

# Agricultural, Natural and Cultural Resources

## Major Findings

1. The Town of Marshfield land use pattern is predominantly a rural farming community that values the rural atmosphere and “family-farms.”

## Recommendations

1. Agricultural siting and working lands initiative will be important regulations in the oversight and location of large farm operations.

## Goals, Objectives, Policies and Programs

### Goals

1. When land use choices are presented to the Plan Commission and Town Board, high consideration will be given to support and promote agricultural, natural, and cultural resources of the Town of Marshfield.

### Objectives

1. **Code Enforcement:** Preserve agriculture as the primary land use in Marshfield through the enforcement of State, Federal, County and Town regulations.
2. **Land Stewardship:** The Town of Marshfield’s Plan Commission and Town Board will strive to be good stewards of prime farmland when deciding on a rezoning from agricultural to residential. The same type of rezoning where the vast majority is not prime farmland should be found more acceptable.
3. **Document Notification:** Include in a new Subdivision Ordinance the “right to farm” language on the face of a csm or plat, warning potential buyers of the implications of living next to such operations.
4. **Preserving Large Agricultural Parcels:** Larger agricultural parcels are to be maintained, if possible, when siting any new development in an agricultural area.
5. **Historical Considerations:** Be proactive in the preservation of architecturally or historically significant structures

### Policies

1. **Protection of Environmental Corridors:** When evaluating any potential development projects, the Town of Marshfield will consider the potential impact on natural resources, environmental corridors, and habitat areas and will work with Fond du Lac County to enforce shoreland-wetland ordinances.

### Programs

1. **Farming Programs:** The Town of Marshfield will encourage farmers and agricultural land-owners to become involved in, or continue participation in, state and federal programs that financially support farm production.

## Background Information

### Agricultural Resources

#### **Prime Farmland** (see Map 3)

- Map 3 identifies three classifications of prime farmland as established by the U.S. Natural Resources Conservation Service (NRCS).
  - “Prime Farmland” is land that, by virtue of its physical and chemical features, soil quality, growing season, moisture supply, and topography, is able to sustain the long-term production of agricultural crops.
  - “Farmland of Statewide Importance” is Prime Farmland with minor shortcomings, such as greater slopes or less ability to store moisture.
  - “Prime Farmland if drained” is not defined by the NRCS, so the level of drainage is unknown.
- The majority of the town is “prime farmland”.
- Areas of “prime farmland if drained” surround the streams and ditches in the town.
- There are small pockets of “farmland of statewide importance” throughout the town.
- Only the area along Sheboygan River and several other small areas are considered not prime farmland.

### Agricultural Programs

#### ***Agricultural Impact Statement Program***

- An agricultural impact statement is required when the builders of a public construction project have the power to condemn property (eminent domain) and will acquire more than five acres of land from any farm operation.
- Agricultural impact statements analyze the potential impact of public construction projects on farmland and farm operations, and recommend ways to lessen those impacts. Examples of public construction projects include highway expansions, the placement of utility transmission lines, and the construction of pipelines or wastewater treatment plants.
- More information about this program can be found at:

[http://www.datcp.state.wi.us/arm/agriculture/land-water/ag-impact-stmts/doc\\_info.jsp](http://www.datcp.state.wi.us/arm/agriculture/land-water/ag-impact-stmts/doc_info.jsp)

#### ***Farmland Preservation Plan***

- This program assists in preserving Wisconsin's valuable farmland by supporting counties in creating county agricultural preservation plans. The plans lay the groundwork for towns and counties to develop exclusive agriculture zoning districts.
- Fond du Lac County adopted a Farmland Preservation Plan in 1982.
- Land shown on the County's Farmland Preservation Plan as Farmland Preservation Areas and zoned as Exclusive Agriculture can be enrolled in this program, making the owner/farmer eligible for farmland tax credits.
- As a result of the efforts of the Working Lands Initiative, Chapter 91 of the Wisconsin State Statutes was amended in 2009 to improve the Farmland Preservation Program. For more information on the Working Lands Initiative, go to this web site:

<http://www.datcp.state.wi.us/workinglands/index.jsp>

- Fond du Lac County is planning on updating its Farmland Preservation Plan in 2011.

- ❑ Further information about Fond du Lac County's and the State of Wisconsin's Farmland Preservation Plan can be found at:

<http://www.co.Fond du Lac.wi.us/landcons/Farmland%20Preservation%20Program.htm>

[http://www.datcp.state.wi.us/arm/agriculture/land-water/conservation/farmland\\_pres.jsp](http://www.datcp.state.wi.us/arm/agriculture/land-water/conservation/farmland_pres.jsp)

### ***Livestock Facility Siting Program***

- ❑ The State of Wisconsin has passed a law and adopted rules (ATCP 51) that give local government the ability to regulate livestock facilities with large numbers of animals. It is important to note that a town does not have to regulate livestock facilities, but if they choose to do so, it must be based on the law and rules.
- ❑ The Town of Marshfield has amended its zoning ordinance by adding a section that would regulate a new livestock facility with more than 500 animal units or an existing facility that increases the number of animal units by more than 20 percent.
- ❑ For more information on ATCP 51, go to this web site:

[www.datcp.state.wi.us/arm/agriculture/land-water/livestock\\_siting/siting.jsp](http://www.datcp.state.wi.us/arm/agriculture/land-water/livestock_siting/siting.jsp)

## Natural Resources

### **Environmental Characteristics**

#### ***Geology***

- ❑ The bedrock and glacial (surficial) geology of Fond du Lac County in the Marshfield area is somewhat unique and will be key components in determining the suitability for development within the area.
- ❑ The Town is underlain by bedrock composed of Niagara dolomite, limestone which composes the Niagara Cuesta, a prominent feature that extends to the east as far as Niagara Falls, and terminates at its western end at Lake Winnebago in a dramatic escarpment.
- ❑ The Niagara escarpment (or as known locally as the "ledge") is the most prominent geologic feature within Fond du Lac County.
- ❑ A cuesta is a persistent ridge with a gentle slope on one side and a steep slope (the exposed escarpment) on the other, and, in general, reflects erosional resistance.
- ❑ There is a considerable amount of evidence to suggest that the Niagara escarpment in Wisconsin took on its current form as a result of the last glaciation. As the ice pushed forward it helped carve out the cliffs and ledges that we see throughout the northeast and east central portions of the state.
- ❑ The escarpment is unique in this area because of the parallel movement of the glacier against rock. Where the escarpment runs visibly, across portions of Door, Kewaunee, Brown, Calumet, Fond Du Lac, and Dodge counties, its appearance is much more uniform than in other areas of the cuesta.
- ❑ The composition of the cuesta in this area consists principally of highly fractured dolomitic limestone referred to as Silurian Dolomite or Niagara Limestone.
- ❑ The Niagara Cuesta offers scenic vistas, significant archeological sites, and unique and potentially endangered plant and animal species.
- ❑ The Town of Marshfield contains a number of glacial features called drumlins. Drumlins are composed of glacial overburden; loose rock, gravel, sand and clays. Drumlins are found throughout eastern Fond du Lac County and account for the hilly terrain.

### **Soils**

- ❑ Soils support the physical base for development in the Town of Marshfield. Knowledge of the limitations and potential difficulties of soil types is important in evaluating land use proposals such as residential development, utility installation and other various projects.
- ❑ Severe soil limitations do not necessarily indicate areas cannot be developed, but rather indicate more extensive construction measures must be taken to prevent environmental and property damage. These construction techniques generally increase the costs of development and the utilities needed to service that development.
- ❑ The Theresa-Pella-Lamartine is the prevalent soil association in the Town of Marshfield. Soil types can be a determining factor for sewer systems.
- ❑ The soil distribution within the town is extremely complex. Presumably, this is the result of random distribution from glacial action. Because of the multiplicity of soil types, it is advisable to make a test dig before undertaking major construction.

### **Surface Waters (see Map 4)**

- ❑ The WDNR's Surface Water Data Viewer indicates that there are three primary watersheds in the Town of Marshfield. The vast majority of land in the Town is in the Sheboygan River watershed.
- ❑ The link below is to WDNR's Surface Water Data Viewer, an interactive GIS site that allows users to identify the locations of water features such as navigable streams and wetlands.  
<http://dnrmaps.wisconsin.gov/imf/imf.jsp?site=SurfaceWaterViewer>
- ❑ Table 2 shows that there are 114 acres of open water in the Town of Marshfield.

### **Groundwater**

- ❑ Groundwater resources within the Marshfield area are linked directly to the surficial glacial deposits and underlying bedrock structure as described previously.
- ❑ Of the four aquifers, the Silurian Dolomite aquifer is the most widely used for sustained high capacity wells.
- ❑ Pockets of sand exist in the underlying dolomite limestone.
- ❑ Areas of high groundwater should be avoided for development because of the potential negative impact on the quality of the groundwater and the cost of mitigating the impacts of high groundwater levels on the building foundations.
- ❑ The Wisconsin Groundwater Coordinating Council (GCC) is an interagency group whose purpose is to serve as a means of increasing the efficiency and facilitating the effective functioning of state agencies in activities related to groundwater management. More information about the council's responsibilities, actions, activities, and coordination efforts with local officials can be viewed at this web site:  
[www.dnr.wi.gov/org/water/dwg/gcc/index.htm](http://www.dnr.wi.gov/org/water/dwg/gcc/index.htm)
- ❑ The protection of groundwater is especially important to the residents of the town as they rely on private wells for their primary source of water. It is critical that the quality of potable water be monitored to identify any contamination.
- ❑ The primary potential pollution sources to the town's groundwater are contamination from agricultural practices, leaking underground storage tanks, failing septic systems, and old unused wells.
- ❑ More information regarding groundwater that is specific to Fond du Lac County can be found at the following web site:  
<http://wi.water.usgs.gov/gwcomp/integrate/develop.html>

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[www.dnr.wi.gov/org/water/dwg/gcc/index.htm](http://www.dnr.wi.gov/org/water/dwg/gcc/index.htm)

### ***Floodplains***

- ❑ Portions of the town are susceptible to flooding. According to the FEMA flood rate maps areas on the Sheboygan River and its tributaries may be susceptible to flooding.
- ❑ Future development in and around these areas will be restricted.
- ❑ Building can occur between the floodway and flood fringe (between the 10- and 100-year flood event) in these areas if the lowest first floor elevation is two feet above the 100-year flood elevation, or the basement is flood proofed.
- ❑ Fond du Lac County GIS maps show their location; see

<http://www.co.Fond du Lac.wi.us/Fond du LacCoWi/default.htm>

### ***Invasive Aquatic Species***

- ❑ Invasive plants (and animals), which are not native to Wisconsin, lack natural predators, so they grow rapidly and displace native species, imbalance natural ecosystems, and diminish the quality of recreational activities. See the following website for more information on particular invasive aquatic species in Fond du lac County:

<http://dnr.wi.gov/lakes/ais/counties/index.asp?county=Fond%20du%20Lac>

### ***Shoreland and Wetland Resources***

- ❑ Wetlands and shoreland areas are essential environmental features for providing wildlife habitat, scenic open spaces, flood water retention, and groundwater discharge areas.
- ❑ Protection of wetlands is especially important for stormwater management purposes and open space planning.
- ❑ Local, state, and federal regulations place strict limitations on the development and use of wetlands and shorelands.
- ❑ Shorelands, as defined by the Wisconsin DNR, are those areas within 300 feet of the high water mark of navigable streams, rivers or to the "landward side of the floodplain, whichever distance is greater" and shoreland use and development within 1,000 feet of lakes, ponds, or flowages.
- ❑ The Corps of Engineers has federal authority over the placement of fill materials in virtually all wetlands of 5 acres or greater.
- ❑ Marshfield has several large tracts of wetlands within its boundary that are associated with mucky soils. These narrow leaved, emergent/wet meadow types of wetlands are contained within floodplain area and serve as important floodwater storage areas for the Sheboygan River system.
- ❑ The DNR website has information on wetlands as they relate to development projects or protection issues. The page provides links to specific administrative rules, discussions on wetland laws and programs, as well as other wetland issues. The DNR website address is:

<http://www.dnr.wi.gov/org/water/fhp/wetlands/programs.shtml>

### **Woodlands & Wildlife Habitat (Map 1)**

- ❑ The largest concentration of woodlands in Marshfield is in the lower one quarter of the Town on both sides of the Sheboygan River. These areas provide both aesthetic and practical benefits and should be preserved whenever possible.
- ❑ Fond du Lac County falls within the Central Hardwood province which contains a wide variety of vegetational types, both forest and non-forest.
- ❑ Currently a mixture of oak, maple, willow, tag alder, dogwood, aspen, white birch, and red and white cedar are present in various areas of the Town.
- ❑ Development in woodlands can destroy important environmental benefits that these areas provide to the community including the provision of habitat for wildlife.
- ❑ Wooded areas in the town provide habitat for wildlife and serve as an aesthetic amenity for the community. Based on WDNR studies, substantial areas of pheasant habitat exist in northern and northeastern wetland areas of Fond du Lac County

### **Environmentally Sensitive Areas (Map 4)**

- ❑ Environmentally Sensitive Areas (ESAs) are areas within a landscape that encompass especially valuable natural resource features that should be protected from development.
- ❑ The following areas within the town should be considered environmentally sensitive (as shown on Map 4):
  - Navigable waters with a 75-foot buffer
  - WDNR wetlands with a 75-foot buffer
  - FEMA floodplain information
  - Moderately steep to steep areas (greater than 12% slopes)
  - Areas that provide habitat for threatened and endangered species.
  - Historical or archeological sites

### **Designated Waters**

- ❑ The link below is to WDNR's Surface Water Data Viewer, an interactive GIS site that allows users to identify the locations of water features such as navigable streams and wetlands.  
<http://dnrmaps.wisconsin.gov/imf/imf.jsp?site=SurfaceWaterViewer.deswaters>
- ❑ An Area of Special Natural Resource Interest (ASNRI) is an area designated by the WDNR as having special sensitivity or is of ecological significance. Sheboygan River and Wolf Lake are considered ASNRI in the Town of Marshfield.
- ❑ Public Rights Features (PRF) include critical fish and wildlife habitat, areas that protect water quality, natural shorelines and stream banks, water navigation areas, Lake Sensitive Areas and Rivers and Streams Sensitive Areas. There are two small areas (south of CTH Q and west of Wolf Lake) in the Town that are shown as having Public Rights Features.
- ❑ Priority Navigable Waterways (PNW) are portions of navigable waterways that are outstanding or exceptional resource waters, trout streams, waters with sturgeon and musky, and lakes less than fifty acres. PNW include ASNRI and PRF. There are no PNWs in the Town of Marshfield.

### **State Natural Areas**

- ❑ State Natural Areas (SNAs) protect significant landscape features, geological formations, and archeological sites throughout Wisconsin. These areas are valued primarily for research and educational purposes, while providing rare safe havens for scarce plants and animals. More information on all SNA's can be found at the following website:

[www.dnr.state.wi.us/org/land/er/sna/index.htm](http://www.dnr.state.wi.us/org/land/er/sna/index.htm)



There are ten State Natural Areas in Fond du Lac county. Most are in the northern unit of the Kettle Moraine State Forest.

### **Public Wildlife Recreation Land**

- ❑ The Wisconsin Department of Natural Resources (WDNR) acquires and manages public lands that provide opportunities to hunt, fish, hike, canoe, or view wildlife. The State of Wisconsin has been acquiring land to meet conservation and recreation needs since 1876 with more than 1,290,000 acres available for such use. Persons utilizing these areas can find specific information by consulting the following web page:

<http://www.dnr.state.wi.us/org/land/wildlife/reclands/northeastmap.htm>

- ❑ The WDNR has purchased extensive wetland marsh property in southern portions of the Town of Marshfield, known as the Saint Cloud State Wildlife Area.
- ❑ The WDNR is undertaking a wetland restoration project between Mount Calvary and St. Cloud. This program primarily restores grassland and wetland habitat that once existed in Wisconsin prior to its settlement. The restoration project also provides public recreational opportunities for all Wisconsin citizens, both consumptive (i.e. hunting, berry picking) and nonconsumptive (i.e. bird watching, wildlife photography) uses.
- ❑ Advantages and disadvantages of WDNR owned lands in the Town of Marshfield are:
  - a. Restored lands draw hunters and bird watchers to the area, especially during the fall and spring.
  - b. Provides residents an opportunity to connect with the natural resources
  - c. The acquisition of DNR lands removes privately owned land off the tax roll.
- ❑ For more information on the Glacial Habitat Restoration Area project, see the following website:

<http://dnr.wi.gov/org/land/wildlife/ghra/>

### **Calvary Marsh (County Owned)**

- ❑ Fond du Lac County acquired Calvary Marsh in the early 1960's by tax deed and it was designated as public hunting grounds by the County Board. This property encompasses 280 acres of mainly marsh land and provides an excellent habitat for wildlife. This county owned property is land locked and only accessible to the public by using the Sheboygan River for access. Overland access to the public is only available if a neighboring land owners grant permission to cross their land.

- ❑ More information on Calvary Marsh can be found at:

<http://www.fdlco.wi.gov/Index.aspx?page=385>

- ❑ Fond du Lac County has plans to develop a Canoe/Kayak Launch site on the Sheboygan River, just downstream from Calvary Marsh. The launch site would be designed for car top boats like canoes and kayaks and will fit within the CTH CCC road right of way. This new county facility will include parking for a half dozen vehicles, along with an all-weather path for carrying boats to the edge of the Sheboygan River.

### **Wildlife Habitat and Threatened and Endangered Species**

- ❑ Federal and state records provide general information on wildlife habitat and threatened and endangered species, and should be consulted as part of the review process for new development projects.
- ❑ Information on wildlife habitat and threatened and endangered species is available from the Wisconsin Department of Natural Resources at:
  - ❑ [http://dnr.wi.gov/org/land/er/nhi/CountyMaps/pdfs/Fond\\_du\\_Lac\\_County.pdf](http://dnr.wi.gov/org/land/er/nhi/CountyMaps/pdfs/Fond_du_Lac_County.pdf)
- ❑ This WDNR Website shows that sections 8,9,10,14,25,26,33,34,35 and 36 have aquatic threatened or endangered species and section 30 has terrestrial threatened or endangered species in the Town of Marshfield.

### **Metallic and Non-Metallic Mineral Resources**

- ❑ Aggregate material plays a vital role in new construction projects and its availability within a reasonable distance of construction projects will promote cost effective economic development.
- ❑ The Town of Marshfield has one non-metallic mining operation on Maple Road and a relatively small parcel of less than two acres on Pine Road.
- ❑ The WDNR has principal regulating authority for metallic mining activities in the state. Further information regarding metallic mining in Wisconsin can be viewed at:
  - ❑ [www.dnr.wi.gov/org/aw/wm/mining/metallic/](http://www.dnr.wi.gov/org/aw/wm/mining/metallic/).
- ❑ Operators of non-metallic mines must prepare a reclamation plan for each facility. Reclamation Plans must be in conformance to the Fond du Lac County Nonmetallic Mining Reclamation Ordinance (Chapter 36).
- ❑ Questions regarding non-metallic operations can be found in the following Wisconsin Department of Natural Resources websites:
  - ❑ [www.dnr.wi.gov/org/water/dwg/gcc/index.htm](http://www.dnr.wi.gov/org/water/dwg/gcc/index.htm), [www.dnr.wi.gov/org/aw/wm/mining/metallic/](http://www.dnr.wi.gov/org/aw/wm/mining/metallic/)

### **Air Quality**

- ❑ All of Fond du Lac County meets air quality attainment requirements.
- ❑ More information on air quality is available at: [www.dnr.state.wi.us/org/aw/air/index.htm](http://www.dnr.state.wi.us/org/aw/air/index.htm).

## **Cultural and Historical Resources**

### **State and National Register of Historic Places**

- ❑ A primary responsibility of the Wisconsin Historical Society's Division of Historic Preservation (DHP) is to administer the State and National Register of Historic Places programs. This program protects archaeological sites, burial places and historic buildings in the state.
- ❑ According to the State Register of Historic Places, there are no registered historic properties in the Town of Marshfield.
- ❑ Information regarding the State and National Register of Historic Places can be found by contacting the DHP at (608) 264-6500 or at: [www.wisconsinhistory.org/hp/register/](http://www.wisconsinhistory.org/hp/register/)

### **Architecture and History Inventory**

- ❑ A search of the DHP's on-line Architecture and History Inventory revealed that 39 sites existed within the Town of Marshfield. More information on these sites can be found by contacting the DHP at (608) 264-6500 or at: [www.wisconsinhistory.org/ahi](http://www.wisconsinhistory.org/ahi).



## Community Design

- ❑ There are two basic categories of community design standards – built environment and natural environment. Examples of the former would be guidelines developed on the appearance and size of buildings, signs and other man-made structures. The latter would include the protection of riverfronts, viewsheds created by changes in elevation or stream or riverbeds, and other natural features that appeal to the aesthetic nature of people.
- ❑ It is clear that future residential development in the Town of Marshfield will have an impact on the built environment. In a town, design standards focus less on specific buildings and more on the areas in which development can take place with a minimal impact on agricultural lands and the natural environment. Encouraging development to occur in areas where there is existing development can help the town meet the objectives of providing guidance to the built environment and protecting agricultural lands and the natural environment.
- ❑ The challenge in developing and implementing community design standards and guidelines is they tend to be subjective, meaning not everyone will agree with the design that results from the standards and guidelines being followed. One person's view of the physical appearance of a building or the aesthetic value of a wetland area may differ dramatically with another person's view. One objective should be to find the proper balance between maintaining the natural beauty of an area and developing it as the community continues to grow.