

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 New Hope are likely the single most important reason why most people choose to live here. Rolling hills, substantial natural woodlands and wetlands, varied and abundant wildlife and productive farms and farmland all come together to create a landscape unique in Portage County.

The residents of the Town of New Hope 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 important industry. The identification and protection of the historical and cultural resources of the community will also help sustain a rich quality of life that is enjoyed by all who settle here.

Section 5.2 Agricultural Inventory

A. Productive Agricultural Soils

Productive agricultural soils in the Town of New Hope have been identified, with the assistance of the County Conservationist, utilizing information from the Soil Survey of Portage County, 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 New Hope include:

Productive

- RsB - Rosholt loam, 2-6% slopes
- MfB - Mekan sandy loam, 2-6% slopes
- Rt - Rosholt loam, loamy substratum, 0-2% slopes
- Bt - Billett sandy loam, 0-2% slopes
- WyB - Wyocena sandy loam, 2-6% slopes

The Mekan, Billett, and Wyocena series are susceptible to pesticide and nitrate leaching (due to high sand and gravel content which relates to rapid water permeability, 2-6 inches per hour).

Productive if Irrigated

- RfB - Richford loamy sand, 2-6% slopes

The Richford series requires irrigation to maintain productivity and is highly susceptible to pesticide and nitrate leaching.

B. Farming Systems, Demographics, and Land Tenure

The agricultural landscape of the Town of New Hope can best be described as a mix of rolling fields and forests that border the two major farm regions in Wisconsin. The 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 and Green Bay (Brown County), then turns southwest through Fond du Lac, Madison and ends near Dubuque (Iowa County). According to the Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP) permit information, there were 5 active grade-A dairy farms operating in the Town of New Hope in 2017. To the south in, in the Town of Amherst, there were 10 farms, to the west in the Town of Stockton there were 12, in the Town of Sharon there were 12, and to the north in the Town of Alban there were 5.

The second farming region that New Hope borders is that of fresh vegetable production. The irrigated sands of the “golden sands” region of central Wisconsin lay between Amherst and Stevens Point, and south into Waushara County. New Hope is on the northeast edge of this large irrigated plain, where the presence of pivot irrigation rigs is one key indicator of vegetable production. Based on aerial photography, there were roughly 12 irrigation pivots in 2017, and approximately 650 acres of irrigated cropland.

An estimated 39 persons were employed in an agriculture-related field in the Town of New Hope between 2011-2015. This represented 10% of employment for the Town (Figure 1.3, Issues and Opportunities chapter). This was down substantially from the 1980 figure of 77 persons (35.2%). Decreasing farm employment is not a unique trend by any means. Farm numbers are down, while acreage per farm is up. Farm consolidation is a common practice in this industry.

C. 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 Agricultural, Natural and Cultural Resource element of the Portage County Comprehensive Plan, and in the Portage County Farmland Preservation Plan.

D. 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.

Map 5.1 Productive Agricultural Soils

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 New Hope area has not experienced the same pressure for the development of rural residential land compared to the surrounding Towns of Stockton and Amherst. However, with access to USH 10 through the Town of Amherst, there is the potential for increasing interest in the Town of New Hope, especially in the southern part. Other factors that may have an impact on the continuance of agricultural practices in the Town include an overall aging population (retiring baby boomers may desire to ‘live in the country’) and an increasing age of agricultural operators.

F. Agricultural Programs

The United States Department of Agriculture Farm Service Agency (FSA) and Natural Resources Conservation Service (NRCS) oversee a number of voluntary conservation-related programs. The following is a partial list of the programs that work to address a large number of farming and ranching related conservation issues ranging from minimizing soil erosion to enhancing wildlife habitat. For more information about these and other programs contact the local FSA or NRCS office at 715-346-1313.

- Conservation Reserve Program (CRP)

The Conservation Reserve Program, administered by 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, 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.

- Conservation Stewardship Program (CSP)

The Conservation Stewardship Program, under the administrative authority of NRCS, encourages producers to address resource concerns by undertaking additional conservation activities, and by improving, maintaining, and managing existing conservation activities on agricultural land and nonindustrial private forest land. CSP offers participants two possible types of payments: an annual payment for installing and adopting additional activities, and improving, maintaining, and managing existing activities or a supplemental payment for the adoption of resource-conserving crop rotations.

- Environmental Quality Incentives Programs (EQIP)

The Environmental Quality Incentives Program, administered by 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.

- Wetlands Reserve Program (WRP)

The Agricultural Act of 2014 (enacted on February 7, 2014) established the Agricultural Conservation Easement Program (ACEP). It repeals the Wetlands Reserve Program (WRP), among other programs, but does not affect the validity or terms of any WRP contract, agreement or easement entered into prior to the date of enactment on February 7, 2014 or any associated payments required to be made in connection with an existing WRP contract, agreement or easement.

The Wetlands Reserve Program was a voluntary program to restore and protect wetlands on private property. It offered landowners an opportunity to receive financial incentives to restore wetlands that had been drained for agriculture.

Under the former enrollment options, landowners could sell a conservation easement or enter into a cost-share restoration agreement with USDA to restore and protect wetlands. The landowner voluntarily limited future use of the land, yet retained private ownership. The landowner and NRCS developed a plan for the restoration and maintenance of the wetland.

The program offered landowners three options: permanent easements, 30-year easements, and restoration cost-share agreements of a minimum 10- year duration.

- Wildlife Habitat Incentives Program (WHIP)

The Agricultural Act of 2014 repealed the Wildlife Habitat Incentive Program. 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).

The Wildlife Habitat Incentives Program 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 agricultural issues were identified through the planning process:

- There is preference to discourage large animal herd operations. To what extent can the Town direct large agricultural operations toward areas more suitable for that type of use?
- To what extent can the Town encourage agricultural and residential practices that are not harmful to water quality?
- Due to changing economies of scale, it will be difficult to predict the economic viability of small agricultural operations within the Town, which have historically been the cornerstone of agricultural uses.
- To what extent should productive agricultural lands in the Town be protected?

Section 5.4 Agricultural Goals, Objectives and Policies

Goal 1: Preserve productive agricultural land in the Town of New Hope.

Objective 1.1: Identify productive agricultural lands in the Town.

Policy 1.1.a: Use the Exclusive Agricultural and Primary Agricultural Zoning Districts to help ensure the protection of productive agricultural lands.

Policy 1.1.b: Direct residential development away from areas that are most conducive to agricultural practices.

Goal 2: The agricultural community is economically viable for the mutual benefit of the farmers and residents of New Hope.

Objective 2.1: Maintain the agricultural land base.

Objective 2.2: Minimize conflict between farm and non-farm uses.

Policy 2.2.a: Work with local government and non-government organizations to provide educational materials to the public regarding the operations and activities of the agriculture community.

Policy 2.2.b: Recommend that new development be sited in a manner that limits conflict, through the use of spatial and/or vegetative buffers.

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

Objective 3.1: Promote a scale of agriculture that is appropriate with existing topography and preservation of natural resources.

Policy 3.1.a: Recommend against the siting of new or expanding ‘large’ livestock operations in the Town.

Policy 3.1.b: Consider the creation of a local ordinance relating to the siting of new or expanding livestock operations based on state standards that are currently being developed.

Policy 3.1.c: Encourage farm operators to work with appropriate organizations to develop and use Best Management Practices (BMPs). (Information regarding BMPs can be obtained from the County Land Conservation Department)

Section 5.5 Natural Resources

Natural resources in the Town serve as the foundation for the physical and economic well being of its residents. According to the results of the 2001 Comprehensive Planning and Zoning Survey, Town residents favored managing the natural resources that support and sustain them.

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 New Hope Plan Commission and Town Board.

A. Geomorphology

The present Portage County landscape primarily reflects the last or “Wisconsin” stage of the Pleistocene or glacial epoch (Holt, 1965). The glacial ice transported large amounts of rock debris known as drift. The drift is called till if deposited directly by the ice, and outwash if placed by glacial meltwater.

The Town of New Hope is located in a geologic province known as the drift province. The drift province covers the eastern 1/3 of the County and is comprised of a series of end moraines that represent the accumulation of ice-transported debris that piled up at the forward edge of the ice sheet. The hills and ridges are composed of sandy till.

As the ice melted and the end moraines were formed, large amounts of ice-transported materials were removed by the meltwaters. This glaciofluvial (outwash) material was deposited between and in a large area to the west of the moraines. The deep sand and gravel deposits of the sand plain province were formed in this way. The sand and gravel is well sorted and contains only small amounts of silt and clay. Deeper gravel deposits are found adjacent to the end moraines. The sands are generally finer further from the moraine. The thickness of outwash deposits ranges from less than 30 feet northeast of Stevens Point to over 200 feet near the outer moraine and averages about 100 feet. Depth to bedrock in the southwest part of New Hope varies from 0 – 100 feet along the Tomorrow River and lower Poncho Creek corridors and is greater than 100 feet throughout the rest of the Town.

The topography of the Town of New Hope is generally rolling and includes many lowland wet areas, lakes, and rivers. The elevation throughout the Town ranges from 1,100 to 1,170 feet above sea level (Map 5.2). The higher elevations in the Town are located along the Elderon Morainic System. One branch of this moraine runs along the western edge of the Town, and the other branch starts in the northcentral part of the Town and runs slightly southeast, ending in the southeastern corner of New Hope.

Map 5.2 Topography

Map 5.3 **General Soil Associations**

B. Soils

New Hope's soils (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 can be found throughout most of the Town. Many of the less sloping areas are used for crops while the steeper areas are used for pasture or woodland. Erosion is a potential hazard on steeper slopes.
- 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 are found in the south-central and southwest parts of Town and are used primarily for crops. 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.
- Markey-Seeleyville-Cathro Association: Very poorly drained, nearly level soils that formed in organic deposits over sandy and loamy deposits. These soils are found along the Tomorrow River corridor, north of Rolling Hills Rd., and in the very northeast portion of the Town and are used primarily for pasture or wildlife habitat. This association has very severe limitations for septic drainfields and basements.

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

C. Surface Water, Watersheds, Wetlands, and Floodplains

The major surface water bodies that are present in the Town of New Hope are: Hintz Lake, Minister Lake, Onland Lake, Reton Lake, Rinehart Lake, Severson (Budberg) Lake, Skunk Lake, and Sunset Lake, all located in the southern half of the Town. The Tomorrow River, which originates in the Town of Sharon, enters New Hope on its western border and flows south-southeast into the Village of Nelsonville.

Other surface water features in the Town include: Poncho Creek, which originates in the northwest part of the Town and flows south into the Tomorrow River; Flume Creek, in the northern portion of New Hope, which flows into the Little Wolf River in Waupaca County.

The Tomorrow River, Flume Creek, Poncho Creek and their tributaries, and Nace Creek below the wetland complex on Johnson Road are listed as Class 1 trout streams by the Wisconsin Department of Natural Resources (WI DNR).

New Hope is located at the intersection of three surface watersheds: the Tomorrow-Waupaca River Watershed, the Lower Wolf River Watershed, and the Upper Wolf River Watershed. A watershed can be defined as an interconnected area of land draining from surrounding ridge tops to a common point such as a lake or stream confluence with a neighboring watershed (WI DNR).

Wetlands are an important part of the 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 include three general types: forested, scrub or shrub, and emergent/wet meadow (see Map 5.4 below).

- Forested wetlands are the predominant type – including 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, and silver maple. These wetlands are located primarily along the edges of the Flume Creek, Poncho Creek, and Tomorrow River, as well as the northeast corner of the Town.

- Emergent/wet meadow, the second most numerous type of wetland within New Hope, consists of areas that may have saturated soils more often than having 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 interspersed between Sunset and Severson (Budsberg) Lakes, along the Nace Creek, and in the northeast corner of the Town.
- Scrub/shrub wetlands are the third most abundant type. These wetlands, which include bogs and alder thickets, are characterized by wood shrubs and small trees such as tag aster, bog birch, willow and dogwood. These are also found along the Nace Creek and are scattered throughout New Hope.

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. According to Federal Emergency Management Agency (FEMA) data, areas adjacent to the Flume, Poncho, and Nace Creeks, and Tomorrow River have been designated as a 100-year floodplain (Map 5.5).

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.

D. Groundwater

All residential water supply and most of the Town's agricultural water supply come from groundwater wells. Therefore, protection of the groundwater resource, with regard to both quantity and quality, is vital. Depth to water table, soil texture, and permeability all play a role in diminishing the negative effects pollutants may have on water quality. Depth to groundwater varies greatly in New Hope, ranging from 10 feet in the northeast corner of the Town to over 150 feet in the southeast portion. Although the depth to groundwater in some areas of the township is of a nature that is more conducive to intercepting pollutants, the sub-surface soil texture is sandy and coarse, allowing liquids a faster rate of travel through the soil column such that pollutants in these strata migrate with relative ease.

Groundwater generally flows in a southeasterly direction through the Town (Map 5.6). The aquifer potential is high, with potential pumping yield rates for groundwater at 500-1000 gallons per minute throughout most of the Town. This rate is consistent with rates found throughout the eastern 1/3 of the County and much higher than rates found in the northwest quarter of the County.

The relatively high yield rate for groundwater is favorable for operation of a high capacity well system, which 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 WI DNR, in accordance with NR 812.09(4)(a) and (b) of the Wisconsin Administrative Code. Currently, there are 25 active high capacity wells, used for various purposes within the Town (Source: WI DNR Water Withdrawal and High Capacity Well Viewer).

Map 5.4 Surface Water, Watersheds, and Wetlands

Map 5.5 Floodplains

Map 5.6 Groundwater Flow

The Town will review any development proposals which would require large scale groundwater extraction with the express guideline of preserving and protecting this important resource.

1. Atrazine Prohibition Areas

Atrazine is an 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 (DATCP) 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.

Atrazine has been detected in several wells within the Town of New Hope and because of this, a prohibition area has been defined within the community (Map 5.7). The only areas within the Town not in the prohibition area are the northern and western borders and the southeast corner of the Town.

E. Wildlife Habitat and Forested Areas

It is the desire of residents to protect wildlife habitat. 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.

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 also provides food, as well as travel corridors between wetlands and woodlands.

Woodlands or forested lands account for 46% of the land area in New Hope (Map 5.8) while wetlands make up 9%. According to 2001 County survey data, 88% of respondents felt that an effort should be made to identify and protect woodlands, and 90% felt the same about wetlands and floodplains. Loss of these habitat types can threaten the viability of certain species.

Woodlands that exist now are primarily due to an inability to sustain successful agricultural practices.

One option open to all private landowners owning twenty or more acres of woodlands is the Managed Forest Law Program. The MFL program is intended to foster timber production in 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 pay 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 DNR.

1. Threatened and Endangered Species

Through Wisconsin’s Natural Heritage Inventory (NHI), the WI DNR 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 Natural Heritage Inventory also tracks examples of all types of Wisconsin's natural communities that are deemed significant because of their undisturbed condition, size, what occurs around them or for other reasons.

According to the NHI database and listed in Table 5.1 below, a single species, the Wood Turtle, has been identified in the Town of New Hope as being threatened. Federal protection status has been designated by the U.S. Fish and Wildlife Service's Endangered Species Program, indicating the Karner Blue Federal High Potential Range within the Town. Eleven natural communities native to Wisconsin have also been identified in 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 the WI DNR.

Table 5.1: Threatened and Endangered Species

Group	Scientific Name	Common Name	State Status	Federal Status
Turtle	<i>Glyptemys insculpta</i>	Wood Turtle	THR	
Other	<i>Karner Blue Federal High Potential Range</i>	Karner Blue Federal High Potential Range	NA	HPR
Community	<i>Emergent marsh</i>	Emergent Marsh	NA	
Community	<i>Lake - deep, hard, seepage</i>	Lake - Deep, Hard, Seepage	NA	
Community	<i>Lake - shallow, hard, seepage</i>	Lake - Shallow, Hard Seepage	NA	
Community	<i>Northern dry forest</i>	Northern Dry Forest	NA	
Community	<i>Northern dry-mesic forest</i>	Northern Dry-mesic Forest	NA	
Community	<i>Northern mesic forest</i>	Northern Mesic Forest	NA	
Community	<i>Northern sedge meadow</i>	Northern Sedge Meadow	NA	
Community	<i>Northern wet-mesic forest</i>	Northern Wet-mesic Forest	NA	
Community	<i>Stream - fast, hard, cold</i>	Stream - Fast, Hard, Cold	NA	
Community	<i>Stream - slow, hard, cold</i>	Stream - Slow, Hard, Cold	NA	

Source: Natural Heritage Inventory, May 2016 - Wisconsin Department of Natural Resources

Note: The current State and Federal protection categories and their level of protection are: END = Endangered; THR = Threatened; SC = Special Concern; SC/P = Special Concern – Fully Protected; SC/N = Special Concern – No laws regulating use, possession, or harvesting; SC/FL = Special Concern – Federally protected as endangered or threatened, but not so designated by DNR; SC/M = Fully protected by federal and state laws under the Migratory Bird Act; NA = Not Applicable; LE = Listed Endangered (Federal status); HPR = High Potential Range (Federal status).

Map 5.7 Atrazine Prohibition Areas

Map 5.8 Forested Areas

F. Air Quality

The following information comes from the WI DNR 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 **non-attainment areas**.

New Hope, and all of Portage County, is listed as an attainment area by the WI DNR.

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 WI DNR'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, the WI DNR 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 the WI DNR to conduct safe and legal outdoor burning. Intended for burning on the ground and in barrels, WI DNR burning permits 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 the WI DNR by calling 1-888-WIS-BURN.

Air quality complaints as a result of open burning shall also be directed to the DNR. However, the legal procedures for enforcing the state's open burn regulations are very cumbersome and the WI DNR 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 DNR's 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/>).

Section 5.6 Natural Resources Issues

The following issues regarding natural resources have been identified during the planning process:

- There is a concern regarding the loss of small, ephemeral wetlands.

- To what extent is groundwater quality being monitored?
- There are no regulations on lawn fertilizer application. What are the impacts of residential uses on groundwater quality?
- How can the integrity of forest land within the Town be maintained?
- There is a concern regarding extraction of groundwater from the local watershed by bottling operations.
- There is a desire to encourage and strengthen protection of lake frontage with regard to natural vegetation and sensitive areas - stronger enforcement of shoreland protection and setback requirement.
- There is a desire to create a database of flora and fauna in the Town. To what extent should the Town get involved in such a project?
- How can the public be better educated as to the consequences to surface waters from removing vegetation down to the shoreline?
- Woodlands are being heavily taxed unless in forest crop program.
- Wildlife. There are too many deer. How can the deer herd be better managed?

Section 5.7 Natural Resources Goals, Objectives and Policies

Goal 1: Identify, manage, preserve and protect natural resources throughout New Hope.

Objective 1.1: Encourage agricultural practices that are environmentally sensitive and protect air, soil, water and wildlife resources.

Policy 1.1.a: Promote the use of Best Management Practices to help protect the Town's natural resources.

Objective 1.2: Protect groundwater quality and quantity, including natural springs, within the Town.

Policy 1.2.a: Recommend against the consumptive withdrawal of groundwater resources, especially through the siting of multiple high capacity wells within close proximity to one another in the Town.

Objective 1.3: Maintain the integrity of large areas of contiguous forested land to the greatest extent possible.

Policy 1.3.a: Include large contiguous forested lands in the Natural Areas – Limited Development category.

Policy 1.3.b: Encourage woodland owners to work with the Family Forest Alliance to help with the proper management of forested lands.

Objective 1.4: Properly manage the native flora and fauna of the Town to promote biodiversity.

Policy 1.4.a: Work with government and non-government organizations to create or access databases that inventory flora and fauna within the Town. These databases can be used to help make land use planning decisions.

Policy 1.4.b: Encourage residents to participate in venison donation programs and allow more hunting on private land to help reduce deer herd.

Policy 1.4.c: Use Conservancy Zoning to protect environmentally sensitive areas.

Objective 1.5: Protect the integrity of the Ice Age Trail corridor.

Policy 1.5.a: Include the Ice Age Trail corridor as part of the Natural Areas – Limited Development category on the Town’s Land Use Plan and limit development in this area.

Objective 1.6: Protect the integrity of surface waters within the Town.

Policy 1.6.a: Use findings from the UW-SP lakes study to help educate residents regarding practices to protect surface waters.

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 is constrained due 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. The Wisconsin Historical Society’s Wisconsin Architecture and History Inventory (AHI) identifies existing locations of historic places. Keep in mind that these properties included in this inventory are privately owned and not necessarily open to the public, so please respect the rights of private property owners. At this time, there is one listing in New Hope:

- 9282 State Highway 161– a two story cube style, balloon frame house.

Another source of information comes from the National and State Register of Historic Places. There are currently eighteen sites listed throughout Portage County, however, none of them are located in the Town.

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

According to local residents, between the 1860’s and 1900’s there were five school houses, three grocery stores and three creameries within the Town. Some of these buildings are still standing but have been converted to other uses.

B. Early Human Occupation in New Hope Township

(By Raymond P. Reser, Research Archaeologist, Wisconsin Archaeological Survey, November, 2004)

Human prehistory in New Hope Township most likely began with small highly mobile groups of Paleo Indians. These first exploiters of Wisconsin's resources moved into the state from the south west, following the retreating ice fronts and resultant spruce-fir dominated ecosystems. The most secure dates place this occupation at around 11,500 years before present (BP).

The landscape was topographically similar to what we see today, but vegetation and animal communities were quite different. Recently glaciated terrain would have been the norm. Thick blankets of gravel and silt called ground moraines were draped over low rolling hills. Swamps and bogs were extensive, with conifers typical of northern Canada covering the better drained areas of the township. Retreating glaciers left a landscape rich in minerals derived from pulverized bedrock. This natural fertilizer encouraged lush forage for herds of grazing animals such as Woodland Caribou, Bison Antiquus (an extinct form of modern buffalo), and Mammoths. Browsers such as Mastodons also populated the state in more heavily forested regions.

This moveable feast of large animal was expertly and efficiently hunted by the state's early residents. Though neither Portage County nor New Hope have produced butchered remains of these large herbivores, the stone weapons and processing tools associated with these kills have been found. Due to high acidity of most Wisconsin soils, bone preservation over thousands of years is extremely poor. Butchered Mastodons and the remains of bison and caribou have been preserved where conditions were conducive in other counties in Wisconsin.

These early residents appear to have had an in-depth understanding of the landscape, as well as its plant, animal and geologic resources. Because their technology consisted of mostly wood, bone, hide, grass string and stone, little evidence of it survived the ravages of time. Stone was the exception, so tools, weapons, and the debris of their manufacture allow archeologists to construct a limited glimpse into that past. These early groups crafted very distinctive, finely worked blades, easily distinguished from later stone working traditions.

Studies in similar, glaciated areas of the north east have shown that Paleo Indians also routinely butchered large animals, and sank their quartered remains in cold-glacial pot-hole lakes to preserve the meat and keep it from predators. A standard hunting technique was to drive large animals such as bison and mastodon into bogs or marshes and then finish them off. These remains exist as lower legs and ribs where the animal was skinned by splitting the hide along the spine and laying it out on top of the mud on both sides of the animal. Butchering then proceeded down to the mud line, and the rest was left in place. They were also adept at interpreting local geology, locating and utilizing high quality cherts and quartzites from Wisconsin's glacial till, and discarding worn out tools of exotic cherts and chalcedonies collected in Illinois, Iowa, and North Dakota. These scattered surface collections of stone tools have been noted over most of New Hope Township and nearly all surrounding areas of Portage, Wood, Marathon, Shawano, and Waupaca Counties.

The next tradition of human settlement is known as the Archaic. The tradition began approximately 8,500 years ago when huge environmental changes were taking place in central Wisconsin. Glacial ice was rapidly retreating in the Canadian north and new plant communities were gradually moving in from the south. Deciduous forests were replacing spruce and pine, with elm, hornbeam, basswood, sugar maple and an increasing prevalence of oak. Large grazing animals were becoming extinct or moving north, and more solitary caribou and white-tailed deer provided the main dinner menu along with smaller game. Rabbits, raccoon, beaver, fish and bird bones begin to show up in fire pits excavated in New Hope and surrounding areas, indicating a

broader food base. Because smaller animals provide less protein and fewer essential raw materials such as hides for tents and clothing, more time and energy was probably being expended in progressively smaller, local areas. Plant evidence at this stage consists mostly of acorns, which required complex preparation to make them suitable for consumption.

Distinctive side-notched knives and spear points along with native copper tools and ornaments are typical of this time period. These artifacts occur along the Tomorrow River, to the north and east of Sunset Lake, as well as along the modern beach area, and west of Onland (Onneland) Lake. Other areas of the township undoubtedly hold more Archaic materials beneath current woodlots and along marshes which would have held small lakes and ponds 3,000-7,000 years ago. Though a transition in spear points occurs during this time with a proliferation of new, more distinctive styles, it should be noted that these are still true spear points used with a spear thrower and not arrow points. The bow and arrow would not arrive on the scene in Portage County for at least another 1,500 years.

As the Archaic period progressed the climate of central Wisconsin became drier with open savanna type woodlands interspersed with prairie. Browsing animals like elk and deer were more abundant, and a relatively permanent switch to deer as the main staple animal food source likely began. Ground stone tools such as axes and wood-working tools begin to show up on local sites during this stage indicating a more complex stone tool kit and a different focus from simple hunting and foraging across the landscape. As this period drew to a close about 1,000 to 1,500 years ago oak forests with closed canopies became more prevalent indicating a wetter, essentially modern climate.

The next and best-preserved tradition in central Wisconsin and hence New Hope is the Woodland Tradition. This tradition is best defined by three traits: the emergence of pottery, burial mounds, and extensive farming practices. All three are well represented in New Hope Township. Pottery has been found, sometimes in dense concentrations surrounding Onland Lake, Sunset Lake, Rinehart Lake, and again, along the Tomorrow River. Onland Lake especially has produced ceramics that indicate a continuous presence in this area for 400-500 years. Burial mounds have been, or are currently located along the entire south shore of Onland Lake, the north, south, and east shores of Sunset Lake, to the south-east of Rinehart Lake, and most likely existed at one time in close proximity to every water body in the township. Prehistoric farming evidence is a bit more rare as most traces were destroyed with the introduction of the plow and residential development. Still, a large area west of Onland Lake was reported as prehistoric corn hills by early settlers and areas surrounding Sunset Lake were likely utilized in the same manner.

A fairly large, permanent Woodland village existed on the west end of Onland Lake complete with underground storage pits for plant seeds and corn, in-ground, massive 2-3 foot diameter pots for food preparation, two circular ceremonial dance rings and at least 14 conical burial mounds. At the time this village was inhabited, the area around the lake was probably continuous prairie. Early photos show one small tree on the south shore. A turn of the century archeological survey describes a large field west of the lake completely littered with pottery shards, stone chips and tools, and charcoal mixed with mussel shell. Faunal analyses of animal remains from fire pits within this village indicate a late spring through early winter occupation, based on deer antler development and tooth eruption. Diagnostic side-notched and triangular projectile points (true arrow points) are typical of this tradition, and they are often noted within 50 to 100 yards of lakes in the township. Small seasonal campsites would have been common on sandy ridges overlooking marshes or streams where game was plentiful. Isolated burials on knolls or in sand hills have also been sporadically reported for New Hope since European

farming began. Most of these contain large knives of non-local cherts, indicating a certain status for the individual.

In summary, New Hope and central Wisconsin as a whole offered a rich, well-watered environment for prehistoric Native Americans. Their presence is well documented in this area even though relatively little archeological work has been done in the township. In the recent past, much of this evidence has been lost due to residential development and large-scale farming practices. As little was formally known or published about these sites this was probably inevitable. Those sites most desirable for modern habitations held the same attraction thousands of years ago. Burial Mounds are currently protected under the 1986 Burial Sites Law of Wisconsin. Any landowners with such sites on their property should feel privileged to be allowed to care take these remnants of our collective heritage.

C. 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 brings federal grant funds to Wisconsin for improving access and preservation of historical records.

Section 5.9 Cultural Resource Issues

The following issues/concerns were identified through the planning process:

- There is a desire by some residents to protect cultural resources such as, the Town Hall and Church on Trout Creek Rd.
- To what extent can the Town promote the maintaining of old farm buildings to preserve community character?

Section 5.10 Cultural Resource Goals, Objectives and Policies

Goal 1: Residents are more aware of cultural and historic resources in New Hope.

Objective 1.1: Develop guidelines for identifying and protecting cultural and historic resources in the Town.

Policy 1.1.a: Work with Portage County Historical Society and other organization to identify and promote the protection of cultural and historic resources.

Policy 1.1.b: Create and maintain a map of cultural and historical sites within the Town.