation self certification program
- Worked with landowners to enroll in Farmland Preservation.
- Promoted enrollment in farmland preservation.
- Put out annual news release about value of farmland preservation.
- Joined Cooperative Weed Management Area (CWMA) – Timberland Invasives Partnership (TIP)
- Worked with Langlade County Waterways Association (LCWA) to distribute information about invasive species.
- Educated the public on invasive species via bulletin board display.
- Continued to participate in Wildlife Damage and Abatement program.
- Continued participation in Venison Donation Program.
- Provided technical assistance on stream crossing and trail development and maintenance.
- Required development to be consistent with Comprehensive Land Use Plan.

2015-2019 WORK PLAN AND BUDGET
Chapter 5

WORK PLAN: Our mission *to protect the county's natural communities from degradation* will be implemented through the following work plan over the course of a five-year period, beginning in 2015 and extending through 2019. The goals outlined in the following pages represent how Langlade Conservation Department can address the resource concerns that have been identified by both the *Technical Advisory Committee* and the natural resource assessment prepared by the North Central Wisconsin Regional Planning Commission. The activities provide more detailed and measurable steps toward reaching each goal. The LCD personnel along with agency partners, lake groups, and citizen volunteers will implement all action items as people, time, and funding become available.

The goals are listed below in order of priority as determined by the Langlade County Land Conservation Committee in association with recommendations from the *Technical Advisory Committee and Citizens Advisory Committee.* Technical assistance to various focus groups and educational outreach to the general public are important components of the county conservation program.

2015-2019 Work Plan Goals:

Goal 1: Protect and improve surface and groundwater

Goal 2: Promote Working Forests and Farms

Goal 3: Control Invasive Species

Goal 4: Protect public health from unwanted chemical waste

Goal 5: Develop online presence for public education

Goal 6: Improve forest silviculture for multiple uses

Goal 7: Manage wildlife conflicts

All objectives and activities listed are of equal priority wherever none of them are **bolded**. The lead agencies to complete or initiate the tasks are **bolded**. Tracking measures given will allow for ease of annual reporting to the state and findings as to the successes of the work plan activities. Work plan activities will take place as often as is stated in the Measurement Tools column from 2015 through 2019. An update to the activities outlined here will take place again in 2020.

Specific goals, objectives, and activities are detailed in the Work Plan on the following pages.

BUDGET ESTIMATE: An annual estimated budget for the 2015-2019 work plan is outlined here. In estimating the budget, it is presumed that the county will continue to staff the Land Conservation Department at its current level of 1.5 persons. It is further presumed that DATCP / WDNR will meet their financial obligations for staffing of local conservation personnel and projects.

YEAR	COUNTY	DATCP	COST SHARE	TOTAL ESTIMATE
2015	$36,000	$89,000	$80,000	$205,000
2016	$36,000	$89,000	$80,000	$205,000
2017	$36,000	$89,000	$80,000	$205,000
2018	$36,000	$89,000	$80,000	$205,000
2019	$36,000	$89,000	$80,000	$205,000

Langlade County has been successful in attaining funding from a number of sources in the past. During the implementation phase of the following work plan, we intend to continue applying for grants to sustain the current level of staff and project funding. Potential sources of conservation funding may come from the following:

- Natural Resource Conservation Service (NRCS) Public Assistance Programs
- Department of Agriculture, Trade, and Consumer Protection (DATCP) Soil and Water Resource Management funding
- Department of Agriculture, Trade, and Consumer Protection (DATCP) Farmland Preservation Planning Grant Program
- Wisconsin Department of Natural Resources (WDNR) Lake Planning and Protection Grant Programs; and AIS Education & Management Programs
- Wisconsin Department of Natural Resources (WDNR) Targeted Runoff Management Program - Small scale non-TMDL projects
- Lumberjack Resource Conservation & Development (RC&D)
- Others as they may become available

Goal 1: Protect and improve surface and groundwater.

(Resource Concerns – Soil Erosion, Nutrient Loading, and Shoreline Development)

Objective (Bold = Priority)	**Activities** (Bold = Priorities)	**Responsible Agencies** (Bold = Lead)		**Measurement Tools**
A. Control soil erosion on agricultural lands				
	1. Develop conservation plans using a model that meet the tolerable soil loss on cropland.	**NRCS**		5 plans annually
	2. Provide technical assistance and cost sharing (if available) to landowners, contractors, and others as requested.	**LCD**, UWEX, NRCS		As requested
	3. Promote ground cover through the implementation of best management practices.	**LCD**, UWEX, NRCS		10 acres annually
	4. Promote conservation tillage.	**LCD, UWEX, NRCS**		10 acres annually
	5. Promote rotational grazing to livestock farmers.	**LCD, UWEX NRCS**		1 news release or training session annually
	6. Educate landowners on soil erosion performance standards through newsletter(s), landowner visits, and informational meetings.	**LCD, UWEX**, **NRCS**, LRR		1 news release; landowners visit or informational meeting, department newsletter
	7. Pursue cost sharing to install projects that reduce erosion.	**LCD, NRCS, LRR**,		1 annually
	8. Encourage landowner participation in EQIP.	**NRCS**, LCD		1-2 newsletters annually
	9. Educate the public about wind erosion.	**NRCS,** LCD		1-2 newsletters annually

See Chapter 8 Glossary for definitions of abbreviations used here.

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B. Promote nutrient management				
	1. Provide training session for agricultural producers to develop nutrient management plans for their cropland and pastures.	**LCD,** UWEX		Annual training session to attract 10 farmers.
	2. Educate landowners of the value of nutrient management planning	**LCD, UWEX**		Annual training session 1 news release annually
	3. Print restriction maps for Nutrient Management Plan.	**LCD**		As requested (Maps available on line)
	4. Provide a list of crop consultants certified for nutrient management planning.	**DATCP**, LCD		Have 10 copies available at the front desk. Update list annually.
	5. Encourage landowner participation in EQIP.	**NRCS**, LCD		ongoing
	6. Pursue cost sharing for nutrient management planning.	**LCD, NRCS**		Apply annually
	7. Educate rural non-farm residents about what to expect living next to a farm.	LCD, **UWEX**, **LRR**, Forestry		1 news release annually Send document to real estate agencies to be given to potential rural resident clients
	8. Ensure landowners with manure storage systems installed since county ordinance became effective have a nutrient management plan.	**LCD**		Annually submittal of NMP for each issued permit (based on number of issued permits)
C. Protect groundwater from contamination				
	1. Provide technical assistance and cost sharing (if available) to 1 landowner to properly decommission a well.	**LCD, LRR**		1 annually
	2. Distribute literature in office literature racks about groundwater protection.	**LCD, LRR, Health**		Provide 50 copies annually in office literature racks
	3. Ground water/ well testing	**Health, LRR**		Suggest testing be done with change in rural resident landownership
	4. Encourage landowner participation in EQIP.	LCD, **NRCS**		ongoing

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D. Properly manage animal waste.				
	1. Administer, and enforce Langlade County's Animal Waste Storage Ordinance	**LCD**		Annual NMP spot check for all farms with issued permits
	2. Educate landowners through landowner visits, newsletter, and informational meeting.	**LCD**		1 or 2 newsletters annually During visit for FPP done every 4 years Email as new information is made available
	3. Provide technical assistance and possibly cost share for new animal waste storage facilities.	**LCD, NRCS**		As requested
	4. Encourage landowner participation in EQIP.	LCD, UWEX, **NRCS**		ongoing
	5. Pursue cost sharing for upgrading existing animal waste storage facilities.	**LCD, NRCS, DNR**		As needed in the farming community
E. Implement agricultural performance standards.				
	1. Provide technical assistance to landowners with mitigation requirements.	**LCD, NRCS, UWEX, LRR,** DNR		As needed.
	2. Make a list of native plants available to area landowners.	**LRR, LCD**		Provide 50 copies of plant list annually in office public literature racks
	3. Work with LRR to create a shoreland zoning fact sheet, and publish online to encourage compliance with the non-agricultural performance standards and prohibitions.	LCD, **LRR**		Provide 50 copies annually in office public literature racks, Provide to all new shoreland property owners in their mailing.
	4. Promote development of nutrient management plans	**LCD, UWEX,** LRR		1 or 2 newsletters annually During visit for FPP done every 4 years Email as new information is made available
	5. List the agricultural prohibitions on department web site	**LCD**, IS		Create1 web site for department

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	4. Provide technical assistance and possibly cost sharing to ensure: a. No overflowing manure storage facility; b. No unconfined manure pile in a water quality management area; c. No direct runoff from feedlot or stored manure pile; d. Restricted access by livestock to waters of the state.	**LCD**		1-2 newsletters send annually. During the 50 to 75 FPP spot checks done every year.
	5. Promote best management practices.	**LCD, NRCS**, LRR,		ongoing
	6. Encourage landowner participation in EQIP.	LCD, UWEX, **NRCS**		ongoing
F. Implement non-agricultural performance standards.				
	1. Inform contractors, developers, and citizens about non-agricultural performance standards.	DATCP, **LRR**		Have copies available in office public literature racks. Provide a copy with every zoning permit issued
	2. Educate about ground water contamination	**Health, LRR, LCD**		Department newsletters, Have copies available in office public literature racks.
	3. Educate public about damage caused by failing septic systems	**Health, LRR**,		Replace of at least 1 septic system annually
	4. Educate public about damage caused by wind/rain and lack of vegetative cover has on the shoreland	**LRR, LCD**		1 shoreland restoration annually

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G. Establish and protect vegetated shoreland buffers.				
	1. Promote the benefits of shoreland buffers through presentations	**LRR**, LCD, AIS		3 events Annually
	2. Work with lake district / associations to distribute educational information.	**LRR,** LCD		1 event Annually
	3. Distribute educational handouts on shoreland health, including brochures, to the public on display rack in Land Records Office.	**LRR**		Ongoing. Have copies available in office public literature racks.
	4. Provide access to cost-sharing for shoreline and stream bank restoration through DATCP allocations.	**LCD,** LRR, DATCP		1 Annually
	5. Create technical design for shoreline and stream bank restorations projects.	**LCD**, LRR, NRCS		1 Annually
	6. Encourage voluntary restoration of shoreland buffers through cost-sharing using Lake Protection Grant funds.	**LRR,** Waterways		3 Annually
	7. Maintain shoreland buffer restoration demonstration sites on county owned shoreland properties for examples of restoration.	**LRR,** Forestry		2 times Annually
	8. Stock and update displays at demo sites with educational information on shoreland buffer health each year as materials become worn.	**LRR,** Forestry		Ongoing
	9. Share techniques used in shoreland restoration with other counties and agencies.	**LRR,** LCD, UWEX		Ongoing as requested
	10. Seek funding to hold workshops for contractors and landowners on proper techniques and practices for shoreline stabilization and buffer restoration.	**LRR**		1 Annually

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H. Increase compliance with and education of ordinances and waterway classifications.				
	1. Educate public on shoreland ordinances and waterways classification obligations and benefits through presentations.	**LRR**		2 Annually
	2. Educate new shoreland owners on shoreland health and landowner's obligations through an information packet mailed to them upon purchase of property.	**LRR**		Monthly, based on change in land ownership
	3. Use shoreland zoning ordinance to increase number of vegetated buffers by requiring restoration or protection with certain zoning permits.	**LRR**		20 Annually
	4. Monitor properties for compliance with shoreland restoration permits.	**LRR**		50 Annually
	5. Develop shoreland restoration plans for property owners required to restore their vegetative buffers.	**LRR**		20 Annually
	6. Provide landowners with list of native plants for restorations.	**LRR**		Ongoing

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I. Inform contractors, developers, and citizens about construction site erosion control.				
	1. Distribute a fact sheet regarding construction site erosion control to contractors or landscapers.	**LRR, LCD**		1 time a year distribute fact sheet to 35 contractors & landscapers
	2. Seek funding to hold workshops for contractors on proper techniques and practices for shorelines and lake buffers	**LRR, LCD**		Seek funding to hold 1 workshop annually for 35 participants
J. Assist agricultural producers on proper nutrient management, conservation plan development, and agricultural best management practices (BMP's)				
	1. Create a list of agriculture producers in the county	**LCD**, NRCS, UWEX, LRR, DATCP		Create and maintain 1 list of agriculture producers, updated annually
	2. Implement agricultural BMPs with voluntary producers	**LCD,** DATCP, NRCS		Inform and implement BMPs with 2 agricultural producers
	3. Review and record nutrient management for landowners and land users	**NRCS**, LCD , UWEX, DATCP		2 nutrient management plans
	4. Review pest management plans for landowners and land users	**NRCS, UWEX**		2 pest management plans
	5. Investigate septic effluent land spreading on water quality	**LRR, LCD, Health**		Create 1 document

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K. Promote rotational grazing to protect surface and ground water.				
	1. Provide information to local farmers regarding pasture walks in the area.	**LCD, UWEX**		Research & provide 3 local farmers with information
	2. Develop a rotational grazing plan for one farmer in the county	**LCD**, DATCP, NRCS, UWEX		Develop 1 plan annually
L. Reduce pollution from stormwater runoff in developed areas.				
	1. Provide guidance and/or technical assistance for two local units of government on storm water management	**DNR,** LRR, Health		Send information to 19 local gov'ts, & assist 2 local gov'ts
	2. Assist local units of government in Storm Water Pollution Prevention Plans (SWPPP)	**LRR, DNR, Health**		Send information to 19 local gov'ts, & assist 1 gov't
	3. Encourage local units of government to apply for stormwater management funding through DNR's Targeted Runoff Management Program (TRM)	**DNR,** LCD, LRR, Health		Send information to 19 local gov'ts
	4. Encourage landowners to use rain gardens and rain barrels. Provide information and technical assistance to those interested	**LCD, LRR, UWEX**		Have copies available in office public literature racks. Provide information to 50 landowners, assist 5 with implementation annually
M. Educate the public on sources of urban pollution.				
	1. Distribute existing publications and provide information for two local media outlets and at 3 public locations.	**UWEX, LCD,** DNR, Health		Distribute 10 different publications to 2 local media and 3 public locations annually Have copies available in office public literature racks
	2. Create a link from LCD web page to DNR website on Runoff Management	**LCD**, IS		Provide 1 separate link
	3. Assist local units of government by helping distribute fact sheets to the public	**LCD**		Contact 17 towns, 1 city, & I village; distribute 200 fact sheets. Have copies available in office public literature racks

Goal 2: Promote Working Forests and Farms.

(Anticipated Outcome – Preserve economically viable farmland and forestland for future generations.)

Objective (Highest priority in bold)	**Activities** (Highest priority in bold)	**Responsible Agencies** (Lead agency in bold)		**Measurement Tools**
A. Maintain economically viable forests.				
	1. Provide technical assistance to local governments to implement comprehensive plans.	**LRR, NCWRPC**		Quarterly NCWRPC newsletter to every local government. Maintain local plans and map revisions online.
	2. Promote involvement in Managed Forest Law program for tax benefits.	**Forestry, DNR**, LRR, LCD		Ongoing
B. Preserve productive farmland.				
	1. Promote the value of maintaining productive farmland.	**LCD**, UWEX, LRR,		Annually issue a news release to local media.
	2. Spot check of active participants	**LCD**		50 to 75 annually
	3. Farmland preservation self certification.	**LCD**,		Annually to all active participants.
	4. Promote and assist landowners in applying to the Antigo Flats Agricultural Enterprise Area	**LCD, LRR**		5 per year
	5. Require development in agricultural area to be consistent with the Comprehensive Plan	**LRR, LCD**		Review of all zoning change requests in agricultural lands
	6. Provide technical assistance to local governments to implement comprehensive plans.	**LRR, NCWRPC**		Quarterly NCWRPC newsletter to every local government. Maintain local plans and map revisions online.
C. Maintain Farmland Preservation Plan (FPP).				
	1. Update Farmland Preservation Plan from 1983 version.	**LCD, LCC,** NCWRPC		Created new Farmland Preservation Plan.
	2. Advertise income tax benefit opportunity, along with other programs in FPP.	**LCD, LCC**		Annually insert informational ad in department newsletter. Annually speak at local meeting where tax advisors will come.

Goal 3: Control Invasive Species.

(Anticipated Outcome –Native ecosystem protection.)

Objective (Bold = Priority)	**Activities** (Highest priority in bold)	**Responsible Agencies** (Bold = Lead)		**Measurement Tools**
A. Control Terrestrial Invasive Species				
	1. Pursue GLRI , DNR, and /or RC&D grant to continue TIS employee	**LCD, TIP**		2 annually or per granting cycle
	2. Inventory populations on county owned properties (e.g. campgrounds, boat landings)	LCD, **Forestry**		5 sites per year
	3. Hold Invasives ID workshop	**TIP, AIS,** DNR		1 workshop annually
	4. Educational material	**DNR, UWEX**		Have copies available in office public literature racks.
	5. Signs at trail access points: install, inspect and replace if needed	**Forestry**		2 sites per year
	6. Boot brushes at trail access points install, inspect and replace if needed	**Forestry**		Install at 2 sites per year
	7. Eradication workdays	Forestry, DNR, **LCD, LRR, TIP, AIS**		2 times annually
	8. Press releases	**UWEX**, TIP		3 releases annually
	9. Remain active in TIP	**LCD**		ongoing
	10. Educate timber contractors on TIS with each contract	FISTA, **Forestry**		Information provided with each county timber sale
	11. Educate timber land owners	UWEX, **Forestry**		Ongoing
	12. Educate ATVers about the spread on invasive species	**Forestry**, LCD, AIS, TIP, LRR		1 time annually
	13. Share information where invasive species are located in forested areas	**Forestry**, LCD, LRR, AIS, TIP		Create 1 master map of TIS countywide from all agencies and county depts.

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B. Control Aquatic Invasive Species				
	Pursue GLRI , DNR, or RC&D grant to continue AIS employee	**LCD, LRR, RC&D**, Forestry, AIS		1 grant per granting cycle
	1. Clean Boats, Clean Waters training session	**AIS, Lake**		1 annually, or as requested by individual lake
	2. Citizen lake monitoring workshop	AIS, **DNR, Lake**		1 annually, or as requested by individual lake
	3. Monitor lakes workshop	**AIS, DNR, Lake**		1 annually, or as requested by individual lake
	4. Press releases on invasives	**AIS**, UWEX		3 annually
	5. Attend public events and fairs with education tables	**AIS,** UWEX, LCD		2 annually
	6. Release beetles to control purple loosestrife	AIS, LCD, **Lake**		35 pots of beetles will be released near infestations annually.
	7. Attend lake group/waterway meetings	**AIS, LCD, LRR, Lake**		Usually there are 4 requests annually.
	8. Follow up on citizen requests	**AIS, LCD, LRR**		As needed
	9. Provide information to every new shoreland owner	**LRR,** LCD		Every new land owner will received a packet of information based on ownership changes to tax parcels
	10. Point of sale bait shop information	**AIS**		All 10 stores annually
	11. Public access sign maintenance	**AIS, DNR**		4-5 signs annually
	12. Shoreland demo education	**LCD, LR**R		1 annually
	13. Support lake association & lake district's grant requests with letters of support	**LCD, LRR**		1 or 2 annually
	14. Assist manual removal	**AIS, Lake**		As needed

Goal 4: Protect public health from unwanted chemical waste.

(Anticipated Outcome – Improve public health, and environmental & animal safety by reducing risk of exposure to hazardous chemicals.)

Objective (Highest priority in bold)	**Activities** (Highest priority in bold)	**Responsible Agencies** (Lead agency in bold)		**Measurement Tools**
Provide convenient ways to dispose of hazardous waste.				
	1. Host household & agricultural hazardous waste clean sweep	**LCD**, LRR, Health UWEX		Seek clean sweep funds every other grant cycle for bi-annual clean sweep event.
	2. Establish prescription drug collection program.	**Health, LCD**, LRR, Sheriff		Ongoing collection at Safety Building. Seek clean sweep funds every other grant cycle.
	3. Provide public with brochure about hazardous waste's impact on the environment.	**Health, LCD, UWEX, LRR**		Have brochure available in public literature racks by each office.
	4. Promote proper disposal of empty pesticide & fertilizer containers.	**Health, LCD, UWEX, LRR, Co-op**		Annual newspaper article.
	5. Inform public about electronic waste disposal options.	**AVAIL**		Issue press release to announce annual electronics collection.

Goal 5: Develop online presence for public education.

(Anticipated Outcome-Better citizen stewardship of the land and water resources.)

Objective (Highest priority in bold)	**Activities** (Highest priority in bold)	**Responsible Agencies** (Lead agency in bold)		**Measurement Tools**
Establish LCD website with forms and plans on it.				
	1. Provide information about land & water resource management and educational information relating to all the goals in this plan.	**LCD,** IS, UWEX		Website will have information about all Work Plan goals, and digital copies of information.
	2. Establish county webpage for LCD services	**LCD,** IS, UWEX		Create & update 1 web page for LCD
	3. Link DNR and UWEX shoreland restoration web sites to LCD website.	**LCD**, IS		Provide 1 separate link for DNR, provide 1 separate link for UWEX , provide 1 separate link for LRR
	4. Link various organizations (e.g. UWEX-Lakes, NRCS, DATCP, TIP, RC&D) to LCD website.	**LCD**, IS		Provide 5 links to other natural resource sites & pursue additional links annually
	5. Provide a contact list of resource professionals	**LCD**, UWEX, LRR		Provide list of 20 resource professionals, update list annually

Goal 6: Improve forest silviculture for multiple uses.

(Anticipated Outcome – Maintain a healthy vigorous forest, while also providing for wildlife habitat, water quality, and recreation .)

Objective (Highest priority in bold)	**Activities** (Highest priority in bold)	**Responsible Agencies** (Lead agency in bold)		**Measurement Tools**
A. Improve forest management to control sediment, erosion and protect habitat cover types				
	1. Encourage private landowners to use professional forestry assistance	**Forestry,** LCD, **DNR,** AIS, TIP, NRCS, UWEX, LRR		Ongoing
	2. Promote teacher use of DNR Environmental Education for Kids (EEK) program	**DNR**		Ongoing
	3. Promote use of forestry best management practices (BMPs.)	**Forestry, DNR, FISTA, LCD, LRR**		Information provided when logger permits are issued.
	4. Encourage participation in EQIP	**NRCS**, Forestry, DNR, LCD		Ongoing
	5. Promote reforestation of open lands.	**DNR, NRCS, Forestry**, LCD, LRR		Ongoing
	6. Promote use of county owned tree planters	**Forestry, DNR, LCD**		Ongoing
	7. Provide information on invasive species to general public.	**Forestry, LCD, DNR, AIS, TIP, NRCS, UWEX, LRR**		Have information available in office public literature racks

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B. Control illegal garbage dumping on commercial, county, state, and federal forestlands				
	1. Support volunteers and groups to assist with clean up along roadways in the county	**Highway**		Volunteer groups to meet with Hwy Department annually
	2. Help promote and support the "Clean Sweep" program	**Solid Waste**		Program advertised at all 17 town garbage transfer sites
C. Reduce erosion and habitat degradation caused by trail use.				
	1. Assist ATV clubs by providing educational materials (e.g. erosion, & TIS) for users	**Forestry, LCD, LRR**		Annually
	2. Provide technical assistance for erosion problems and trail development	**Forestry, LCD**, LRR, NRCS		As needed

Goal 7: Manage wildlife conflicts.

(Anticipated Outcome – Less crop damage from wildlife.)

Objective (Highest priority in bold)	**Activities** (Highest priority in bold)	**Responsible Agencies** (Lead agency in bold)		**Measurement Tools**
A. Reduce wildlife damage to crops and animals.				
	1. Provide technical assistance to agricultural producers.	**APHIS, LCD**,		Assist landowners having wildlife issues. Usually 4-6 per year.
	2. Participate in *Venison Donation Program*	**APHIS, LCD,**		Usually 4-6 donations annually
	3. Meet with APHIS technician	APHIS, LCD		Usually 4 times a year
	4. Crop damage assessment and claims	**APHIS, LCD, LCC**		Usually 2 times a year
B Provide input to DNR & Conservation Congress about hunting and harvesting goals for large game.				
	1. Attend DNR meeting prior to the spring Conservation Congress meeting	**LCD**, DNR		Annually
	2. Attend Conservation Congress Meeting to express concerns and vote on issues presented	**LCD**, DNR		Annually

MONITORING AND EVALUATION
Chapter 6

Introduction

This chapter addresses both water quality monitoring and briefly summarizes the plan for progress and evaluating the effectiveness of the LWRM plan.

The Langlade County LWRM plan is intended to be a working document that will be reviewed annually by the LCC and LCD to track progress in accomplishing the goals and actions of the Work Plan. Monitoring and evaluation of specific resource issues can be accomplished in many different ways. Some of the methods to track the progress of the LWRM plan are:

Performance Standards and Prohibitions Monitoring and Evaluation

GIS technology will be used in the future as a tool to track and monitor landowner compliance with the performance standards and prohibitions. In addition, all data regarding landowner compliance with the performance standards and prohibitions will be kept in hard copy format in the landowner file.

Spot checks are the main tool used to monitor the erosion of croplands within the county. LCD staff spot check each farm in the Farmland Preservation Program every four years.

Langlade County LCD relies on NRCS to develop conservation plans on the cropland acres of the county. A 2014 database estimates the weighted average tolerable soil loss (T) for Langlade County is 4.1 T.

Water Quality Monitoring

Currently 13 lakes are being monitored for water quality under the Citizen Lake Monitoring Network (CLMN). Volunteers are actively monitoring water clarity, phosphorus, chlorophyll, and aquatic invasive species in the Langlade County lakes. Langlade County will continue to encourage the 6 lake districts and 3 lake associations to continue participating in the CLMN program. Data from citizen water quality monitoring is housed in the DNR's Surface Water Integrated Monitoring System (SWIMS) program. (http://dnr.wi.gov/topic/surfacewater/swims/).

Phosphorus Loading

Nutrient loading can adversely affect water quality by promoting excessive plant growth. In order to reduce nutrient loading by animal waste, all newly installed barnyard systems will be evaluated to ensure compliance with the Wastewater Treatment Strip Standard, which requires phosphorus reduction. The Wastewater Treatment Strip and BARNY spreadsheets will be used to determine compliance with the standard. In addition, the citizen based water quality monitoring conducted on county lakes will be used to monitor whether improvements are being made in water quality.

Nutrient Management

In cooperation with DATCP, Langlade County LCD will monitor and measure nutrient management progress by tracking Nutrient Management Plan checklists for the acreage and with the planner, and by performing periodic plan review to monitor compliance with soil test levels. Farms regulated under the Langlade County Animal Waste Storage ordinance will have nutrient management spot-checks conducted to ensure their nutrient management plan is up to date and actively being used.

Annual Reporting/Spot checks

Langlade County LCD provides annual reports to the Langlade County Board to keep them informed about LCD soil and water resource activities. In addition, LCD also annually reports to DATCP and DNR on progress toward implementation of the performance standards and prohibitions as well as other soil and water resource activities. DATCP and NRCS also conduct annual engineering and conservation planning spot checks to ensure compliance with all applicable technical standards.

INFORMATION AND EDUCATION STRATEGY
Chapter 7

Information and education strategies are an integral part of this plan and Langlade County's conservation programs. Educational opportunities for youth and property owners are necessary to heighten awareness about protecting and enhancing the land and water resources they enjoy daily.

Many of the concerns and objectives in the Work Plan emphasize information and educational strategies needed to address resource issues. Possible educational strategies include posting information on the Internet, creating new brochures, holding workshops, and continuing school group and other public presentations. Examples of current educational strategies being employed include: nutrient management farmer training, tax preparer training, and collaboration with UW-Extension to host "Getting Started in Grazing" courses and a farm transition workshop. As plan implementation proceeds and as Work Plan delineated groups meet to determine how to solve a resource concern, then the LCD will further define how to create additional information and education strategies.

There are other general activities that are not listed in this Work Plan, but are regularly performed by LCD staff such as: work with area and State conservation associations to coordinate a multi-County and/or State approach to conservation programming; plan and coordinate the public information and educational programs of the LCC, such as Soil and Water Stewardship week, and recognition of outstanding conservation land managers and educators; attend and participate in Lumberjack Resource Conservation and Development (RC&D) council meetings; support and attend Timberland Invasive Partnership (TIP) meetings and participate in projects; attend and participate in North Central Land and Water Conservation Association (NCLWCA) area meetings; support and attend Langlade County Waterways Association (LCWA) meetings; attend Wisconsin Association of Lakes (WAL) State convention; and attend Wisconsin Land+Water Conservation Association (WLWCA) annual conference.

GLOSSARY
Chapter 8

303(d) Waters – Also called **List of Impaired Waters**. This list identifies waters that are not meeting water quality standards, including both water quality criteria for specific substances or their designated uses. It is used as the basis for development of Total Maximum Daily Loads (TMDLs) under the provisions of section 303(d)(1)(C) of the Clean Water Act, U.S. Environmental Protection Agency (EPA). The EPA requires that the DNR update its list every 2 years.

Antigo Flats Agricultural Enterprise Area (AEA) – The Antigo AEA allows eligible landowners to enter into voluntary farmland preservation agreements to collect the farmland preservation tax credits. Through this designation, the community can encourage continued agricultural production and investment in the agricultural economy. This term is used in the Work Plan.

Animal Waste Management Program – This regulatory program, administered by the DNR via NR 243, seeks to identify and correct animal waste-related water quality problems.

Animal and Plant Health Inspection Service – Wildlife Services (APHIS) – Part of USDA, APHIS-WS provides assistance to manage animal damage.

Aquatic Invasive Species (AIS) – Aquatic organisms that invade ecosystems beyond their natural, historic range. Their presence may harm native ecosystems or commercial, agricultural, or recreational activities dependent on these ecosystems. They may even harm our health. This term is used in the Work Plan.

ATCP 50 – The chapter of Wisconsin's Administrative Code that implements the Land and Water Resource Management Program as described in Chapter 92 of the WI Statutes. It identifies those conservation practices that may be used to meet performance standards.

AVAIL – This term is used in the Work Plan. AVAIL is the local domestic abuse shelter that uses the electronics recycling event for revenue.

Best Management Practices (BMPs) – The most effective conservation practice or combination of conservation practices for reducing nonpoint source pollution to acceptable levels.

Chapter 92 – Portion of Wisconsin Statutes outlining the soil and water conservation, agricultural shoreland management, and animal waste management laws and policies of the State.

Conservation Plan – A record of decisions and intentions made by land users regarding the conservation of the soil, water and related natural resources of a particular unit of land.

Conservation Reserve Enhancement Program (CREP) – An add-on to the CRP program, which expands and builds on CRP's success in certain areas of the State.

Conservation Reserve Program (CRP) – A provision of the federal Farm Bill that takes eligible cropland out of production and puts it into grass or tree cover for 10-15 years.

Cooperator – A landowner or operator who is working with, or has signed a cooperative agreement with, a County LCC.

Co-op – This term refers to the local farm cooperatives, and is used in the Work Plan.

County Conservationist – County Land and Water Conservation Department head, responsible for implementing programs assigned to the LWCD and for supervising LWCD staff.

Critical Sites – Those sites that are significant sources of nonpoint source pollution upon which best management practices shall be implemented as described in § 281.65(4)(g)8.am., WI Stats.

Crop Consultants – Independent Crop Consultants provide services to growers in integrated crop and farm management programs, working directly with farmers, and advising them in areas such as watershed management, integrated nutrient and pest management, and animal waste management. Their primary purpose is implementing scientific and technological advances to enhance environmental sustainability and profitability on clients' farms.

Department of Administration (DOA) – The State agency responsible for establishing the comprehensive planning grant program.

Department of Commerce (COMM) – The State agency responsible for Statewide standards for erosion control at building sites, and for private on-site wastewater treatment systems.

Department of Agriculture, Trade, and Consumer Protection (DATCP) – The State agency responsible for establishing Statewide soil and water conservation policies and administering the State's soil and water conservation programs. The DATCP administers State cost-sharing funds for a variety of LWCC operations, including support for staff, materials and conservation practices. Referred to in the LWRM plan guidelines as the "department".

Department of Natural Resources (DNR) – The State agency responsible for managing State owned lands and protecting public waters. DNR also administers programs to regulate, guide and assist LWCCs, LWCDs and

individual land users in managing land, water, fish and wildlife. The DNR administers State cost-sharing funds for priority watershed projects, Targeted Runoff Management (TRM) grants, and Urban Nonpoint Source Construction and Planning grants.

District Conservationist (DC) – NRCS employee responsible for administering federal conservation programs at the local level.

Environmental Protection Agency (EPA) – The agency of the federal government responsible for carrying out the nation's pollution control laws. It provides technical and financial assistance to reduce and control air, water, and land pollution.

Environmental Quality Incentives Program (EQIP) – Federal program to provide technical and cost-sharing assistance to landowners for conservation practices that provide water quality protection.

Farm Service Agency (FSA) – USDA agency that administers agricultural assistance programs including price supports, production controls, and conservation cost sharing.

Farmland Preservation Program (FPP) – A DATCP land-use program under Chapter 91, Wisconsin Statutes, that helps preserve farmland through local planning and zoning, promotes soil and water conservation, and provides State tax relief to participating landowners.

Forest Industry Safety and Training Alliance Inc. (FISTA) – This group creates training opportunities for loggers. This term is used in the Work Plan.

Forestry – The Forestry, Recreation, and Parks Department of Langlade County. This term used in the Work Plan.

Geographic Information System (GIS) – A computerized system of maps and layers of data about land including soils, land cover, topography, field boundaries, roads and streams. Such geographically based data layers improve the ability to analyze complex data for decision making.

Health – The Health Department of Langlade County. This term used in the Work Plan.

Highway – The Highway Department of Langlade County. This term used in the Work Plan.

Impaired Waters List Same as the 303(d) list.

IS – Information Services Department in Langlade County. This term used in the Work Plan.

Land and Water Conservation Board (LWCB) – This statewide board is composed of three local elected officials, four appointed by the Governor (one shall be a resident of a city with a population of 50,000 or more, one shall

represent a governmental unit involved in river management, one shall be a farmer, and one shall be a member of a charitable corporation, charitable association or charitable trust) and leaders from DNR, DATCP, and DOA. The LWCB oversees the approval of county land and water management plans (s.92.04, stats.).

Land and Water Resource Management Plan (LWRM plan) – A locally developed and implemented multi-year strategic plan with an emphasis on partnerships and program integration. The plan includes a resource assessment, identifies the applicable performance standards and related control of pollution from nonpoint sources, identifies a multi-year description of planned activities, establishes a progress tracking system, and describes an approach for coordinating information and implementation programs with other local, State and federal agencies, communities and organization (s. ATCP 50.12).

LCC (Land Conservation Committee) – The Land Conservation Committee of Langlade County is the unit of county government empowered by Chapter 92 of the Wisconsin Statutes to conserve and protect the County's soil, water and related natural resources. Referred to in the LWRM guidelines as the "committee."

Land Conservation Department (LCD) – The department of County government, in Langlade County, responsible for administering the conservation programs and policies of the Langlade County Land Conservation Committee.

Lake Organizations (Lake) – There are two main types of lake organizations, **lake associations and lake districts**. Lake associations are voluntary groups. Lake districts are special purpose units of government. The same lake may have both a voluntary association and a public management district. This term is used in the Work Plan.

Land Records & Regulations (LRR) – The Land Records and Regulations Department of Langlade County provides zoning, sanitary, land division, and real property listing information. This term used in the Work Plan.

List of Impaired Waters – Also called **303(d) Waters.** This list identifies waters that are not meeting water quality standards, including both water quality criteria for specific substances or the designated uses. It is used as the basis for development of Total Maximum Daily Loads (TMDLs) under the provisions of section 303(d)(1)(C) of the Clean Water Act, U.S. Environmental Protection Agency (EPA). The EPA requires that the DNR update its list every 2 years.

Natural Resources Conservation Service (NRCS) – Part of USDA, NRCS provides soil survey, conservation planning and technical assistance to local land users.

Nonpoint Source Pollution (NPS) – Pollution from many small or diffuse urban and rural sources. Livestock waste finding its way into a stream and causing water pollution is an example of non-point source pollution.

Nonpoint Source Pollution Abatement Program – A DNR water quality program under Chapters 120 and 281, Wisconsin Statutes, that provides technical assistance and cost-sharing to landowners to develop and maintain management practices to prevent or reduce nonpoint source water pollution in designated watersheds.

NR 151 – DNR's administrative code that establishes runoff pollution performance standards for non-agricultural facilities and transportation facilities and performance standards and prohibitions for agricultural facilities and practices designed to meet water quality standards.

Nutrient Management Plan – The Nutrient Management Plan means any of the following: (a) A plan required under s. ATCP 50.04 (3) or 50.62 (5) (f). (b) A farm nutrient plan prepared or approved, for a landowner, by a qualified nutrient management planner.

ORW/ERW – DNR classifies streams as Outstanding Resource Waters (ORW) and Exceptional Resource Waters (ERW) as listed in NR 102.10 and NR102.11. ORW waters have excellent water quality and high-quality fisheries and do not receive wastewater discharges. ERW waters have excellent water quality and valued fisheries but may already receive wastewater discharges.

Priority Farms – Farms identified by the County for having excessive runoff from soil erosion and/or manure resulting in existing or potential water quality problems.

Resource Conservation & Development (RC&D) – Langlade County is one of 10 counties in the Lumberjack Resource Conservation & Development Council, Inc. This term used in the Work Plan.

Shall – The term "shall" in the guideline represents components of a LWRM plan that are required in law and rule.

Soil and Water Resource Management Program (SWRM) – DATCP program that provides counties with funds to hire and support Land and Water Conservation Department staff and to assist land users in implementing DATCP conservation programs (ATCP 50).

Soil Loss Tolerance ("T") – Erosion rate in tons per acre per year of soil that a field could lose and still maintain productivity.

Soil Survey – NRCS conducts the National Cooperative Soil Survey and publishes soil survey reports. Soils data is designed to evaluate the potential of the soil and management needed for maximum food and fiber production.

Timberland Invasive Partnership (TIP) – This term is used in the Work Plan. TIP exists to establish, promote, and implement best management practices (BMP) for invasive species management in the TIP management area. TIP is a partnership that includes Langlade, Menominee, Oconto, and Shawano Counties; and the Menominee and Stockbridge-Munsee Tribes.

Terrestrial Invasive Species (TIS) – Plants that have been moved from their native habitat to an introduced area where they are able to reproduce quickly and crowd out native species.. This term is used in the Work Plan.

United States Department of Agriculture (USDA) – Branch of federal government with responsibilities in the areas of food production, inspection, and storage. Agencies with resource conservation programs and responsibilities, such as FSA, NRCS, APHIS-WS, and Forest Service and others are agencies of the USDA.

University of Wisconsin-Extension (UWEX) – The outreach of the University of Wisconsin system responsible for formal and informal educational programs throughout the State.

Water Quality Management Area (WQMA) – The area within 1,000 feet from the ordinary high water mark of navigable waters that consist of a lake, pond or flowage, except that, for a navigable water that is a glacial pothole lake, the term means the area within 1,000 feet from the high water mark of the lake; the area within 300 feet from the ordinary high water mark of navigable waters that consist of a river or stream; and a site that is susceptible to groundwater contamination, or that has the potential to be a direct conduit for contamination to reach groundwater.

Waterways (Langlade County Waterways Association) – Langlade County Waterways Association is a volunteer group. This term is used in the Work Plan.

Watershed – The geographic area that drains to a particular river, stream, or water body providing its water supply.

Wetlands Reserve Program (WRP) – A provision of the federal Farm Bill that compensates landowners for voluntarily restoring and protecting wetlands on their property.

Wildlife Habitat Incentives Program (WHIP) – Federal program to help improve wildlife habitat on private lands.

Wisconsin Land+Water Conservation Association (WLWCA) – Membership organization that represents the State's 72 County Land and Water Conservation Committees and Departments.

Work Plan – A 5-year plan of federal/State/local agency activities based upon Citizens Advisory Committee, and Technical Advisor Committee developed goals, and objectives.

Oneida County

Forest County

Lincoln County

Oconto County

Marathon County

Menominee County

Shawano County

Map 1

Designated Waters

Langlade County, Wisconsin

Legend

- Town Boundary
- US & State Highways
- County Highways
- Water
- 303D
- Proposed 303D
- Outstanding Streams
- Exceptional Streams

SOURCE: NCWRPC, WiDNR, Langlade County

This map is neither a legally recorded map nor a survey of the actual boundary of any property depicted. This drawing is a compilation of records, information and data used for reference purposes only. NCWRPC is not responsible for any inaccuracies herein contained.

0 2 4 6 Miles

North Central Wisconsin Regional Planning Commission

NCWRPC

210 McClellan St., Suite 210, Wausau, WI 54403

715-849-5510 - staff@ncwrpc.org - www.ncwrpc.org

Oneida County

Forest County

Lincoln County

Oconto County

Marathon County

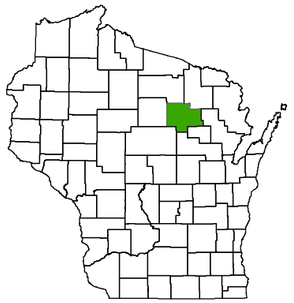
Menominee County

Shawano County

Map 2

Generalized Existing Land Use

Langlade County, Wisconsin



Legend

- US & State Highways
- County Highways
- Town Boundary
- Agriculture
- Commercial
- Residential
- Governmental
- Industrial
- Open Lands
- Outdoor Recreation
- Quarry
- Transportation
- Water
- Woodlands

SOURCE: NCWRPC, WiDNR, Langlade County

0 2 4 6 Miles

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Oneida County

Forest County

Lincoln County

Oconto County

Marathon County

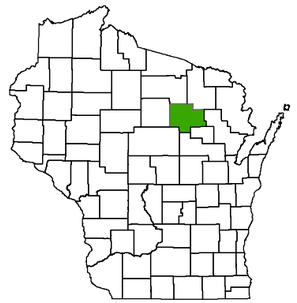
Menominee County

Shawano County

Map 3

Generalized Soils

Langlade County, Wisconsin



Legend

- US & State Highways
- County Highways
- Town Boundary
- Water
- Prime farmland > 40 acres
- Prime if drained > 40 acres
- Antigo-Langlade
- Antigo-Pence
- Kennan-Keweenaw
- Magor-Cable
- Milladore-Sherry-Mylrea
- Oesterle-Minocqua-Scott Lake

SOURCE: NCWRPC, WiDNR, Langlade County

N W E S

0 2 4 6 Miles

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Map 4

Aquatic Invasive Waters

Langlade County, Wisconsin

Legend

- US & State Highways
- County Highways
- Town Boundary
- AIS Waterbodies
- Water

SOURCE: NCWRPC, WiDNR, Langlade County

0 2 4 6 Miles

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Noisy and Pine Creeks

Oneida County

Pelican River

Upper Wolf River and Post Lake

Otter Creek and Rat River

Forest County

Lily River

Lower North Branch Oconto River

Prairie River

Lincoln County

Nicolet National Forest

WOLF RVER

Oconto County

Pine Creek

Upper Eau Claire River

Springbrook Creek

South Branch Oconto River

Trappe River

Marathon County

West Branch Wolf River

Wolf River - Langlade and Evergreen Rive

Red River

Menominee County

Lower Eau Claire (Marathon Co.) River

Middle and South Branches Embarrass Rive

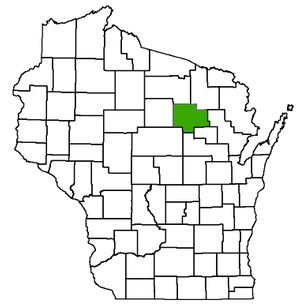
Plover and Little Plover Rivers

Shawano County

Map 5

High Capacity Wells

Langlade County, Wisconsin



Legend

- Town Boundary
- US & State Highways
- County Highways
- Watersheds
- General Direction of Ground-Water Flow
- Water
- Forest Legacy Program
- Langlade County
- Federal Land
- State Land
- High Capacity Well Locations

SOURCE: NCWRPC, WiDNR, Langlade County

0 2 4 6 Miles

North Central Wisconsin Regional Planning Commission

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Oneida County

Forest County

Lincoln County

Oconto County

Marathon County

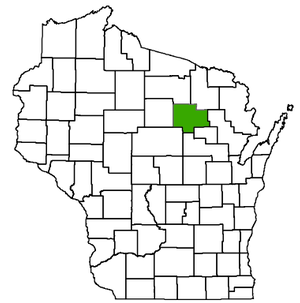
Menominee County

Shawano County

Map 6

Natural Resources

Langlade County, Wisconsin



Legend

- US & State Highways
- County Highways
- Town Boundary
- Water
- Steep Slopes
- Watersheds
- Subcontinental Divide
- Wetlands
- Flood Plain

SOURCE: NCWRPC, WiDNR, Langlade County FEMA

0 2 4 6 Miles

North Central Wisconsin Regional Planning Commission
NCWRPC
210 McClellan St., Suite 210, Wausau, WI 54403
715-849-5510 - staff@ncwrpc.org - www.ncwrpc.org

ATTACHMENT A

Public Hearing Notice

Langlade County
Land Conservation Department

837 Clermont Street
Antigo, WI 54409-1948
715-627-6292
FAX: 715-627-6281
Web site: www.co.langlade.wi.us

Langlade County

Land Conservation Committee

Public Hearing Notice

Notice is hereby given that the Langlade County Land Conservation Committee will hold a public hearing on October 27, 2014 beginning at 3:15 P.M. in the Wolf River Room, Langlade County Resource Center, 837 Clermont Street, Antigo Wisconsin on the Langlade County Land and Water Resource Management Plan 2015-2019. This plan is a guide for the integration of land and water resource management programs in Langlade County.

A paper copy of the plan is available at the Antigo Public Library in Antigo, Elcho, Elton and White Lake and the Land Conservation Department, 837 Clermont Street, Antigo. The plan is available online at: http://www.ncwrpc.org/langlade/lwrmp/index.html

All interested persons are invited to attend said hearing and be heard. Written comments may be sent to: Marie Graupner, 837 Clermont Street, Antigo, WI, 54409.

David Solin, Chair

Land Conservation Committee

Dated this 8th day of October, 2014 at Antigo, Wisconsin

Place in newspaper on these dates ……..…….October 14 and October 20, 2014

ATTACHMENT B

Antigo Silt Loam
Fact Sheet

Antigo Silt Loam
Wisconsin State Soil

Antigo Silt Loam was first identified near the city of Antigo during the Langlade County soil survey project, and was named after the nearby city. This historical marker is located northeast of Antigo on Highway 52. Antigo Silt Loam was named the official State Soil of Wisconsin by the State Legislature in 1983, a declaration reminding us of the importance of our soil resources. Antigo soil represents the more than 800 different types of soil in Wisconsin.

Antigo is one of the most productive agricultural soils in north central Wisconsin. Many areas are used for growing corn, small grains, and hay. In some places, potatoes or snap beans are important crops. Other areas are used for pastureland or timber production. The map indicates the region where areas of Antigo soil occur.

The Antigo Silt Loam logo was created by Francis Hole, former UW Professor of Soil Science. On the surface, three important Antigo soil uses are depicted. Below the land surface is an expanded scale representation of the main soil layers or horizons.

Formation of Antigo

About 11,000 years ago, near the end of the last Ice Age, glacial meltwaters deposited the sand and gravel outwash that forms the lower subsoil and substratum of the Antigo soil. Strong winds and glacial meltwaters then deposited 2 to 3 feet of silty loess and loamy outwash on top of the sand and gravel. Soil development, under northern hardwood forests, produced an organic enriched surface layer and a clay enriched subsoil.

A Prime Agricultural Soil

Antigo occurs mostly on nearly level ground, suitable for agriculture. The organic enriched surface layer provides an excellent seedbed and good tilth. The silty upper layers hold plenty of nutrients and water for plant growth. The underlying sand and gravel layers allow for good drainage. These factors, combined with a favorable climate, make Antigo a Prime Farmland soil, one of the most productive agricultural soils in north central Wisconsin.

For more information on soils:

USDA-Natural Resources Conservation Service:
www.wi.nrcs.usda.gov

Soil education site:
www.statlab.iastate.edu/soils/nssc/educ/Edpage.html

Conserving the Resource

Soil quality is a good indicator of a healthy ecosystem. The soil stores water for use by plants and filters our ground water and surface water. We depend on the soil to provide us with food and fiber. Soils play a major role in recycling carbon and nitrogen. Without soils neither we or the ecosystems in which we live could exist. The quality of our soil resources directly affects our quality of life. Good conservation practices allow us to use the soil while protecting the environment and keeping the soil healthy for future generations.

NRCS helps landowners conserve, protect, and improve the soils and other natural resources on private lands.

WSPSS promotes the advancement of soil science knowledge and education, protection of our soil resources, and the application of soil science in resource conservation and management.

U.S. Department of Agriculture

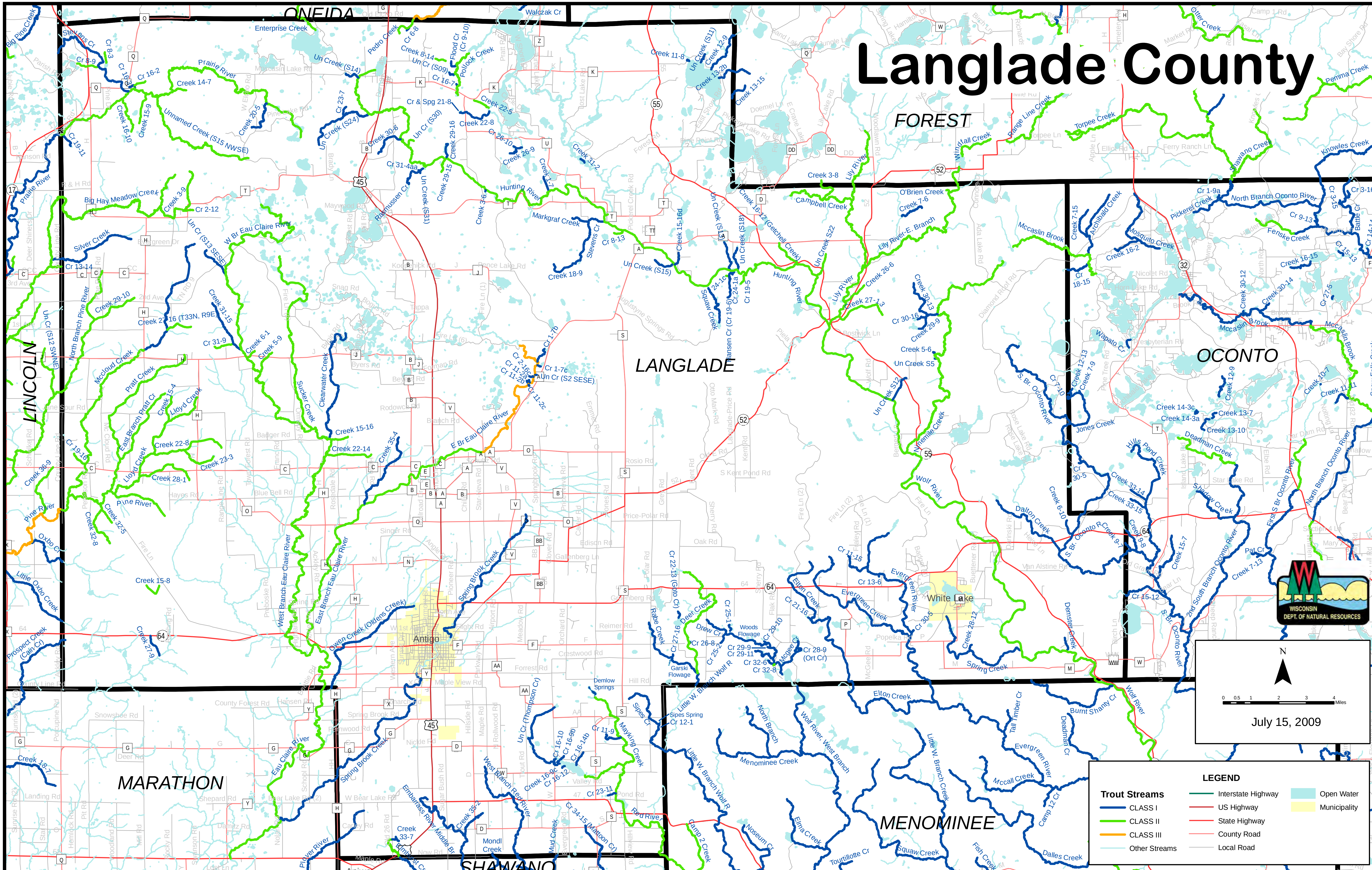
NRCS Natural Resources Conservation Service

Wisconsin Society of Professional Soil Scientists

WSPSS

ATTACHMENT C

Langlade County Trout Streams
Map



Langlade County
FOREST
LANGLADE
OCONTO
LINCOLN
MARATHON
MENOMINEE
SHAWANO
ONEIDA
Antigo
White Lake
WISCONSIN DEPT. OF NATURAL RESOURCES
N
0 0.5 1 2 3 4 Miles
July 15, 2009
LEGEND
Trout Streams
CLASS I
CLASS II
CLASS III
Other Streams
Interstate Highway
US Highway
State Highway
County Road
Local Road
Open Water
Municipality

ATTACHMENT D

Nutrient Management Conservation Practice Standards

Cost Sharing is available for the following practices:

Manure storage systems – manure storage impoundment made by fabricating a structure
Manure storage closure – permanently disabling a manure storage system
Barnyard runoff control system – a system of practices used to contain, divert, retard, treat or control the discharge of runoff from outdoor areas of concentrated livestock activities
Access road & cattle crossings - provide a fixed route for livestock or vehicular travel for resource activities
Animal trails & walkways - established lanes or travel ways that facilitate animal movement.
Critical area stabilization - revegetates bare soils and stabilizes eroding sites.
Diversions - structure that directs runoff water from a specific area without causing excessive soil erosion
Field windbreaks - rows of trees and shrubs that protect areas from wind velocities at the land surface
Filter strips- vegetation the separates environmentally sensitive area from cropland, grazing or disturbed land
Grade stabilizations- structure which stabilizes the grade in a channel to protect the channel from erosion or to prevent gullies from forming or advancing
Heavy use protection – surface material to control runoff and erosion in areas subject to concentrated or frequent livestock activities (*not a standalone practice*)
Livestock fencing- excludes livestock to protect an erodible area or restrict human access to manure storage facility
Livestock watering facilities-trough, tank, pipe to deliver drinking water to livestock
Milking center waste control system – redirect waste water from the milking parlor or milkhouse
Prescribed grazing - Permanent fencing- system which divides pasture into multiple cells to graze intensively for a short period
Prescribed grazing - Permanent pasture (seeding) - cost to establish good seeding stand for pasture
Relocating or abandoning animal feeding operations- discontinue an animal feeding operation to prevent surface water or groundwater pollution or discontinue operation and commence that operation at a suitable site
Riparian buffers – installation – area in which vegetation is enhanced or established to reduce or eliminate movement of sediment, nutrient and other nonpoint source pollutants
Roofs- weather proof covering that shields an animal lot or manure storage structure from precipitation
Roof runoff systems – collecting, controlling, diverting and disposing of precipitation from roofs
Sediment basins – permanent basins that reduce the transport of waterborne pollutants
Sinkhole treatment – modifying a sinkhole or the area around a sinkhole to reduce erosion expansion of the hole and reduce pollution of water resources
Stream bank & shoreline protection – vegetation or structures to stabilize and protect the banks of streams, lakes, estuaries or excavated channels against scour and erosion**.**
Subsurface drains - conduit installed below the surface of the ground to collect drainage water and convey it to a suitable outlet
Terrace system- ridges and channels installed on the contour with non-erosive grades and suitable spacing
Underground outlet-conduit installed below the surface of the ground to collect surface water and convey it to a suitable outlet
Waste transfer system – components and other structures installed to convey manure and milking center wastes from buildings and animal feeding operations to a storage structure, loading zone or treatment area
Wastewater treatment strips – area of vegetation used as part of an agricultural waste management system to remove pollutions
Water & sediment control basins – earthen embankment or a ridge and channel combination installed across a slope or minor watercourse to trap or detain runoff and sediment
Waterway system – natural or constructed waterway or outlet that is shaped, graded and covered with vegetation or suitable material to prevent erosion by runoff waters
Well commissioning- permanently disabling and sealing a well to prevent contaminants from reaching groundwater
Wetland restoration – construction of berms, or the destruction of tile lines or drainage ditch functions to create or restore conditions for wetland vegetations

Nutrient Management - There is also a limited amount of **SEG** funds for nutrient management plans.

The normal cost share rate is 70% with additional provisions for hardship cases. All practices are designed and constructed to NRCS standards. With the proposed revisions to ATCP 50, cost share rate will be reduced to 50% for access roads, roof-runoff systems, streambank or shoreline protection, stream crossing, and wetland development or restoration or practices installed on local governmental units. If you are interested in doing one of these projects, please contact our office.

ATTACHMENT E

NR151 Performance Standards and Prohibitions
Fact Sheets

Wisconsin's Runoff Rules

what farmers need to know

January 2013 DNR Pub. No. WT 756 REV 1/13

Farms, like all major industries, must follow environmental requirements to control runoff from fields, pastures and livestock facilities. Otherwise this pollution can harm our lakes, streams, wetlands and groundwater.

Wisconsin adopted administrative rules in 2002 (NR 151), with revisions effective in 2011 that set statewide performance standards and prohibitions for all Wisconsin farms. All farmers must comply with these standards and prohibitions. Cost-share funding may be available to assist with compliance. Some state and local programs may require compliance whether or not cost-share funds are available.

This fact sheet explains the basic information that farmers need to know about these rules and how to comply with them. It is recommended that farmers contact their county land conservation staff for further details on these rules and their impact on farm operations.

► Agricultural Standards and Prohibitions:

ALL FARMERS MUST:

- *Meet tolerable soil loss ("T") on cropped fields and pastures.*
- *Annually develop and follow a Nutrient Management Plan (NMP) designed to keep nutrients and sediment from entering lakes, streams, wetlands and groundwater. Farmers may hire a certified crop advisor or prepare their own NMP if they have received proper training.*
- *Use the phosphorous index (PI) standard to ensure that their NMP adequately controls phosphorous runoff over the accounting period.*
- *Avoid tilling within 5 feet of the edge of the bank of surface waters. This setback may be extended up to 20 feet to ensure bank integrity and prevent soil deposition.*

► Additional Standards:

FARMERS WITH LIVESTOCK MUST:

- *Prevent direct runoff from feedlots or stored manure from entering lakes, streams, wetlands and groundwater.*
- *Limit access or otherwise manage livestock along lakes, streams and wetlands to maintain vegetative cover and prevent erosion.*
- *Prevent significant discharges of process wastewater (milkhouse waste, feed leachate, etc.) into lakes, streams, wetlands, or groundwater.*

FARMERS WHO HAVE, OR PLAN TO BUILD, MANURE STORAGE STRUCTURES MUST:

- *Maintain structures to prevent overflow and maintain contents at or below the specified margin of safety.*
- *Repair or upgrade any failing or leaking structures to prevent negative impacts to public health, aquatic life and groundwater.*
- *Close idle structures according to accepted standards.*
- *Meet technical standards for newly constructed or significantly altered structures.*

FARMERS WITH LAND IN A WATER QUALITY MANAGEMENT AREA *(300 feet from streams, 1,000 feet from a lake, or in areas susceptible to groundwater contamination)* **MUST:**

- *Avoid stacking manure in unconfined piles.*
- *Divert clean water away from feedlots, manure storage areas, and barnyards located within this area.*

Photos: Jeffrey J. Strobel, Duane Popple and Lynda Schweikert

Wisconsin's Runoff Rules

what farmers need to know

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► Farmland Preservation Tax Credit:

A farmer must comply with applicable state standards to receive the Farmland Preservation Tax Credit, even if cost sharing is not available. Farmers may be considered in compliance by entering into a schedule of compliance.

This requirement applies to farmers whose land is located in a certified farmland preservation zoning district (i.e. exclusive agriculture), or for farmers who signed a farmland preservation agreement after standards were in effect for that county. Farmers should contact their county land conservation staff for more information regarding applicable standards and compliance documentation.

► Implementation and Financial Assistance:

Under DNR rules, a landowner is normally entitled to cost sharing if the landowner is required to implement best management practices on "existing cropland" or an "existing" livestock facility or operation in order to comply with a DNR performance standard. Cropland or livestock facilities brought into service after the effective date of the standard are considered "new" and must meet standards and prohibitions without cost-share funding. Farmers with existing cropland or livestock facilities may be eligible for state or federal cost sharing and are encouraged to contact their county land conservation staff or USDA Natural Resources Conservation Service (NRCS) office for information about current funding sources, rates and practices eligible for cost sharing.

Farmers also should work with their land conservation staff to determine how these performance standards and prohibitions may affect their participation in various federal, state and local programs, such as Farmland Preservation. You can find a directory of land conservation offices and related agencies at http://datcp.wi.gov/Environment under "Land and Water Conservation."

► Permits and Licensing:

Farmers may be required to meet NR 151 Standards in order to obtain local and state permits. For livestock siting and manure storage ordinance permits, for example, nutrient management plans and other requirements may be imposed on livestock operations without providing cost sharing. Contact your local officials for additional information.

Farmers with 1,000 or more animal units must operate under a Wisconsin Pollutant Discharge Elimination System (WPDES) permit and do not qualify for state cost sharing to meet permit requirements. Contact your DNR Service Center for more information about WPDES permits.

For more information about runoff management in Wisconsin and topics found in this brochure please visit:

runoffinfo.uwex.edu

USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

UW Extension
Cooperative Extension

Wisconsin Department of Natural Resources

Department of Agriculture, Trade & Consumer Protection · Wisconsin

Wisconsin Land and Water Conservation Association, Inc.
wlwca.org

Wisconsin Department of Natural Resources (WDNR), Wisconsin Department of Agriculture, Trade, and Consumer Protection (DATCP), in cooperation with: USDA Natural Resources Conservation Service (NRCS), University of Wisconsin-Extension (UWEX), County Land Conservation Departments (LCD).

Graphic design by Jeffrey J. Strobel
UW–Extension Environmental Resources Center

Non-Agricultural Revisions to Chapter NR 151, Runoff Management Rule

The Wisconsin Department of Natural Resources (WDNR) has revised Chapter NR 151, Wisconsin Administrative Code, an administrative rule that establishes runoff pollution performance standards for both agricultural and non-agricultural practices and manure management prohibitions for agricultural facilities and practices. These standards and prohibitions are intended to achieve water quality standards. Polluted runoff from both urban and agricultural land uses contribute to the nutrients that cause unsightly algae blooms, the loss of aquatic habitat, fish kills, and other water quality problems that affect Wisconsin's lakes and streams. The rule was originally promulgated in 2002. The revised rule was published in December 2010 and became effective on January 1, 2011.

Please note that under state budget bill 2011 Wisconsin Act 32, there were two provisions which became effective on July 1, 2011, that impact implementation of Chapter NR 151. Those provisions will be mentioned under the section related to the developed urban area performance standards.

This fact sheet includes a summary of major non-agricultural revisions to Chapter NR 151 and is not inclusive of all the revisions that were made to the rule. The complete version of Chapter NR 151 can be found at http://legis.wisconsin.gov/rsb/code/nr/nr151.pdf. This fact sheet includes information on the following:

Subchapter I – General Provisions
Revisions to Key Definitions
Revisions to Location of Best Management Practices on Navigable Waters

Subchapter III – Non-Agricultural Performance Standards

Revisions to the Construction Site Performance Standards
Revisions to the Post-Construction Performance Standards
Revisions to the Developed Urban Area Performance Standards

Subchapter IV – Transportation Facility Performance Standards
Revisions to Transportation Performance Standards

SUBCHAPTER I – GENERAL PROVISIONS

Revisions to Key Definitions

Several definitions were added because they are used in revisions to the performance standards. The terms added are "direct conduits to groundwater", "existing development", "filtering layer", "impaired water", "silviculture activity", and "total maximum daily load".

Several definitions were amended to add clarification: "average annual rainfall", "connected imperviousness", "impervious surface", and "in-fill". The most significant change is to the definition of MEP or "maximum extent practicable" in s. NR 151.002(25). This definition was modified to indicate that MEP is a different level of achieving a performance standard. Section NR 151.006 was created to identify when MEP applies. This definition will be used for all performance standards except those in s. NR 151.13, the developed urban area performance standard for municipalities.

Revisions to Location of Best Management Practices on Navigable Waters

In the 2002 version of the rule, best management practices (BMPs) associated with construction sites for new development may not be located in navigable waters to receive credit for meeting any performance standard in Chapter NR 151. This restriction has been retained in the revised rule. Also in the 2002 version of the rule, best management practices for existing development, re-development or in-fill development could receive credit for construction in either perennial and intermittent streams if all applicable permits were received. As of January 1, 2011, s. NR 151.003 only allows treatment credit for newly constructed BMPs in intermittent streams for which all applicable permits have been received.

SUBCHAPTER III – NON-AGRICULTURAL PERFORMANCE STANDARDS

Revisions to the Construction Site Performance Standards

1. Construction Site Performance Standards for Non-Permitted Sites

Specific erosion and sediment control requirements have been added for non-permitted sites. Non-permitted sites may include: construction sites that consist of land disturbing construction activity of less than one acre and construction projects that are exempted by federal statutes or regulations. Some construction sites are exempt from the performance standards. The exempt sites include one- and two family dwellings regulated by the Department of Safety and Professional Services (DSPS) (formerly the Wisconsin Department of Commerce), agricultural facilities and practices, and silviculture activities.

The revisions set minimum standards for smaller sites to protect water quality. Erosion and sediment control practices are now required at non-permitted sites to prevent or reduce all of the following:
(a) The deposition of soil from being tracked onto streets by vehicles.
(b) The discharge of sediment from disturbed areas into on-site storm water inlets.
(c) The discharge of sediment from disturbed areas into adjacent waters of the state.
(d) The discharge of sediment from drainage ways that flow off the site.
(e) The discharge of sediment by dewatering activities.
(f) The discharge of sediment eroding from soil stockpiles existing for more than 7 days.
(g) The transport by runoff into waters of the state of chemicals, cement and other building compounds and materials on the construction site during the construction period. However, projects that require the placement of these materials in waters of the state, such as constructing bridge footings or BMP installations are not prohibited by this paragraph.

A permit under Subchapter III of Chapter 216, Wis. Adm. Code, is not required for these construction sites unless the WDNR determines under s. NR 216.51(3) that a permit is needed. These revisions do not include a requirement for an erosion control plan or any kind of modeling to demonstrate compliance with a numeric performance standard. Compliance can be achieved by selecting and implementing practices in accordance with WDNR technical standards as appropriate. The WDNR technical standards can be found at http://dnr.wi.gov/runoff/stormwater/techstds.htm.

2. Construction Site Performance Standards for Permitted Sites

The revisions to the construction site performance standards for permitted sites are found in s. NR 151.11(6m). The construction site performance standards promulgated in 2002 were retained in s. NR 151.11(6) for sites where a Notice of Intent (NOI) was submitted prior to January 1, 2011. The revisions apply to sites that are permitted under subchapter III of Chapter 216, Wis. Adm. Code, and for which an NOI is submitted to the WDNR on or after January 1, 2011. Erosion and sediment control requirements for permitted sites have been modified to incorporate non-numeric effluent limit guidelines from the United States Environmental Protection Agency (USEPA). The USEPA's non-

numeric effluent limits became effective in February 2010. In addition, the erosion and sediment control requirements for permitted sites have been modified to be consistent with the erosion and sediment control standards of ch. COMM 60 for commercial building construction sites originally under the authority of the Wisconsin Department of Commerce (now DSPS). Revisions to the construction site standards for permitted sites can be broken down into four categories: *Erosion and Sediment Control Practices, Sediment Performance Standards, Preventive Measures,* and *Location and Implementation*.

Erosion and Sediment Control Practices
Erosion and sediment control practices are required at permitted sites to prevent or reduce the following:

- Items (a) through (g) listed in 1 above for non-permitted sites.
- The discharge of sediment from erosive flows at outlets and in downstream channels.
- The transport by runoff into waters of the state of untreated wash water from vehicle and wheel washing.

Sediment Performance Standards
The performance standard of 80% sediment reduction will remain in effect until January 1, 2013, after which the standard will change to a maximum discharge of 5 tons per acre per year of sediment. This modification results in a measurable number expressed as a load, making it consistent with the way total maximum daily loads (TMDLs) are calculated. The change to a load also provides equity with the sheet, rill and wind erosion performance measure for agriculture. Five tons per acre per year is roughly equivalent to the most prevalent tolerable soil loss rate in the state.

The WDNR is currently working on a modification to the revised universal soil loss equation 2 (RUSLE2) model that can be used to estimate the sediment load leaving a construction site under varying land and management conditions. The WDNR anticipates that the model will be available for public use prior to January 1, 2013. If it is not available, compliance will continue to be determined by the development of an adequate erosion and sediment control plan that utilizes appropriate BMPs that are consistent with the technical standards.

Preventive Measures
The erosion control plan for permitted sites must incorporate maintenance of existing vegetation, especially adjacent to surface waters whenever possible, minimization of soil compaction and preservation of topsoil, minimization of land disturbing construction activity on slopes of 20% or more and the development of spill prevention and response procedures.

Location and Implementation
BMPs must be located so that treatment occurs before runoff enters waters of the state. Also, the BMPs used to comply with the performance standards must be implemented as follows:

- Erosion and sediment control practices must be constructed or installed in accordance with the erosion control plan before land disturbing construction activities begin.
- Erosion and sediment control practices must be maintained until final stabilization.
- Final stabilization must commence when land disturbing construction activities cease and final grade has been reached on any portion of the site.
- Temporary stabilization activity must commence when land disturbing construction activities have temporarily ceased and will not resume for a period exceeding 14 calendar days.
- BMPs that are no longer necessary for erosion and sediment control must be removed by the responsible party.

Revisions to the Post-Construction Performance Standards

The revisions to the post-construction performance standards were added via s. NR 151.12(2)(bm) and ss. NR 151.121 to 151.128. The post-construction performance standards promulgated in 2002 were retained in s. NR 151.12(5) for sites where an NOI was submitted prior to January 1, 2011. The revisions to the post construction performance standards in ss. NR 151.121 to 151.128 only apply to sites required to obtain coverage under a construction site discharge permit as regulated under Chapter NR 216, Wis. Adm. Code, and that are subject to the construction performance standards of s. NR 151.11, and only apply to those sites where an NOI was received by the WDNR on or after January 1, 2011.

1. Applicability

The exception for a redevelopment post-construction site with no increase in exposed parking lots or roads was eliminated for sites where an NOI is filed on or after January 1, 2011.

2. Maintenance of Effort

For redevelopment sites where the redevelopment will be replacing older development that was subject to the post-construction performance standards of the 2002 version of Chapter NR 151, the storm water management plan must meet the TSS reduction, peak flow control, infiltration, and protective areas standards applicable to the older development or meet the redevelopment standards of the revised code, whichever is more stringent. The purpose of this is to prevent back-sliding to a lesser standard.

3. Total Suspended Solids (TSS) Performance Standard for Redevelopment

The requirement to reduce the TSS load by 40% compared to no controls for the entire redevelopment post-construction site has been revised to 40% reduction of the TSS generated on parking areas and roads on a redevelopment post-construction site. This focuses the treatment effort on the dirtiest source areas for TSS.

4. Peak Discharge Performance Standard

The peak discharge performance standard has been revised to include the 1-year, 24-hour design storm along with the current 2-year, 24-hour design storm as peak flow rates that must match the pre-development 1- and 2-year storms. This change is based on research showing that the previous standard was not protective enough of the bank-full condition.

Maximum pre-development runoff curve numbers have been added for woodland and grassland cover condition. The revised Table 2 is included below.

Table 2. Maximum Pre-Development Runoff Curve Numbers

Runoff Curve Number	Hydrologic Soil Group			
	A	B	C	D
Woodland	30	55	70	77
Grassland	39	61	71	78
Cropland	55	69	78	83

The peak discharge exemption for not increasing the existing surface water elevation at any point within the downstream receiving water by more than 0.01 of a foot for the 2-year, 24-hour storm event has been eliminated and replaced with an exemption for a post-construction site where the discharge

is directly into a lake over 5,000 acres or a stream or river segment draining more than 500 square miles. A map identifying lakes over 5,000 acres and stream and river segments draining more than 500 square miles is included in the WDNR's guidance document for Modeling Post-Construction Storm Water Management Treatment dated December 20, 2010. This document can be found at: http://dnr.wi.gov/runoff/stormwater/guidance/Modeling_PostConstruction.pdf.

5. Infiltration Performance Standard

The revised infiltration standards are summarized in the following table:

Level of Connected Imperviousness[1]	**Infiltration Performance Standard**	**Maximum % of the Post-Construction Site Required as Effective Infiltration area**
Low Imperviousness *Up to 40% Connected Imperviousness*	90% of the pre-development infiltration volume	1%
Moderate Imperviousness *More than 40% and up to 80% Connected Imperviousness*	75% of the pre-development infiltration volume	2%
High Imperviousness *More than 80% Connected Imperviousness*	60% of the pre-development infiltration volume	2%

[1]A histogram showing typical percent connected imperviousness for various standard land uses can be found in the WDNR's guidance document for Developed Urban Areas and the 20% and 40% TSS Reductions dated November 24, 2010. This document can be found at: http://dnr.wi.gov/runoff/stormwater/guidance/Guidance_TSS.pdf

The prohibitions, exemptions, and other limitations for infiltration previously outlined under ss. NR 151.12(5)(c)5. and 6. have been reorganized. The actual language of the section remains largely unchanged. The section has been reorganized as follows:

Source Areas

Prohibitions – Runoff from certain source areas may not be infiltrated and no credit will be given towards meeting the infiltration performance standard.

Exemptions – Infiltration of runoff from certain source areas may be credited towards meeting the standard, but infiltration is optional.

Location of Practices

Prohibitions – Infiltration practices may not be located in certain areas. Minimum distances between the bottom of the infiltration system and bedrock or groundwater are indentified based on source areas.

Exemptions – Infiltration rate exemptions are provided for low permeable soils and certain soil classifications.

6. Protective Area Performance Standard

The rule revisions increase the protective area from 50 feet to 75 feet for certain high quality wetlands such as sedge meadows, open and coniferous bogs, low prairies, calcareous fens, coniferous

swamps, lowland hardwood swamps and ephemeral ponds. Information on wetland types can be found at: http://dnr.wi.gov/wetlands/types.html

Revisions to the Developed Urban Area Performance Standards

Revisions to this section included an option for permitted municipalities that may have difficulty meeting the 40% TSS reduction requirement by March 31, 2013. A permittee could declare they were unable to meet the deadline and the rule revisions identified a process for them to follow. The process included the requirement for a storm water management plan, storm water management plan submittal requirements, the WDNR review process, and the allowance of up to 10 more years to comply with the standard provided the plan is followed. Under state budget bill 2011 Wisconsin Act 32, there were two provisions which directly impact implementation of the revisions to the developed urban area performance standard. First, specific to the requirement to reduce TSS by 40% by 2013, 2011 Wisconsin Act 32 prohibits the WDNR from enforcing the 40% TSS performance standard by a certain date. This provision of the budget bill does not impact any other performance standards in Chapter NR 151. The requirement to meet the 20% TSS reduction is still in force as are all performance standards addressing new construction and redevelopment. A second provision of 2011 Wisconsin Act 32 identifies that where a permitted municipality has achieved a reduction above the 20% TSS performance standard, all structural best management practices in place on July 1, 2011, must be maintained to the maximum extent practicable.

Implementation of the provisions of 2011 Wisconsin Act 32 will be reflected in the MS4 general permit and MS4 individual permits when those permits are issued or reissued.

SUBCHAPTER IV – TRANSPORTATION FACILITY PERFORMANCE STANDARDS

Revisions to Transportation Performance Standards

The modifications to Subchapter IV include many of the same changes to the performance standards in Subchapter III. However, since Subchapter IV is specifically for transportation, several provisions are tailored to those types of facilities.

1. Applicability

Transportation facilities include highways, railroads, public mass transit facilities, public-use airports, public trails, and harbor improvements. The modifications of new construction site and post-construction performance standards only apply to transportation facility construction sites for which the WDNR receives a Notice of Intent to apply for construction site storm water discharge permit coverage under Chapter NR 216, Wis. Adm. Code, on or after January 1, 2011; or to transportation facility construction sites for which bids have been advertised or construction contracts signed for which no bid was advertised on or after January 1, 2011.

2. Definitions

The definition of “minor reconstruction” as it applies to a highway no longer includes the replacement of a vegetated drainage system with a non-vegetated drainage system. If there is a conversion of the drainage system from vegetated to non-vegetated (e.g., swales to storm sewer), then the area of the conversion is not minor reconstruction and is subject to the applicable reconstruction performance standards.

3. Performance Standards for Small Sites and Routine Maintenance

The prescriptive construction site performance standards for transportation facility construction sites disturbing less that one acre of land and routine maintenance consisting of less than 5 acres are the

same as those listed for non-permitted construction sites (See *Construction Site Performance Standards for Non-Permitted Sites* on page 2 above).

4. Performance Standards for Sites Disturbing One or More Acre

The construction site performance standards for transportation facility construction sites disturbing one acre or more of land are the same as those listed for permitted construction sites (See *Construction Site Performance Standards for Permitted Sites* on page 2 above).

5. Post-Construction Performance Standards

There have been some modifications to the post-construction performance standards and exemptions for highways. The table below illustrates the applicability and exemptions of the post-construction performance standards for highways.

Post-Construction Performance Standards for Highways

	Minor Highway Reconstruction	**Highway Reconstruction[1]**	**New Highway Construction**
TSS Reduction	No	Yes (40% reduction)[2]	Yes (80% reduction)
Peak Discharge	No	No	Yes
Infiltration	No	No	No[3]
Protective Areas	Yes	Yes	Yes

[1] For highway reconstruction less than 1.5 miles that does not qualify as minor reconstruction because of the drainage system conversion, the 40% TSS performance standard only applies to the areas converted from a vegetated drainage system to a non-vegetated drainage system.

[2] For municipalities covered under a municipal separate storm sewer system (MS4) permit, this 40% TSS performance standard first applies 1/1/2017. For municipalities not covered by an MS4 permit, this 40% TSS performance standard applies as of 1/1/2011.

[3] This exemption applies to new stand-alone highways such as an interstate, state highway, county highway, or local road. New roads that are part of a larger common plan of development such as residential, commercial, or industrial development are subject to Subchapter III of Chapter NR 151.

Swale Treatment

The swale treatment performance standard references compliance with the existing technical standard for swales, "Vegetated Infiltration Swale" (Technical Standard No. 1005). This technical standard is available at: http://dnr.wi.gov/runoff/stormwater/techstds.htm#Post. Additional guidance on implementation of this performance standard is available in the WDNR's guidance document for Modeling Post-Construction Storm Water Management Treatment dated December 20, 2010. This document can be found at:
http://dnr.wi.gov/runoff/stormwater/guidance/Modeling_PostConstruction.pdf.