

CHAPTER 5 Agricultural, Natural and Cultural Resources Element

66.1001 (2)(e) Wisconsin Statutes:

***Agricultural, Natural and Cultural Resources Element.** A compilation of objectives, policies, goals, maps, and programs of the conservation, and promotion of the effective management, of natural resources such as groundwater, forests, productive agricultural area, environmentally sensitive areas, threatened and endangered species, stream corridors, surface water, floodplains, wetlands, wildlife habitat, metallic and nonmetallic mineral resources, parks, open spaces, historical and cultural resources, community design, recreational resources and other natural resources.*

Section 5.1 Introduction

The agricultural, natural and cultural resources of the Town of Lanark are likely the primary reason why people choose to live here. It is a beautiful place. Rolling hills, substantial natural woodlands and wetlands, varied and abundant wildlife and productive farms and farmland all come together to create a unique and attractive landscape.

The residents of the Town of Lanark recognize the value of their unique landscape and understand that it supports and sustains a way of life they are proud of. For those who choose to farm the land here, the community supports their efforts and works to minimize barriers that impede this economically viable industry. The residents also understand that the identification and protection of the historical and cultural resources of the community will help sustain a rich quality of life that is enjoyed by all who settle here.

Section 5.2 Agricultural Resources

A. Farming Systems, Demographics, and Land Tenure

The Town is located on the edge of two major farm regions in Wisconsin. First, and most prominent is the dairy region. In Wisconsin, dairying is most concentrated in a belt that begins near Hudson (St. Croix County), heads east to Wausau (Marathon County) and Green Bay (Brown County), then turns southwest through Fond du Lac (Fond du Lac County), Madison (Dane County) and ends near Dubuque, Iowa (borders Grant County). According to the Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP), there were five active grade-A dairy farms operating in the Town of Lanark in 2018. To the north in Amherst, there were ten farms, to the south in Belmont, there were five farms, and to the west in Buena Vista there were five. Combined, these Towns have lost 15 dairy farms since 2002.

The second farming region that Lanark borders is that of fresh vegetable production. The irrigated lands of the “golden sands” region of Wisconsin lay between Amherst and the Stevens Point area and extend south into Waushara and Adams Counties. The Town is on the southeast edge of this large irrigated plain and there are a number of producers who have scattered vegetable operations. While no exact acreage numbers are available, the presence of pivot irrigation is one key indicator of vegetable production. Aerial photography interpretation from the year 2015 showed 40 irrigation pivots in Lanark.

An estimated 28 persons were employed in an agricultural, forestry, fishing, hunting, and mining related field in the Town of Lanark between 2012 and 2016 (Table 1.9, Issues and Opportunities section). This represented 4% of employment for the Town. This is down from the 2007-2011 estimate of 53 persons (7%). Decreasing farm employment is not a unique trend by any means.

In general, farm numbers are down while acreage per farm is up. Farm consolidation is currently a common practice in this industry.

B. Productive Agricultural Soils

The County Conservationist has identified productive agricultural soils within the Town of Lanark using the Soil Survey of Portage County, as published by the United States Department of Agriculture (Map 5.1, Productive Agricultural Soils). The Town does not have any soils in the desirable Class 1 Capability Grouping, leaving only soils with moderate to very severe limitations that reduce the choice of plants, require special conservation practices, or both. Soils with the lowest degree of limitations for farming are listed below. Slopes greater than 6% were excluded from the “productive” designation due to severe hazard for water erosion. Productive soils in the Town of Lanark include:

- Bt – Billett sandy loam, 0-2% slope
- MfB – Mecan loamy sand, 2-6% slope
- MgB – Mecan sandy loam, 2-6% slope
- RsB – Rosholt loam, 2-6% slope
- Rt – Rosholt loam, loamy substratum, 0-2% slope
- WyB – Wyocena sandy loam, 2-6% slope

Note: The Billett, Mecan, and Wyocena series are susceptible to pesticide and nitrate leaching due to high sand and gravel content which relates to rapid water permeability (two to six inches per hour).

Productive soils if drained include:

- Oe – Oesterle sandy loam
- Ov – Oesterle loam, silty subsoil variant

Note: Drainage may cause flooding, stream bank erosion and water quality degradation due to down gradient receiving surface water.

Productive soils if irrigated include:

- FrA – Friendship loamy sand, 0-2% slope
- RfA – Richford loamy sand, 0-2% slope
- RfB – Richford loamy sand, 2-6% slope

Note: The Friendship and Richford series require irrigation to maintain productivity and are highly susceptible to pesticide and nitrate leaching.

Map 5.1 Productive Agricultural Soils

C. Agricultural Potential Based On Land Evaluation Rating and Site Assessment (LESA)

The Land Evaluation and Site Assessment (LESA) system is a point-based approach that is generally used for rating the relative value of agricultural land resources. In basic terms, a LESA model is created by defining and measuring two separate sets of factors. The first set, **Land Evaluation**, includes factors that measure the inherent soil-based qualities of land as they relate to agricultural suitability. An LE rating was developed by Portage County Planning and Zoning for use across all of Portage County utilizing USDA Soil Survey data. **Higher numbers mean greater value for agriculture.** Possible LE ratings range from 0 to 100. Many physical and chemical soil properties are considered in the LE rating, either directly or indirectly, including soil texture and rock fragments, slope, wetness and flooding, soil erodibility, climate, available water capacity, pH (alkalinity versus acidity), and permeability. Three soil property indexes were combined to produce the LE rating; prime farmland classification, land capability class – natural condition, and productivity index. All three of these indexes are published by the Natural Resources Conservation Service (NRCS).

An SA (Site Assessment) rating was also developed for the Town of Lanark. As with the LE rating, higher numbers mean a greater value for agriculture. The combined Land Evaluation factors are worth 100 points as are the combined Site Assessment factors. The LE and SA scores are added to yield a potential final score for each two acre block ranging between 0 and 200 points, with a score of 200 representing lands that are of the highest value for agriculture (excluding specialty crops such as cranberries). Communities will then determine an appropriate threshold for ranking lands recommended for protection (i.e. areas with a score higher than 150 and are greater than 40 contiguous acres). Weighting factors can be changed by each community to reflect its own priorities. See Appendix D for a complete explanation of this system.

The Town of Lanark has decided to use the LESA model as an advisory tool to help identify areas in the community that should remain in agricultural use.

D. Farm Economy and Infrastructure

Because of the lack of farm economy information available at the town level, a detailed discussion of the farm economy at the town level is not practical. Please see the complete discussion of the Portage County farm economy in the Agriculture, Natural and Cultural Resource element of the Portage County Comprehensive Plan, and in the Portage County Farmland Preservation Plan.

E. Legislative Influences on Agriculture

1. Wisconsin Right-to-Farm Law

Wisconsin Statute 823.08, commonly referred to as Wisconsin's "Right-to-Farm Law", was created in 1981 and substantially revised in 1995. The purpose of the statute is to provide a measure of protection for farmers from lawsuits, or the threat of lawsuits, in which the normal consequences of an agricultural activity such as odors, noise, dust, flies or slow-moving vehicles are claimed to be a nuisance. The statute includes a statement of public purpose, in which the Legislature states that local units of government are in the best position to prevent land use conflicts through zoning, and urges local units of government to use their authority accordingly.

2. Implements of Husbandry

With exceptions, no person may operate any vehicle or combination of vehicles that exceed statutory size or weight limits on a highway unless the person obtains a permit issued by the authority in charge of maintenance of the highway. 2013 Wisconsin Act 377 established a framework for regulating the operation, on highways, of vehicles used exclusively in the conduct of agricultural operations that exceed these size and weight limits.

In short, the framework that 2013 Wisconsin Act 377 established provides agricultural vehicles with weight limitations that are approximately 15% higher than the weight limitations that apply to other vehicles, provides limited exceptions for agricultural vehicles from size and weight limitations under specified circumstances, and allows operators of agricultural vehicles to obtain “no fee” permits for agricultural vehicles that exceed statutory size and weight limitations.

Follow-up legislation to correct errors and omissions in the original law later became 2015 Wisconsin Act 15, and 2015 Wisconsin Act 232. Act 15 made a number of changes to requirements related to various types of agricultural vehicles and the “no fee” permitting system. Act 232, very generally made changes to the width, lighting and marking requirements, as well as the “no fee” permitting system.

E. Other Local Influences on Agriculture

The Lanark area has the possibility of seeing increased population density in the future. With this comes increased demand for housing and services. One source of pressure for the development of rural residential properties is the proximity to U.S. Hwy 10, just north of Lanark. This access enables high speed connection to downtown Appleton in 45 minutes. Many people find this to be an acceptable travel time for work. The possible interest in Lanark may bring more homes onto the agricultural and natural landscapes, increasing the potential for conflict, increasing the assessed value of non-farm lands for residential development purposes, and most importantly, possibly increasing the sale price per acre of land beyond the point of being economically viable for purchase as farmland.

F. Agricultural Programs

A number of programs are available to agricultural landowners to help achieve desired outcomes ranging from enhancing wildlife habitat to minimizing soil erosion. The following is a partial list from the Natural Resources Conservation Service (NRCS) and the United States Department of Agriculture’s Farm Service Agency (FSA). For more information about these and other programs contact the local NRCS office or FSA at 715-346-1313, or the County Land Conservation Department at 715-346-1334.

- Soil and Water Resource Management Program (SWRM – DATCP 50)

The Soil and Water Resource Management Program is administered under state code DATCP 50. The program is designed to conserve Wisconsin's soil and water resources, reduce soil erosion, prevent non-point source pollution and enhance water quality. Cost sharing is provided to qualified applicants who enroll in long term agreements to help manage practices, such as intensive grazing. For more information, contact the County Land Conservation Department.

- Conservation Reserve Program (CRP)

The Conservation Reserve Program (CRP), administered through FSA, is a voluntary program for agricultural landowners. Through CRP, one can receive annual rental payments and cost-share assistance for removing environmentally sensitive land from agricultural production and planting species that will improve water quality, prevent soil erosion, and reduce loss of wildlife habitat. Participants enroll in CRP for 10 to 15 years.

- Conservation Reserve Enhancement Program (CREP)

The Conservation Reserve Enhancement Program (CREP), also administered through FSA, is a voluntary program that targets high-priority conservation issues identified by local, state, or tribal governments or non-governmental organizations. Through CREP, farmers, ranchers, and agricultural land owners can receive annual rental payments and cost-share assistance for removing environmentally sensitive land from production and introducing conservation practices. Participants enroll in CREP for 10 to 15 years.

- Environmental Quality Incentives Programs (EQIP)

The Environmental Quality Incentives Program (EQIP), administered through Natural Resources Conservation Service (NRCS), is a voluntary program for agricultural producers and owners of non-industrial private forestland who want to address natural resource concerns on their land and deliver environmental benefits such as improved water and air quality, conserved ground and surface water, reduced soil erosion and sedimentation or improved or created wildlife habitat. It provides both technical and financial assistance to implement conservation practices, or activities like conservation planning, that address natural resource concerns. Contracts can last up to 10 years.

- Agricultural Conservation Easement Program (ACEP)

The Agricultural Act of 2014, enacted on February 7, 2014, established the Agricultural Conservation Easement Program (ACEP). It repealed the Farm and Ranch Lands Protection Program (FRPP), Grassland Reserve Program (GRP), and Wetlands Reserve Program (WRP), but does not affect the validity or terms of any FRPP, GRP, or WRP contract, agreement or easement entered into prior to the date of enactment, or any associated payments required to be made in connection with an existing contract, agreement or easement.

ACEP provides financial and technical assistance to help conserve agricultural lands and wetlands and their related benefits. An Agricultural Land Easements component combines the purposes of the former FRPP and GRP, for which NRCS helps American Indian tribes, state and local governments and non-governmental organizations protect working agricultural lands and limit non-agricultural uses of the land. Under the Wetlands Reserve Easements component, NRCS helps to restore, protect and enhance enrolled wetlands.

- Wildlife Habitat Incentives Program (WHIP)

The Agricultural Act of 2014 repealed the Wildlife Habitat Incentive Program (WHIP). NRCS will continue to support existing active WHIP contracts entered into prior to passage of the Agricultural Act of 2014, using the rules and policy in effect at the time of contract obligations. Portions of the WHIP Statute were rolled into the Environmental Quality Incentives Program (EQIP).

WHIP was a voluntary program for people who wanted to develop or improve wildlife habitat on private lands. It provided both technical assistance and cost sharing to help establish and improve fish and wildlife habitat.

Landowners agreed to prepare and implement a wildlife habitat development plan. NRCS provided technical and financial assistance to implement the wildlife habitat restoration practices.

Section 5.3 Agricultural Issues

The following issues relating to agriculture were identified through the planning process:

- Changes in the economics of agriculture have put great pressures on the need to produce income from the sale of land for non-agricultural purposes.
- The development potential of the Amherst area is encroaching on the agricultural lands. How can development pressure be directed away from productive agricultural areas?
- How can we encourage more farmers to stay in farming?
- Niche markets should be explored and developed. How can the Town promote specialty agricultural operations?
- Buffers between intensive agricultural activities and sensitive environmental areas should be established.
- How can certain types of agricultural operations, such as concentrated livestock operations, be regulated or directed?

Section 5.4 Agricultural Goals, Objectives and Policies

Goal 1: Protect productive agricultural operations from development pressures.

Objective 1.1: Identify and map highly productive farmlands based on a Land Evaluation Site Assessment (LESA) process and other pertinent information and protect these lands from premature development.

Policy 1: Develop numeric thresholds within the LESA system as a means of identifying and protecting productive agricultural areas from premature development.

Policy 2: Use Exclusive Agricultural Zoning as a means of preserving farmlands.

Objective 1.2: Support the development of agricultural zoning districts that protect the integrity of quality farmland, yet consider the economic realities of farming in our current economy.

Policy 1: Support a request for rezoning A-1 Exclusive Agricultural zoned lands to a district similar to those found adjacent to the property if the proposed land use is compatible with surrounding uses.

Policy 2: Within or adjacent to the A-1, Exclusive Agricultural Zoning District or the A-20 Primary Agricultural Zoning District, residential dwellings proposed adjacent to agricultural uses permitted in the Agricultural Zoning Districts of the Portage County Zoning Ordinance shall be established a minimum of 100 feet from the property line adjacent to the agricultural use, including road right-of-way, as defined at the time of plat. In no situation shall this requirement render an existing parcel unbuildable for residential purposes.

Policy 3: Recommend the use of the Open Space Design Option and Density based development in areas designated as Intermediate Agriculture for non farm residences.

Goal 2: Promote public awareness of the operations and activities of the agricultural community.

Objective 2.1: Work with organizations and agencies to educate the public regarding expectations of living near or adjacent to agricultural uses

Policy 1: Support the use of the following “Agricultural Use Notice” when property is subdivided within an Agricultural Zoning District:

“Lands zoned for Agriculture (A1, A20, A2, or A3) may be used for commercial agricultural production. Owners, residents, and other users of this property or neighboring property may be subjected to inconvenience, discomfort, and the possibility of injury to property and health arising from normal and accepted agricultural practices and operations, including but not limited to noise, odors, dust, the operation of machinery of any kind, including aircraft, irrigation, the storage and disposal of manure, the application of fertilizers, soil amendments, herbicides, and pesticides. Owners, occupants, and users of this property should be prepared to accept such inconveniences, discomfort, and possibly injury from normal agricultural operations, and are hereby put on official notice that the state Right-to-Farm Law (Wis. Stat. 823.08) may bar them from obtaining a legal judgment against such normal agricultural operations.”

Goal 3: Environmentally sensitive agricultural practices are used that protect air, soil, water, and wildlife resources.

Objective 3.1: Encourage land use practices which protect the quality of surface and groundwater resources, including minimizing the loss of soil or agricultural chemicals to ground and surface water, as well as the proper location and maintenance of on-site sewage systems associated with residential development.

Policy 1: Encourage farmers to work with agencies and organizations to develop and implement farm plans, procedures, and Best Management Practices that help protect surface and groundwater, riparian lands, and minimize field and feedlot runoff into surface waters.

Policy 2: Coordinate with Portage County Planning and Zoning Department to consider local regulation of concentrated animal feed operations (CAFOs).

Policy 3: Direct concentrated livestock operations away from residential and environmentally sensitive areas.

Goal 4: The agricultural community is economically viable.

Objective 4.1: Support farmers who identify niche markets suitable for their operations. Acknowledge the volatile nature of the agricultural economy and the need to be flexible and timely in adjustments to regulations that affect profitability.

Section 5.5 Natural Resources

Natural resources in the Town serve as the foundation for residents physical and economic well being – from groundwater quality to land suitability for agricultural, residential, or commercial development. This section will describe the existing natural resources inventory and state the

issues, goals, objectives, and policies that were identified and adopted by the Town of Lanark Plan Commission and Town Board.

A. Geomorphology

The land surface throughout much of Portage County has been shaped largely by glacial activity. During the glacial age, the continental ice sheet advanced across eastern Portage County, including what is now the Town of Lanark, moving in a southerly and westerly direction. Minor advances and retreats of the ice front formed a series of north-south moraines, as ice transported sediments were dumped near the forward edge of the ice sheets. The moraines are comprised of a wide variety of unsorted materials, known as till, picked up by the advancing glaciers. The till consists of clay, sand, gravel and boulders, which are intermingled. The moraines found in the Town of Lanark are referred to as “recessional” moraines, since they were formed as the ice sheet melted or receded. These recessional moraines are relatively small and discontinuous, having been broken into widely separated sections by numerous drainage channels. This differs from the larger “terminal” moraine located farther west, as in the Town of Buena Vista.

In addition to the moraine landforms, much of the landscape in the Town of Lanark is derived from well sorted sand and gravel, deposited by glacial melt-water streams. These areas are often referred to as outwash plains. The flatter areas of outwash are the result of sediments having been deposited on solid ground, while the hilly areas of outwash are the result of sediments having been deposited on stagnant glacial ice or due to postglacial erosion.

The topography of the Town is generally rolling. The elevation gradually increases from approximately 980 feet above sea level in the eastern part of the Town to approximately 1080 feet above sea level in the western part (Map 5.2) while depth to bedrock is generally deep, ranging from 100 to 300 feet.

B. Soils

Soils in the Town of Lanark (Map 5.3) can be grouped into three soil associations, as follows:

- Wyocena-Rosholt Association: Well drained, gently sloping to very steep soils that formed in loamy deposits and sandy glacial till or outwash sand and gravel. These soils are found in the west central part of the Town, south and east of Spring Lake. The lesser sloping areas tend to be used for crops while the steeper areas are used for pasture or woodland. The steeper soils in this association have very severe limitations for septic absorption fields.
- Kranski-Coloma-Mecan Association: Excessively drained and well-drained, gently sloping to very steep soils that formed in sandy glacial till or in deep sandy deposits. Most of these soils are used for pasture or woodland and are subject to soil blowing and water erosion when cropped or exposed.
- Richford-Rosholt-Billett Association: Well drained, nearly level to gently sloping soils that formed in sandy and loamy deposits and outwash sand and gravel. These soils can be found in the upper northwest and lower southeast portions of the Town. Corn, small grain, and alfalfa are the principal crops, while some specialty crops are grown in irrigated areas. These soils are subject to wind and water erosion.

Soil testing by a certified soil tester is strongly recommended for more detailed, site specific information.

Map 5.2 Topography

Map 5.3 General Soils

C. Surface Water, Watersheds, Wetlands, and Flood Plains

The major surface water bodies that are present in the Town of Lanark are Spring Lake, Boelter Lake, the Tomorrow River, and Spring Creek (Map 5.4). The Tomorrow River is concentrated in the northeast corner of the Town, flowing from the north to the south-southeast and flows into Waupaca County. Spring Creek enters the Town from the west and meanders across the Town before it meets up with the Tomorrow River. Other surface water features include Allen Creek, which is located in the southeast corner of the Town and flows into Waupaca County, and Bingo Lake, Jim Lake, Huntley's Lake, Pierces Lake, and Peters Lake, located mainly in the southwest corner of the Town. Boelter and Spring lakes were included in a comprehensive study of 29 Portage County lakes between 2003 and 2005. See Appendix E for Lake Studies information.

The majority of Lanark is located in the Tomorrow-Waupaca River watershed and areas surrounding the creek are subject to occasional flooding from major storm events and meltwater from the spring thaw. A watershed can be defined as interconnected areas of land draining from surrounding ridge tops to a common point such as a lake, wetland, or stream junction with a neighboring land area. Land use practices within a watershed can affect the water quality and habitat of a water body. The Portage County Shoreland Zoning Ordinance is designed to help reduce the impact of development on adjacent lakes and rivers. In the Town of Lanark, shoreland regulation applies to land within 1,000 feet of the ordinary high water mark of navigable lakes, ponds, or flowages, and land within 300 feet of the ordinary high water mark of navigable rivers and streams, or to the landward side of the floodplain, whichever distance is greater.

Wetlands are an important part of a watershed, as they act as a filter system for pollutants, nutrients, and sediments, along with serving as buffers for shorelands and providing essential wildlife habitat, flood control and groundwater recharge. Wetlands within the Town of Lanark include three general types: forested, scrub or shrub, and emergent/wet meadow.

- Forested wetlands are the predominant type. These wetlands include bogs and forested floodplain complexes that are characterized by trees 20 feet or more in height such as, tamarack, white cedar, black spruce, elm, black ash, green ash, and silver maple. These wetlands are located primarily along the edges of the Tomorrow River and along Allen and Spring Creeks.
- Scrub/shrub wetlands are the second most abundant type. These wetlands, which include bogs and alder thickets, are characterized by wood shrubs and small trees such as tag alder, bog birch, willow and dogwood. These are found primarily in the southwestern part of the Town between Boelter lake and Peters Lake.
- Sedge/wet meadow, the third most numerous type of wetland within Lanark, have saturated soils more often than they have standing water. Vegetation includes sedges, grasses and reeds as dominant plants, but may also include blue flag iris, milkweed, sneezeweed, mint and several species of goldenrod and aster. These types of wetlands are found in the headwaters of Allen Creek, and along several lakes.

A floodplain is defined as that which has been or may be covered by floodwater during the regional flood. The flood plain includes the floodway and flood fringe areas. A 100-year flood is defined as a flood event having a one percent chance of reaching the 100-year flood elevation in any given year. Contrary to popular belief, it is not a flood occurring once every 100 years. A

100-Year Floodplain then, is the area adjoining a river, stream, or watercourse covered by water in the event of a 100-year flood.

Floodplains provide many benefits including: natural flood and erosion control, water quality maintenance, groundwater recharge, and fish and wildlife habitat. Some of these areas are also desirable for residential development due to aesthetic reasons, and agricultural development due to the presence of nutrient rich soils. If development in these areas increases, the benefits listed above will decrease. The only floodplains in the Town designated by Federal Emergency Management Agency (FEMA) maps are found adjacent to the Tomorrow River (Map 5.5). These areas are regulated by Portage County Floodplain and/or Shoreland Zoning Ordinance.

D. Groundwater

The Town of Lanark is located in a geologic province known as the drift province. The drift province is considerably different from the western half of the County in that the basement granitic bedrock is far from the surface, and the unconsolidated aquifers above it are not limited. The depth to bedrock is generally greater than 100 feet, and the depth to groundwater ranges from a few feet below the surface to 70 feet throughout the Town. Seasonally, depths to groundwater can vary. The Town is situated east of the County's groundwater divide and, as such, is part of a larger watershed that drains into Lake Michigan and eventually the Atlantic Ocean. Groundwater elevation can help determine the approximate depth to groundwater in a given area by subtracting the groundwater elevation from land surface elevation. It can also be used to determine the direction in which groundwater flows, which is generally from higher to lower elevations (Map 5.6). Knowing the direction of groundwater flow can be a helpful piece of information when determining proper siting of well and on-site waste systems.

Potential pumping yield rates for groundwater are between 500 and 1000 gallons per minute throughout the Town. These rates are indicative of a large potential supply and are favorable for high capacity well systems. A high capacity well is defined as one or more wells, drill holes or mine shafts on a property that have a combined approved pump capacity of 70 or more gallons per minute. Any construction, reconstruction, or operation of a high capacity well system is subject to the approval of the WDNR, in accordance with NR 812.09(4)(a) and (b) of the Wisconsin Administrative Code. Currently, there are 23 active high capacity wells, used for various purposes within the Town (Source: WDNR Water Withdrawal and High Capacity Well Viewer). Large removals could affect groundwater levels, wetlands and surface water.

All Town residential water comes from groundwater, therefore, protection of this resource is important. Generally, a thick unsaturated zone is present before reaching groundwater; however, given the sandy soil type, pollutants can readily move to the groundwater with little removal en route. Potential sources of groundwater pollution may include septic systems, underground storage tanks, pipelines, mining operations, manure, fertilizers, pesticides, improperly abandoned wells, and landfills. Sandy soils are particularly vulnerable to contamination due to their coarse-textured, highly permeable nature, which allows pollutants to leach rapidly downward into the groundwater. Agricultural irrigation further increases the leaching process. Although some of the soils are ranked moderate to good in pollution attenuation, this area of the County should be considered vulnerable overall given the sandy soil type. Extra care should be given when siting land use activities so that potential impacts to the groundwater resource are minimized.

Map 5.4 Surface Water, Watersheds, and Wetlands

Map 5.5 Floodplains

Map 5.6 Groundwater Flow

Map 5.7 Atrazine Prohibition Areas and Nitrates

Data collection for groundwater monitoring remains an on-going process. The Town should work with the County and other research organizations to maintain an understanding of the most current data that is available. On July 18, 2017 the Portage County Board of Supervisors adopted the Portage County Groundwater Management Plan, which outlines goals and recommended actions for groundwater protection, monitoring, and management in the County. Contact the Portage County Planning and Zoning Department to obtain a copy of the Plan.

1. Atrazine Prohibition Areas

Atrazine is a herbicide (weed killer) that has been used on corn and other crops since the 1960's. Widespread application on farm fields, as well as spills and improper disposal, has caused atrazine contamination in groundwater. Drinking water that contains low levels of atrazine will not cause immediate sickness or health problems (acute toxicity). However, consuming more than the state and federal enforcement standard for atrazine, which is 3 parts per billion (ppb), for many years may cause cardiovascular, reproductive, or other health problems.

The Wisconsin Department of Agriculture, Trade and Consumer Protection has taken action to reduce atrazine use and even prohibit it in some areas. Their authority to restrict the use of a pesticide that is contaminating groundwater at levels above health-based standards is found in the Wisconsin Groundwater Law, [Chapter 160 of the Wisconsin Statutes](#), and by department rule in [ATCP 31, Groundwater Protection Program](#).

The rules for restricting the use of atrazine and other pesticides in Wisconsin are part of [ATCP 30 - Pesticide Product Restrictions](#) and the county maps showing the location of the prohibition areas can also be found in the rule in [ATCP 30 - Appendix A](#). Atrazine has been detected above the health standard in one well within the Town of Lanark and one well within the neighboring Town of Belmont, and because of this, prohibition areas have been defined within the northwest and the southwest corners of the community (Map. 5.7).

2. Nitrate-nitrogen

Nitrate is a chemical commonly found in agricultural and lawn fertilizer. It is also formed when waste materials such as manure, bio-solids, or septic effluent decompose. Nitrate is the highly soluble and mobile form of nitrogen. Landscapes where no nitrogen is artificially added are nitrogen limited, meaning plants take up all available nitrogen. As a result, expected natural levels of nitrate-nitrogen in Wisconsin are less than 1 parts per million (ppm). State and Federal regulations advise that nitrate-nitrogen levels in drinking water not exceed 10 ppm for health reasons. Groundwater testing data compiled over the past 25 years (1993-2018) by the Wisconsin Well Water Viewer found that 7% of samples tested in the Town of Lanark exceeded nitrate levels above 10 ppm (Map 5.7). Only 1% of samples in the Town exceeded nitrate-nitrogen levels of 20 ppm.

In the summer of 2017, Portage County collaborated with the UW-Stevens Point Center for Watershed Science to sample private wells for nitrate-nitrogen. In the interest of ensuring representation from across the county, the county was divided into grid cells each measuring 2 miles by 2 miles. One well from each grid cell was randomly selected for sampling, and analyzed at the state-certified Water and Environmental Analysis Lab. In total, nine samples were collected and analyzed from the Town of Lanark. The nitrate-nitrogen concentration of the sampled wells ranged from <0.1 ppm to 12 ppm, with an average of 4 ppm.

E. Wildlife Habitat and Forested Areas

When people think about wildlife, birds, fish, and mammals most likely come to mind. It is important, however, to consider all organisms that make up an ecosystem in order for that system to continue providing the maximum benefit to humans and the environment. Town residents recognize the fact that human beings play a role in protecting or restoring, as well as, degrading or destroying wildlife and its habitat. They also recognize that it will be very difficult to preserve all ecosystems in the Town from human encroachment or interaction, therefore, it is the desire of residents to protect wildlife habitat where practicable.

The biggest threats to wildlife are loss of habitat quality and quantity. These threats can be attributed primarily to fragmentation, invasive species, and pollution. Fragmentation refers to the loss of large, contiguous sections of land through subdivision into smaller parts. These subdivisions can lead to an alteration and possible degradation of the native plant and animal communities. Invasive species, both plant and animal, tend to out compete or prey on native species also altering the native ecosystem. Pollution can lead to habitat degradation and cause birth defects and increased mortality rates in animal species.

Habitat areas are important for providing food and cover for nesting, brooding, and sheltering. Farmland is one type of habitat that provides food, as well as, travel corridors between wetlands and woodlands. Woodlands or forested lands comprise 50% of the land area in Lanark (Map 5.8), while wetlands make up 5%. Loss of these habitat types can threaten the viability of certain species.

One option open to all private landowners owning twenty or more acres of woodlands is the Managed Forest Law Program (MFL). MFL is intended to foster timber production on private forests while promoting other benefits that forested lands provide. Participants in this program have the option to choose a 25 or 50 year contract period and an acreage share tax instead of the regular property tax. For more information regarding specific requirements and how to enroll in this program, contact the WI Department of Natural Resources (WDNR).

1. Threatened and Endangered Species

Through Wisconsin's Natural Heritage Inventory (NHI), WDNR tracks the location and protection status of species that are known or suspected to be rare in the State. The NHI includes species legally designated as "endangered" or "threatened" as well as species in the advisory "special concern" category. An endangered species is one whose continued existence is in jeopardy. A threatened species is one that is likely, within the foreseeable future, to become endangered. A special concern species is one about which some problem of abundance or distribution is suspected but not yet proven. The main purpose of the special concern category is to focus attention on certain species before they become endangered or threatened. The NHI also tracks natural communities that are native to Wisconsin.

According to the NHI database and listed in Table 5.1 below, one species has been identified in the Town of Lanark as being endangered. Federal protection status has been designated by the U.S. Fish and Wildlife Service's Endangered Species Program, indicating the Karner Blue Butterfly within the Town. These species should be taken into consideration when development and protection measures are considered. A more detailed description of each species can be obtained by contacting WDNR.

Table 5.1: Threatened and Endangered Species

Group	Common Name	Scientific Name	State Status	Federal Status
Butterfly	Karner Blue	<i>Lycaeidds melissa samuelis</i>	SC/FL	LE
Community	Floodplain Forest	<i>Floodplain forest</i>	NA	
Community	Inland Beach	<i>Inland beach</i>	NA	
Community	Northern Dry-Mesic Forest	<i>Northern dry-mesic forest</i>	NA	
Community	Northern Wet Forest	<i>Northern wet forest</i>	NA	
Community	Springs and Spring Runs, Hard	<i>Springs and spring runs, hard</i>	NA	
Frog	Blanchard's Cricket Frog	<i>Acris blanchardi</i>	END	
Other	Karner Blue Federal High Potential Range	<i>Karner Blue Federal High Potential Range</i>	NA	HPR
Plant	Many-Headed Sedge	<i>Carex sychnocephala</i>	SC	

Source: Wisconsin Department of Natural Resources - Natural Heritage Inventory, August 2017

Note: Wisconsin's protection categories designated by the WDNR are: END = Endangered; SC = Special Concern; SC/P = Special Concern – Fully Protected; SC/FL= Special Concern – Federally protected as endangered or threatened, but not so designated by WDNR; NA = Not Applicable. Federal protection status designated by the U.S. Fish and Wildlife Service's Endangered Species Program are: LE = Listed Endangered; HPR = High Potential Range.

F. Air Quality

The following information comes from the WDNR and the Environmental Protection Agency:

A few common air pollutants are found all over the United States. These pollutants can injure health, harm the environment and cause property damage. The Environmental Protection Agency calls these pollutants **criteria air pollutants** because the agency has regulated them by first developing health-based **criteria** (science-based guidelines) as the basis for setting permissible levels. These pollutants include: ozone, nitrogen dioxide, sulfur dioxide, carbon monoxide, particulate matter, and lead.

One set of limits (**primary standard**) is designed to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly; another set of limits (**secondary standard**) is intended to protect public welfare, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings. A geographic area that meets or does better than the primary standard is called an **attainment area**; areas that don't meet the primary standard are called **nonattainment areas**.

All of Portage County, including the Town of Lanark, is listed as an attainment area by the WDNR.

1. Open Burning

Open burning is defined as burning any combustible material outdoors without any air pollution controls in place. Burning in an unconfined area, a container, or a pile are all considered to be open burning. The WDNR's air quality rules generally ban all open burning except for the burning of clean, unpainted, untreated wood; clean, unrecyclable paper; outdoor fires for cooking or recreation; and yard materials such as leaves, brush and grass clippings. However, WDNR discourages the burning of leaves and grass clippings because of the adverse environmental impact of pollutants in smoke. Under state law, the burning of

solid waste materials such as treated wood, plastic, rubber or asphalt products, oily substances, household garbage, wet rubbish and most all other trash is prohibited.

Burning permits are required by WDNR to conduct safe and legal outdoor burning. These permits are intended for burning on the ground and in barrels, and are issued at no-cost to landowners for the calendar year. The citizen is responsible for being aware of the current fire restrictions in effect on any given day (i.e. if burning is allowed, the hours of burning, any size limitations, or if burning has been suspended for the day due to critical forest fire danger). Any questions about burning permits should be directed to WDNR by calling 1-888-WIS-BURN.

Air quality complaints as a result of open burning shall also be directed to WDNR. However, the legal procedures for enforcing the state's open burn regulations are very cumbersome and the WDNR is limited in its ability to respond. Therefore, complaints should be reserved for instances where the burning of solid waste materials is suspected. Complaints shall be made by calling the WDNR violation hotline number at 1-800-847-9367 or by filing a solid waste & hazardous waste complaint form (available at: <http://dnr.wi.gov/topic/waste/SHWCF/>).

G. Non-Metallic Mining

The glacial and geologic history of Portage County has made conditions suitable for certain types of non-metallic mining. Along the moraines in the eastern third of the County, glacial deposits have resulted in some lands that are desirable for sand and gravel aggregate extraction. The soils are rated good, fair, or poor as potential sources of sand or gravel. Much of the Town is considered to have fair to good potential for sand, with the highest potential for sand production in the southeastern quarter (Map 5.9). The soils indicate a poor source of gravel throughout much of the Town (Map 5.10).

Currently, there are no active gravel extraction sites. There was one in the past, used by the Wisconsin Department of Transportation, for the construction of the new Hwy 10 in 2003-2004. The Town of Lanark has a non-metallic mining ordinance regulating these areas.

Map 5.8 Forested Areas

Map 5.9 Metallic Mining Sand Source Potential

Map 5.10 Metallic Mining Gravel Source Potential

Section 5.6 Natural Resources Issues

Natural resources are important to the residents of Lanark. The following natural resource issues were identified through the planning process:

- How can ground and surface water be protected from failing septic systems?
- How can water resources be protected from the negative impacts of road construction, residential development, and certain agricultural and mining practices?
- How can fishery resources be protected in the Town?
- How can groundwater and other natural resources be protected from junk vehicles and other nuisances?
- Excessive groundwater draws can lower surface water levels. How can surface water levels be maintained while accommodating human activity?
- How can the impacts of invasive species be addressed/ minimized?
- How can forest owners be made aware of options for land management?
- To what extent can the Town manage the deer population?
- Recreation plans need to be reflected in the County Outdoor Recreation Plan in order to be considered for state funding.
- What is the WDNR's intent for their three properties in Lanark?
- Unique geologic features should be identified.

Section 5.7 Natural Resources Goals, Objectives & Policies:

Goal 1: Identify, manage, preserve and protect natural resources throughout the Town.

Objective 1.1: Environmentally sensitive agricultural practices are used to protect air, soil, water and wildlife resources.

Policy 1: Encourage farmers to work with private, government and educational organizations to develop farm plans and procedures that help protect riparian lands and minimize field and feedlot runoff into surface waters.

Policy 2: Recommend increased setbacks or use of buffers along surface waters for agricultural activities and development.

Objective 1.2: Preserve natural resources, including floodplains, wetlands, shorelands, surfacewater, and groundwater.

Policy 1: Preserve designated Natural Areas through the application of the County's Conservancy Zoning District. Such resources include shore lands, shore land wetlands, and publicly owned lands used for recreation and wildlife management.

Policy 2: Monitor non-metallic mining operations through requirements in the Town's ordinance.

Policy 3: Support shoreland protection laws and enforce current setbacks from waterways and environmental features. The Town recommends against the use of averaging for shoreland setbacks.

Objective 1.3: Offer prime opportunities for recreation, open space and wildlife habitat.

Policy 1: Encourage protection of large blocks of naturally wooded lands from interior development.

Goal 2: Collaboration with various governmental agencies results in the preservation and restoration of natural resources.

Objective 2.1: Encourage cooperation with Portage County, UW-Extension and the WDNR to provide educational materials and internet links relating to natural resource management.

Policy 1: Work with the WDNR and UW Extension to educate residents, landowners and loggers about control of oak wilt and non-native species.

Policy 2: Continue to maintain Town representation on the Groundwater Citizens Advisory Committee (GCAC).

Objective 2.2: Public and private organizations work together to define and develop appropriate public access to natural resources.

Policy 1: Development should be kept out of the floodplains.

Policy 2: Encourage quality deer management and access to hunting land.

Policy 3: Work with surrounding communities to apply similar development standards and standards for agricultural practices adjacent to surface waters.

Policy 4: Work with other governmental units to help prevent spread of invasive species.

Policy 5: Work with WDNR and other organizations to help maintain or enhance fish habitat.

Policy 6: Encourage the County Parks Department to expand Stedman Park and consider the purchase of other large tracts of land.

Objective 2.3: Work with the County to better enforce its Zoning Ordinance relating to inoperable or 'junk' vehicles, dilapidated dwellings in residential zoning districts, and other items that negatively impact natural resources.

Objective 2.4: Consider the development of a Town park.

Section 5.8 Cultural Resources

Cultural and historic resources often help link the past with the present and can give a community a sense of place or identity. These resources can include historic buildings and structures along with ancient and archeological sites.

Burial sites are one example of a resource that can add to a community's sense of history as well as provide a great deal of genealogical information. Formally catalogued burial sites are protected from disturbance in Wisconsin and are given tax treatment equal to that of operating cemeteries.

Information regarding cultural and historic resources in the Town of Lanark is constrained to limited financial and human resources. This section will provide goals and policies that promote the effective management of historic and cultural resources.

A. Cultural and Historic Resources Inventory

A wide range of historic properties have been documented that help create Wisconsin's distinct cultural landscape. Descriptions of existing locations are identified on the Wisconsin Architecture and History Inventory (AHI), as compiled by the Wisconsin Historical Society. Many of the properties included in this inventory are privately owned and not necessarily open to the public. At this time, there are eight listings in Lanark, which include houses, barns, a church, and a school house. Among the more conspicuous sites are:

Pipe School – a one to six room clapboard school house constructed in 1889 located on Pipe Road.

First Presbyterian Church (currently Badger Community Church) – a gothic revival style church with aluminum/vinyl siding constructed in 1898 located at the junction of Badger Drive and State Hwy 54 east.

Another source of information comes from the National and State Register of Historic Places. There are currently 18 historic places listed throughout Portage County, with two located in the Town of Lanark. This includes: Severance-Pipe Farmstead and Pipe School, both located on Pipe Road, 1/8 mile east of CTH T.

Cemeteries

There are three cemeteries in the Town, as identified in the Utilities and Community Facilities chapter of this Comprehensive Plan.

The Wisconsin Historical Society has identified a Native American burial site in the Town of Lanark. The site belongs to the Wisconsin DOT and is located between the four lanes of highway and in the right of way of USH 10 near County Rd T. The burial site has been named “Blinded by the Light”.

Rustic Roads

According to the WI Department of Transportation, “The Rustic Roads System in Wisconsin was created by the 1973 State Legislature in an effort to help citizens and local units of government preserve what remains of Wisconsin's scenic, lightly traveled country roads for the leisurely enjoyment of bikers, hikers and motorists.” Rustic roads are marked by brown and yellow signs with an ‘R’ followed by a 1 to 3 digit number.

There are only two rustic roads designated in Portage County. The first is Otto Road (R17) in the northeast section of Town, which runs from USH 10 west to Morgan Road, then south on Morgan Road to County Rd T. This road crosses a scenic section of the Tomorrow River. The second is a portion of Town Line Rd (R57), which is located at the Portage/Waupaca County border on the eastern boundary of the Town. This stretch of road is located near the Ice Age National Scenic Trail (Map 3.1, Transportation element).

Yellowstone Trail

The Yellowstone Trail was the first transcontinental automobile highway in the United States through the northern tier of states from Washington through Massachusetts. The Trail began in South Dakota in 1912. It quickly expanded to run from the Twin Cities (Minnesota) to the Yellowstone National Park in Montana. While the intent of the founders was to create a highway from coast to coast the marking of the whole route took considerable time. In 1914 it was

formally extended to the Idaho border in the west and to Chicago in 1915. By 1917 the entire route was firmly established.



Several different routes were used by the Yellowstone Trail between Amherst and Stevens Point. One, from 1915 to November, 1919, followed what is now Co. B and U.S. 51/Church St. Another followed old WI 18. A portion of the Trail passes through the Town of Lanark near the current USH 10 alignment (Information and map courtesy <http://yellowstonetrail.org/>).

Other Resources

The Portage County Historical Society is one source where cultural and historic information may be obtained. Other cultural and historic resources identified through the planning process include:

- Dam & Grist Mill at Spring Creek
- Riverside Bible Camp
- Old Town Hall at 6177 CTH A
- Clay pits used for brick – to construct school house on CTH D (Clinton Road)
- Amish School house (Damrau Rd. – built in early 1960’s)
- Joyce and Jerome’s Creamery (CTH A & Lanark Ln.)
- Native American burial sites in median of Hwy 10

B. Cultural Resource Programs

At the state level, the Wisconsin Historical Records Advisory Board (WHRAB) works in association with the Wisconsin Historical Society. The Board's activity falls primarily into three areas: it provides guidance and assistance to archives and records management programs in Wisconsin, promotes the value of historical records as keys to our cultural heritage and works through partnerships with statewide organizations whose purpose and goals support that end, and to bring federal grant funds to Wisconsin for improving access and preservation of historical records.

In 2004, the Land Preservation Committee of Portage County established a fund to help purchase lands identified by local units of government as having cultural or natural significance to the community. Although these sites may be identified, the landowner must want to participate in the program to move the process forward. The following sites have been identified as possible preservation areas:

- Site of the old Town Hall and lands along the creek
- Lands on the south side of Spring Creek near Spring Lake
- Areas to the south and east of Stedman Park
- Riverside Bible camp land along the Tomorrow River
- Public access to Boelter Lake
- Lands around Peters Lake
- Lands from Edminster Rd. south to Hartman Creek State Park
- Riparian areas along the Tomorrow River
- Former clay pit on Clinton Rd.
- Stedman site (site of first gristmill and first election)

Section 5.9 Cultural Resource Issues

The following issues or concerns were identified by the Town of Lanark Plan Commission:

How can historic and cultural resources in the Town be identified and protected?

Section 5.10 Cultural Resource Goals, Objectives and Policies

Goal 1: The general public is more aware of historic and cultural resources in the Town.

Objective 1.1: Cultural and Historic sites are identified

Policy 1: Work toward the placement of markers at cultural and historic sites.

Policy 2: Keep an inventory of cultural and historic resources in the Town.

Policy 3: Develop a method for identification and storage of historic Town records.