5. Agricultural, Natural, and Cultural Resources

5.1 Introduction

This element provides an inventory and assessment of the agricultural, natural, and cultural resources for the Town of Herman. Land development patterns are directly linked to the resource base; therefore, these features need to be considered before making any decisions concerning future development within the Town of Herman. The Town of Herman's agricultural, natural, and cultural resources contribute greatly to its resident's quality of life.

5.2 Soils

Soil is composed of varying proportions of sand, gravel, silt, clay, and organic material. The composition of a soil must be evaluated prior to any development, as varying limitations exist for each soil. Dodge County soils are products of the deposits left after the glacier receded about 12,000 years ago. These deposits consisted of sand, gravel, large rocks, clay, limestone fragments, and igneous and metamorphic rocks. The deposits have prompted mineral and sand and gravel extraction throughout some of the communities in Dodge County.

The majority of soils in the Town of Herman are upland silt loam considered good for agricultural uses. Topsoil generally ranges between 10 and 14 inches in depth. The seven general soil associations found in the Town include Fox-Casco-Rodman, McHenry-Pella, Plano-Mendota, Houghton-Pella, St. Charles-LeRoy-Lomira, Theresa-Lamartine-Hochheim, and St. Charles-Miami-Elburn.

5.3 Prime Agricultural Soils

The soils in Dodge County are classified by the United States Department of Agriculture to represent different levels of agricultural use. Class I, II, or III soils are all considered good soils for agricultural production. This classification system is based on criteria of production potential, soil conditions, and other basic production related criteria. All the soils classified as Class I and Class II are identified as prime agricultural soils. Whereas only some of the Class III soils are considered prime agricultural soils and the remaining soil is considered farmland of statewide importance. Map 5-1, Appendix, shows the prime agricultural soils in the Town of Herman.

Agricultural farming practices are usually in conjunction with prime agricultural soils. Many of the dairy farm operations in the Town of Herman are on good agricultural land. The 2003 Wisconsin dairy farm data show the Town of Herman having approximately 44 active dairy farms.

5.4 Forests

The Town of Herman is covered by approximately 2,262 acres of wooded area. Wooded areas have been cleared in the Town to make room for agricultural fields and residential uses. Only about 9.72 percent of the Town's surface area is in woodland use. Map 5-2, Appendix, shows the woodlots in the Town of Herman.

There is limited economic potential from the remaining woodlots since they tend to be small and widely scattered. Many contain residential development or are located in public parks and recreation areas.

5.5 Metallic and Nonmetallic Mineral Resources

Wisconsin Administrative Code NR 135 requires that all counties adopt and enforce a Nonmetallic Mining Reclamation Ordinance that establishes performance standards for the reclamation of active and future nonmetallic mining sites. It is intended that NR 135 will contribute to environmental protection, stable non-eroding sites, productive end land use, and the potential to enhance habitat and increase land values and tax revenues.

Dodge County has a Nonmetallic Mining Reclamation Overlay District as part of its adopted Land Use Code. The purpose of this overlay district is to establish a local program to ensure the effective reclamation of non-metallic mining sites in Dodge County.

The Town of Herman currently has one active nonmetallic mine covering approximately seven acres. Map 4-9, Appendix, displays the non-metallic mine location in the Town of Herman.

5.6 Wetlands

According to the United States Environmental Protection Agency, wetlands are areas where water covers the soil, or is present either at or near the surface of the soil all year or for varying periods of time during the year, including during the growing season. Water saturation (hydrology) largely determines how the soil develops and the types of plant and animal communities living in and on the soil. Wetlands may support both aquatic and terrestrial species. The prolonged presence of water creates conditions that favor the growth of specially adapted plants (hydrophytes) and promote the development of characteristic wetland (hydric) soils.

Wetlands may be seasonal or permanent and are commonly referred to as swamps, marshes, fens, or bogs. Wetland plants and soils have the capacity to store and filter pollutants ranging from pesticides to animal wastes. Wetlands can make lakes, rivers, and streams cleaner and drinking water safer. Wetlands also provide valuable habitat for fish, plants, and animals. In addition, some wetlands can also replenish groundwater supplies. Groundwater discharge from wetlands is common and can be important in maintaining stream flows, especially during dry months.

Local, state, and federal regulations place limitations on the development and use of wetlands and shorelands. The Wisconsin Department of Natural Resources (WDNR) has inventory maps for each community that identify wetlands two acres and larger. The wetland inventory map should be consulted whenever development proposals are reviewed in order to identify wetlands

and to ensure their protection from development. Map 5-3, Appendix, displays wetlands, watersheds, streams, and surface water in the Town.

5.7 Floodplains

For planning and regulatory purposes, the floodplain is normally defined as those areas, excluding the stream channel, that are subject to inundation by the 100-year recurrence interval flood event. This event has a one percent chance of occurring in any given year. Because of this chance of flooding, development in floodplain should be discouraged and the development of park and open space in these areas encouraged. The floodplain includes the floodway and flood fringe. The floodway is the portion of the floodplain that carries flood water or flood flows, while the flood fringe is the portion of the floodplain outside the floodway, which is covered by waters during a flood event. The flood fringe is generally associated with standing water rather than rapidly flowing water.

Wisconsin Statute 87.30 requires Counties, Cities, and Villages to implement floodplain zoning. In addition, the Federal Emergency Management Agency (FEMA) has developed flood hazard data. Majority of the floodplain areas in the Town of Herman are located in the east portion of the Town. The floodplain areas of the Town of Herman are shown on Map 5-4, Appendix.

5.8 Watersheds and Drainage

The Town of Herman is located in the Upper Rock River Basin. This basin includes 13 surface watersheds. The Upper Rock River Basin encompasses about 1,890 square miles. The Rock River Basin covers 3,700 square miles.

A report from the Wisconsin Department of Natural Resources titled *The State of the Rock River Basin* was completed in April of 2002. According to the report, the most serious challenges facing the Basin include:

- Water quality impacts and increased runoff quantity from agriculture and urban land uses, such that many of the rivers and streams are not meeting water quality standards.
- Loss of agricultural lands impacts wildlife habitat, recreational usages, the rural landowners, and the economy because it changes the nature of the basin.
- Loss of critical, sensitive habitat and connection between habitats.
- Significant groundwater contamination in areas of the Basin.
- Lower urban groundwater levels due to increased use and decreased groundwater infiltration due to more acres of impervious land.

5.9 Surface Water Features

There are approximately 26 acres of surface water in the Town of Herman, including six creeks. The following is a description of the more prominent waterways in Herman.

Lakes

There are no lakes in the Town of Herman.

Rivers and Streams

There are many miles of streams and creeks that can be found in the Town of Herman. There are also numerous intermittent waterways scattered throughout the Town. Butler Creek and Wildcat Creek are the two major streams in the Town of Herman. Other Creeks include Lentz Creek, Limestone Creek, Woodland Creek and an unnamed creek in the northern part of the Town.

Waterway Classification

The Dodge County Planning and Development Department completed a waterway classification project in 2003. The goal of the waterway classification project was to provide the County with a method of categorizing or classifying each lake, river and stream by their unique characteristics. The classification of lakes, rivers and streams was based on criteria developed by the Wisconsin Department of Natural Resources (WDNR). The Existing Development Criterion was used with the Total Lake or Stream Sensitivity Criteria to develop the final classification of Class 1, 2 or 3 for each waterway. Using this method, a lake, river or streams level of existing development is given the same importance or weight as its sensitivity to future development impacts based on physical characteristics.

A Class 1 waterway is the most sensitive to future development and has a lower level of existing development. A Class 3 waterway is the least sensitive to future development and has a higher level of existing development. The following listing contains the Town of Herman waterways that were classified and their final classification:

Wildcat Creek – Class 3
Butler Creek – Class 3
Lentz Creek – Class 1
Limestone Creek – Class 2
Woodland Creek – Class 3
Unnamed Creek – Class 2

5.10 Groundwater Resources

The source of all groundwater is precipitation, which percolates down through the soil until it reaches the saturated zone called an aquifer, where it is then contained. Water in an aquifer travels from its source to a discharge point such as a well, wetland, spring, or lake. During periods of increased precipitation or thaw, this vast resource is replenished with water moving by gravity through permeable soils which is called a water table system. In some instances, groundwater moves because of pressure created by a confining layer of impervious rock which is called an artesian system. The availability of groundwater within the Town of Herman should be investigated before any development occurs.

Most groundwater contamination is related to poorly sited land uses. For example, agricultural manure, petroleum, and salt storage in areas of high groundwater tables or fractured bedrock are

all potential sources of groundwater pollution. Contamination of groundwater reserves can also result from such sources as percolation of water through improperly placed or maintained landfill sites, private waste disposal (septic effluent), runoff from livestock yards and urban areas, improper application of agricultural pesticide or fertilizers, excessive lawn and garden fertilizers and pesticides, leaks from sewer pipes, and seepage from mining operations. Runoff from leaking petroleum storage tanks and spills can also add organic and chemical contaminants in locations where the water table is near the surface. Once groundwater contamination has occurred, successful remediation is expensive and can take years, or may never occur, depending upon the pollutant. Therefore, when considering specific land uses for an area, it is vital to consider the physical characteristics of the area and the relationships between the land and the proposed/actual use in order to ensure that groundwater contamination does not occur.

Within Dodge County there are areas that have natural occurring and human influenced well contaminations. According to studies performed by University of Wisconsin-Extension offices, there are multiple types of contaminations in Dodge County. One major contamination is nitrates, which are mainly human influenced and a major concern in parts of Dodge County. Currently, the Town of Herman has higher than average nitrate levels. Also, the Town has few areas with high chloride levels. These two types of contamination may be linked to agricultural practices, shallow bedrock, or uncontrolled spreading of contaminants. Another contamination that raises concern is the high number of positive bacteria samples in an area. The Town of Herman has a few areas with a number of positive bacteria samples. Some of these contaminations can be linked to unique bedrock or groundwater features, or current or past land use practices in the area. To help control future well contaminations the Town of Herman should conduct testing to identify contaminated areas and reduce development in those areas.

5.11 Air Quality

Air quality, especially good air quality, is often taken for granted. The eastern portion of Wisconsin experiences high concentrations of ground-level ozone. Ground-level ozone, or smog, forms when pollutants emitted from vehicle exhaust, power plants, factories, and other combustion sources combine in the hot summer sun. In addition, warm weather causes an increase in air conditioner usage, which can increase harmful emissions from these sources.

To manage the state's air quality, the DNR uses both a network of air quality monitors and a series of air pollution control rules that limit emissions from air pollution sources based on various criteria. There is one air monitoring site in Dodge County, located in the City of Mayville.

5.12 Environmental Corridors/Sensitive Areas

Environmental corridors are continuous systems of open space that often include environmentally sensitive lands including woodlands, wetlands and habitat areas, natural and cultural resources requiring protection from disturbance and development, and lands needed for open space and recreational use. Environmental corridors serve multiple functions. Protection and preservation of environmental corridors contribute to water quality through reduction of nonpoint source pollution and protection of natural drainage systems. Environmental corridors can also protect and preserve sensitive natural resource areas such as wetlands, floodplains,

woodlands, steep slopes, native grasslands, prairies, prairie savannas, groundwater recharge areas, and other areas that would impair habitat and surface or groundwater quality if disturbed or developed. Map 5-5, Appendix, identifies environmental corridors and natural limitations for building site development in the Town of Herman.

5.13 Threatened and Endangered Species

The Wisconsin Department of Natural Resources (WDNR) lists species as "endangered" when the continued existence of that species as a viable component of the state's wild animals or wild plants is determined to be in jeopardy on the basis of scientific evidence. "Threatened" species are listed when it appears likely based on scientific evidence that the species may become endangered within the foreseeable future. The WDNR also lists species of "special concern" of which some problem of abundance or distribution is suspected but not yet proved; the intent of this classification is to focus attention on certain species before becoming endangered or threatened.

Table 5-1 shows the rare, threatened, and endangered species that may be found in the Town of Herman and Dodge County.

Table 5-1: Rare, Threatened, and Endangered Species, Town of Herman and Dodge County

	Wisconsin Status	Taxa
Plants		
Lesser Fringed Gentian	Special Concern	
Richardson Sedge	Special Concern	
Showy Lady's-Slipper	Special Concern	
Slim-Stem Small-Reedgrass	Special Concern	
Small White Lady's-Slipper	Threatened	
Wafer-Ash	Special Concern	
Yellow Gentian	Threatened	
Animals		
Cantrall's Bog Beetle	Special Concern	Beetle
Giant Carrion Beetle	Endangered	Beetle
Barn Owl	Endangered	Bird
Black-Crowned Night-Heron	Special Concern	Bird
Forster's Tern	Endangered	Bird
Great Egret	Threatened	Bird
Red-Shouldered Hawk	Threatened	Bird
Gorgone Checker Spot	Special Concern	Butterfly
Side-Swimmer	Special Concern	Crustacean
American Eel	Special Concern	Fish
Banded Killfish	Special Concern	Fish
Least Darter	Special Concern	Fish
Pugnose Minnow	Special Concern	Fish
Redfin Shiner	Threatened	Fish
River Redhorse	Threatened	Fish
Slender Madtom	Endangered	Fish
Striped Shiner	Endangered	Fish
Week Shiner	Special Concern	Fish
Blanchard's Cricket Frog	Endangered	Frog
Arctic Shrew	Special Concern	Mammal
Franklin's Ground Squirrel	Special Concern	Mammal
Pigmy Shrew	Special Concern	Mammal
Prairie Vole	Special Concern	Mammal
Ellipse	Threatened	Mussel
Blanding's Turtle	Threatened	Turtle

Source: Wisconsin Department of Natural Resources.

5.14 Wildlife Habitat and Recreational Areas

Wildlife habitat can be simply defined as the presence of enough food, cover, and water to sustain a species. The wetland areas of the Town are particularly accommodating to many types of waterfowl, such as geese, ducks, herons, egrets, and swans. The Town also has upland habitat areas suited for pheasants. The Town of Herman is also home to a variety of song birds and the typical upland animals of southern Wisconsin, including deer, rabbit, fox, raccoon, squirrel, and muskrat.

The Wisconsin Department of Natural Resources identifies State Natural Areas, which are defined as tracts of land in a natural or near natural state and which are managed to serve several purposes including scientific research, teaching of resource management, and preservation of rare native plants and ecological communities. There are no State Natural Areas in the Town of Herman.

5.15 Historic Places

State and National Register of Historic Places

The National Register of Historic Places recognizes properties of local, state, and national significance. Properties are listed in the National Register because of their associations with significant persons or events, because they contain important information about our history or prehistory, or because of their architectural or engineering significance. The National Register also lists important groupings of properties as historic districts. In addition, the National Park Service highlights properties that have significance to the nation as a whole by conferring on them the status of National Historic Landmark.

The Wisconsin State Register of Historic Places parallels the National Register. However, it is designed to enable state-level historic preservation protection and benefits. Most of the properties in Wisconsin listed in the National Register are also listed in the State Register. There are no sites in the Town of Herman that are listed on the State or National Register.

Wisconsin Architecture & History Inventory

The Wisconsin Architecture & History Inventory (AHI) provided by the Wisconsin Historical Society lists historical and architectural information on properties in Wisconsin. The AHI contains data on buildings, structures, and objects that illustrate Wisconsin's unique history. The majority of properties listed are privately owned. Listed properties convey no special status, rights, or benefits. These sites should be periodically reviewed for possible designation on state or national registers.

According to the AHI, the Town of Herman has 101 sites on the Wisconsin Architecture & History Inventory. Due to the large amount of AHI sites, the Town of Herman's sites can be viewed on the Architecture and History Inventory website: ww.wisconsinhistory.org/index.html.

5.16 Cultural Resources

Cultural Facilities

Cultural amenities enhance the quality of life, encourage residential development and attract tourism. Such amenities are limited in the Town of Herman since it lacks the support populations needed for diverse cultural opportunities. Cultural facilities such as libraries, museums, and historical markers are not present in the Town of Herman. Map 5-6, Appendix, displays historical, cultural and archaeological resources in Dodge County.

As shorter trips and historical attractions continue to become more popular, local museums will likely be in greater demand as recreational destinations. A present problem with most local museums is the very limited amount of time they are open to the public due to the number of available volunteers and low or non-existent staffing budgets. As demand increases, the museums should be made more convenient and accessible as a local recreation facility.

5.17 Community Design

The Town of Herman is located along east central portion of Dodge County. The Town is approximately 36 square miles in size, and is surrounded by Dodge County to the north, south, and west, and Washington County is to the east. The Town of Herman has large tracts of agricultural land and open space. The Village of Iron Ridge is located along the Town's western edge.

5.18 Agricultural, Natural, and Cultural Resources Trends

The following are anticipated trends in regard to agricultural, natural, and cultural resources in the Town of Herman for the planning period:

- The number of farms will continue to decline;
- The size of the average farm will continue to show moderate increases;
- Pressure to convert farmland to other uses will increase;
- The number of dairy farms will continue to decline;
- Dairy herd sizes will continue to increase;
- Dairy herd production will continue to increase;
- Interest in farmland preservation programs will decrease;
- Interest in cash cropping will increase;
- Interest in specialty farming will increase;

- Interest in "value-added" businesses to complement small dairy and general farming operations will increase;
- Large dairies required to obtain Wisconsin Point Discharge Elimination System (WPDES) permits will increase;
- Interest in voluntary management programs that supply a property tax break, such as Managed Forest Law (MFL), will increase;
- Interest in using waterways for recreational purposes will continue;
- The Town's water fronts, woodlands, and highland areas will be desired as residential building sites;
- Challenges to groundwater resources will grow including increasing quantity of withdrawal and increasing of potential contamination sources;
- Increased traffic will have a negative impact on air quality.