

CHAPTER 5 Agricultural, Natural and Cultural Resources Element

66.1001 (2)(e) Wis. Stat.:

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.

This element will talk about the agricultural landscape and the natural and cultural resources in and around the Village.

Section 5.1 Agricultural Inventory

A. Agricultural land

The Village of Nelsonville has approximately 222 acres of agricultural land within the Village limits.

Although agricultural and residential developments tend, in general, to have conflicts if located next to each other, it seems that this has not been an issue in the past for the Village of Nelsonville. Residential development within the Village has occurred in a compact fashion and at a slow pace, which has presented minimal conflicts over time with adjoining agricultural activities. The pace of residential expansion is projected to remain slow. When future residential development does occur next to agricultural uses, new land owners must fully understand the agriculture operations that take place, and if desired to incorporate a buffer from the agricultural land.

B. Farm Economy and Infrastructure

The Village of Nelsonville has three agriculture businesses located within the Village limits, including Tomorrow Valley Ag, Lake Elaine Game Farm, and Lady Bug Gardens. Gordondale Farms, located adjacent to the Village in the Town of Amherst, has one farmstead located within the Village limits along with a small portion of its acreage in crop land.

Section 5.2 Natural Resources Inventory

This section will describe the existing conditions of natural resources in the Village of Nelsonville and surrounding areas. Natural resources include: soils, watersheds, lakes, rivers, groundwater, shorelands, floodplains, wetlands, forests, vegetation and wildlife.

The physical environment and geology of the Nelsonville area is comprised of gently rolling hills with areas of severe slopes greater than 12% (Map 5.1). This area is located within the Drift Province which was formed by glacial moraine made up of glacial sediments ranging from sands to loams and somewhat clayey materials. The province consists of a thick sandy till and glacial outwash containing sand and gravel with small amounts of silt or clay.

A. Soils

There are 18 soil types that occur in the Nelsonville area (Map 5.2). The large majority of soils in the Village of Nelsonville fall into two soil associations: the Wyocena-Rosholt and Richford-Rosholt-Billett. The majority of the Village land area contains the Wyocena-Rosholt association, which is well-drained, gently sloping to very steep soils that formed in loamy deposits and sandy glacial till or outwash sand and gravel. The Richford-Rosholt-Billett association soils are located in the upper northwest corner of the Village. These soils are well drained, nearly level to gently sloping, and were formed in sandy and loamy deposits or outwash sand and gravel. The most prevalent soil types in Nelsonville include Alluvial, Richford loamy sand, Rosholt sandy loam, Rosholt loam, Wyocena sandy loam, and Billett sandy loam.

These soils pose limitations on development ranging from slight to severe depending on percent slope, and distance from the Tomorrow River, in which the alluvial soils are very poorly drained and subject to flooding. Nelsonville's soils also have moderate to very severe limitations for septic tank absorption fields due to steep slopes and rapid permeability resulting in possible contamination of groundwater.

B. Watersheds

The municipal boundary for the Village of Nelsonville lies within the Tomorrow/Waupaca River Watershed (Map 5.3), a 291-square-mile drainage basin. Approximately 189 square miles (65%) of the watershed is located in Portage County. The topography of this area consists of gently rolling hills lying on the edge of a glacial moraine. Over half of the watershed is internally drained, with surface waters flowing to potholes, small ponds, and kettle lakes. The majority of the drainage in the Nelsonville area flows into the Tomorrow/Waupaca River, with the exception of the southwest corner of the Village, which flows in to Lake Elaine.

1. Lake Elaine (or Stoltenberg Lake as per the Department of Natural Resources (DNR))

Lake Elaine, approximately 17 acres in area, has a maximum depth of 29 feet and is located in the southwest corner of the Village. The Village of Nelsonville owns a small strip of land on the southwest side of the lake. Motorboats are not allowed on the lake, due to an agreement with adjacent land owners.

2. Tomorrow River

The Tomorrow River is classified as a class 1 trout stream as it flows through the Village limits. It is considered one of the best streams in the area, and is listed in the Department of Natural Resources Statutes (NR) 102 as an "Outstanding Resource Water for the Class 1 trout portions". The bottom consists of sand, silt, gravel and boulders, and ranges from 30 to 50 feet wide. Siltation and fluctuating water temperature are the major problems of the Tomorrow River. In addition to the fishing, this stream is important for its recreational potential. The Tomorrow River is home to many native brook trout and brown trout. According to the County Conservationist water quality is relatively good.

3. Stoltenberg Creek and Gordon Creek

Stoltenberg Creek rises from a spring south of US Highway 10 and north of Old Hwy 18. It generally flows to the east/northeast for about 3 miles until it empties into the Tomorrow River north of the Village of Nelsonville. Gordon Creek flows from the northeast into the Tomorrow River. Since both creeks affect the water quality of the Tomorrow River, land uses which may negatively affect water quality in the creeks should be monitored.

Map 5.1 Topography

Map 5.2 Soils

Map 5.3 Watershed and Groundwater Flow

C. Wetlands

Wetlands located in the Village of Nelsonville (Map 5.4) consist of three types:

1. Emergent/wet meadow – consists of wetland 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, marsh milkweed, sneezeweed, mint and several species of goldenrod and aster.
2. Scrub/shrub wetlands – which include bogs and alder thickets, are characterized by woody shrubs and small trees such as tag aster, bog birch, willow and dogwood.
3. Forested 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, and silver maple. These wetlands are located along the edges of the Tomorrow River, and its two tributaries that run to the east and west.

Wetlands areas 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 shore lands and providing essential wildlife habitat, flood control and groundwater recharge for the area.

D. Groundwater

100 percent of domestic water use in the Village of Nelsonville comes from groundwater. Groundwater supplies are considered adequate to meet the needs of Nelsonville residents. Currently, there are three privately owned high capacity wells located within the Village, which are used for various purposes. Depth to groundwater generally ranges from 10 feet to 50 feet. The general direction of groundwater flow for the Nelsonville area is toward the Tomorrow River (see Map 5.3). Knowing where the recharge area is and the direction in which groundwater generally flows is important when evaluating the intensity and type of land uses allowed within the recharge area.

The recharge area for the majority of residents in the downtown area of Nelsonville is located to the north/northeast of the Village. The rate at which groundwater travels in the area ranges from 1 to 5 feet per day, or approximately 1 mile in three to ten years. Sandy soil conditions in the area allow for rapid infiltration of surface water to the groundwater, which may allow contaminants to more easily enter the water supply. Water quality data compiled by the Portage County Groundwater Specialist indicates that private wells in the Village are generally acceptable but the groundwater is susceptible to contaminants not currently tested for.

Water quality in private wells is generally considered to be good, although nitrate levels can be high and do fluctuate seasonally. Nitrate is commonly found in nitrogen fertilizers, manure, septic systems, and sewage treatment practices. Nitrate dissolves easily in water and does not absorb onto the soil, which allows it to travel easily in groundwater. State and Federal regulations advise that nitrate levels in drinking water not exceed 10.00 parts per million (PPM) for health reasons. According to Portage County records, 43 wells have been sampled in the Village for nitrates dating back to 1977. Of these 43 samples, 20 had levels above 10 parts per million. Since 2012, 6 wells have been tested for nitrates in the Village and 3 have exceeded 10 parts per million.

Atrazine is an herbicide (weed killer) that is used to control weeds in corn fields and other agricultural use sites. It has been used in Wisconsin for over 50 years and can enter groundwater as a result of use on farm fields or from a spill or improper disposal. People who drink water

containing atrazine for many years could experience problems with their cardiovascular system, reproductive difficulties, and other health problems. There is also a concern that atrazine may be an endocrine disruptor, which can cause unintentional hormone-like activity in the body.

The State of Wisconsin has established a groundwater enforcement standard for atrazine at 3 parts per billion (ppb). Atrazine has been detected above the health standard in some wells within the Village of Nelsonville and neighboring Town of Amherst. Because of this, an Atrazine Prohibition Area was defined within these communities as established by the Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP) in 1999. The majority of the Village of Nelsonville is located within the prohibition area (Map 5.5).

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.

E. Shore Lands

Shore lands in the Village of Nelsonville are located along the Tomorrow River, Stoltenberg Creek, Gordon Creek and Lake Elaine. As of 2003, the Village ordinances required that all buildings and structures shall be set back at least 100 feet from the ordinary high water mark of navigable waters established during non-flood events. The Village of Nelsonville Conservancy District was established to preserve and perpetuate certain areas such as low land swamps, marshes and wetlands and other areas of aesthetic value in an open state. Other restrictions from the Department of Natural Resources (DNR) and U.S. Corps of Engineers are possible.

F. Floodplains

A floodplain is defined as that land which has been or may be covered by floodwater during the regional flood. The floodplain includes the floodway and floodfringe 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.

The Village of Nelsonville floodplains are located along the Tomorrow River, Stoltenberg Creek; Gordon Creek and Lake Elaine (Map 5.6).

Floodplains are areas adjacent to waterways that provide many benefits. These include: natural flood and erosion control, water quality maintenance, ground water 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.

G. Woodlands/Forest area

Forest land is seen as an essential part of the Village of Nelsonville. There are 197 acres of forested areas in Nelsonville (Map 5.7).

Map 5.4 Wetlands

Map 5.5: Atrazine Prohibition Areas

Map 5.6: Floodplain

Map 5.7: Forested Land

Section 5.3 Cultural Resources Inventory

The Nelsonville Mill, or Rising Star Mill, is one of the oldest mills in this part of the state and the last one in Portage County. The mill was built around 1860 by Jerome Nelson, and operated as a business until 1984. The Portage County Historical Society acquired the mill in January of 1995 from the Department of Natural Resources (DNR). The Mill now hosts several music concerts each year, with the biggest event being the Annual Open House Art Show. All profits generated are applied to the restoration and maintenance of the Mill.

Section 5.4 Issues identified by the Plan Commission

A. Agriculture – Related Issues

1. Area-wide agriculture is important to the economy of the Village.
2. There is no prime agriculture land within the Village limits that should stay strictly agriculture land and not developed.
3. Nelsonville should grow outward from the center.

B. Natural Resource – Related Issues

1. The Tomorrow River and Lake Elaine are important community resources, and public access should be maintained to water resources.
2. Forested land in the area is another major asset to Nelsonville, and the Village would like to see those areas protected.
3. Nelsonville needs to protect groundwater, by regulating for low-density development.

C. Cultural Resource – Related Issues

The Village does not have any issues at this time.

Section 5.5 Agricultural, Natural and Cultural Resources Goals, Objectives and Policies

A. Goals

1. Sustain an economically viable agricultural industry.
2. Protect and manage the natural resources within the Village.
3. Encourage identification and protection of historic and cultural resources.

B. Objectives

1. Agricultural practice shall not be encumbered by development.
2. Utilize agricultural practices that are environmentally sensitive and protect air, soil, water, and wildlife.
3. Preserve productive agriculture land.
4. Identify, manage, preserve and protect natural resources in the Village.
5. Protection of Groundwater resources is desired by the Village.

6. Development takes into consideration the protection of our natural resources.
7. Preserve the aesthetics of the Village.

C. Policy

1. Discourage non-farm residential development on productive agricultural lands, particularly in the outlying parts of the Village, or in locations which could create conflicts with existing agricultural operations.
2. Follow all State and Federal rules and regulations that pertain to the protection of air, water, soil and wildlife.
3. Promote low density residential development within the Village of Nelsonville to protect groundwater resources.
4. Preserve the aesthetics of the Village by encouraging the protection of forested areas especially along river corridors.