

# **Natural Resources and Environmental Concerns**

## **An Excerpt from the Town of Little River Comprehensive Plan**

Natural resources help to determine the potential for land development. Likewise, environmental characteristics indicate the ability of the land to support various types of development. Geology, topography, drainage patterns, floodplains, wetlands, and soil characteristics are among the natural and environmental features, which determine if an area is physically suitable for specific types of development.

Preservation of natural resources (groundwater, wetlands, surface and ground water, woodlands, shoreline) is an important priority for the Town of Little River. More than half of the survey respondents (63%) gave this land use issue a ranking of very important, and 28 percent gave it a ranking of somewhat important. Furthermore, participants at the Land Use Committee Open House specifically cited protection of stream banks and shoreline areas as an important land use issue.

### **Geology, Topography, and Drainage**

The nature of the glacial features, along with the type of bedrock, divides Oconto County into three distinct regions.

**The northern region**, including Armstrong, Doty, Lakewood, Riverview, and Townsend Townships, was once a mountainous area of Precambrian crystalline rock. This area was reduced over a long period of erosion and glaciation. Some remaining granitic rocks are found along some road cuts or occur as ridge top outcrops near the Town of Mountain. Some of the highest elevations in Wisconsin are in this part of Oconto County.

**The central portion** of the county is a relatively gently rolling plain approximately 20 miles wide and underlain by Cambrian sandstone east of the Oconto River and Peshtigo Brook. Parts of Brazeau, Gillette, Maple Valley, Spruce, and Underhill Township are included in this area.

**The southeastern region**, including the Town of Little River, is a broad, undulating ground moraine, which slopes to the east. Glacial lake deposits along the Bay of Green Bay overlie it. A series of low ridges generally oriented northeast to southwest characterize the topography within the Town of Little River.

Most of Oconto County is drained by the Oconto River, which flows southeast and east to the Bay of Green Bay. Small areas in the northeastern and eastern parts of the county are within the basin of the Peshtigo River.

### **Surface and Ground Water**

Water-based recreation is a major industry in Oconto County. Therefore, quality surface water resources are important to the economic well being of the county. The Oconto River and its main tributary, Little River, are major water resources. Approximately 2/3 of the county is situated in the Oconto River Watershed. There are numerous creeks, channels and sloughs in the Town of Little River, which help to convey runoff waters from the area into the Little River and

the Bay of Green Bay. Although there are no major lakes in the Town of Little River, there are a few private and public ponds and wetland areas.

The overall quality of ground water in Oconto County is generally considered to be very good. However, there are some areas that could be susceptible to ground water contamination due to shallow soils over bedrock or sandy soils. Unfortunately, there has been little monitoring of groundwater throughout the county. Currently, only volunteer monitoring occurs in the Pensaukee Watershed for nitrates. However, no problems with water quality from private wells serving residents in the Town of Little River have been reported to the county.



**Bay of Green Bay  
Town of Little River, Oconto County, WI**

The Little River Watershed has been identified as a priority watershed based on non-point pollution problems. The Little River Priority Watershed program has been developed to address cropland soil erosion, construction site erosion, streambank erosion, animal waste management, and pesticide/fertilizer runoff. Monitoring efforts have yet to determine the success of this program.

### **Shorelines and Floodplains**

Residents of the Town of Little River take great pride in the Bay of Green Bay and the Little River. These features are critical to the overall quality of life in the Town. The area along the shores of the Little River and the numerous creeks, streams, and ditches which flow through the town, are subject to flooding. Generally, areas susceptible to flooding are considered unsuitable for development due to potential health risks and property damage.



**The Little River  
Town of Little River**

### **Wetlands**

Wetlands act as a natural filtering system for sediment and nutrients such as phosphorus and nitrates. They also serve as a natural buffer, protecting shorelines and stream banks from erosion. Wetlands are also essential in providing wildlife habitat, flood control, and groundwater recharge. Due to these benefits, county and state regulations place limitations on the development and use of wetlands and shoreland.

The Shoreland/Wetland Ordinance adopted by Oconto County regulates shoreland uses and development within 1,000 feet from the ordinary high water mark of a lake, pond or flowage, and within 300 feet from the ordinary high water mark of a river or stream. For almost two decades, the U.S. Army Corps of Engineers

has had the authority over the placement of fill materials in virtually all wetlands of five (5) acres or greater. However, on January 9, 2001, the U.S. Supreme Court limited federal jurisdiction over isolated wetlands under the Clean Water Act of 1972. This Court decision now limits the jurisdiction of the U.S. Army Corps of Engineers to cover only wetlands that are directly associated with navigable waterways-lakes, streams and rivers. Since the State of Wisconsin's jurisdiction over wetlands is tied to federal statutes, as many as 4 million acres are today unprotected in Wisconsin, including some wetland areas in the Town of Little River.

The preliminary responses to this recent U.S. Supreme Court decision from the U.S. Army Corps of Engineers and the Wisconsin Department of Natural Resources have been vague and tentative. Estimates provided by the Wisconsin Department of Natural Resources wetland inventory team suggests that from 30% to 80% of the state's 5.3 million wetland acres are currently unprotected. In the past, anyone interested in filling a wetland was obligated to go through a federal and often state permit process; as of January 9, there are now no permits required. This decision is also retroactive, so for isolated wetland (i.e. not associated with navigable waterways) projects where permits may have been required and denied in the past, no permits are needed today. The U.S. Supreme Court decision has resulted in much interest in the development of a new state and national wetland law. In the meantime, the protection of isolated wetlands from development is uncertain, at best.

### Woodlands



**Grange Park West Entry  
Town of Little River, Oconto County, WI**

About 55 percent of Oconto County is woodland, which supports an extensive lumber and wood-products industry. This industry manufactures paper products, plywood and veneer, furniture, and lumber for building. The production of maple syrup is a seasonal enterprise of local importance in Oconto County.

Several of the town's woodland areas, particularly west of USH 41, are owned by Oconto County and the Wisconsin Department of Natural Resources. They are used extensively for hunting (waterfowl, deer, grouse, and other small game) and non-hunting activities including birding, hiking, and

fishing. These lands are of critical importance to the tourism industry in Oconto County.

### Wildlife Habitats

The most recent comprehensive habitat information for the Town of Little River is available from a Fish and Wildlife Habitat Study that was prepared by the WDNR in 1976. In this study, habitat areas were identified as top, medium, or low quality according to the capability of supporting various types of wildlife habitat. All habitat areas considered most desirable for wildlife in



the Town of Little River coincide almost exactly with the areas zoned as “forest” in the Town of Little River.

### **Metallic and Non-Metallic Mining Resources**

The Town of Little River does have an area of valuable non-metallic mining resources located in the southwestern corner of the town. Currently, one sand and gravel quarry operation exists in this area.

### **Soils**

Soils support the physical base for development and agriculture within the town. Knowledge of their limitations and potential difficulties is important in evaluating crop production capabilities and other land use alternatives, such as residential development.

There are three soil associations (grouping of individual soil types based on geographic proximity and other characteristics) within the Town of Little River: Onaway Solona, Seeleyville-Markey, and Wainola-Cormant.

The majority of the soils in the town are of the Onaway-Solona association. Most areas of this soil association are used for cultivation. Some areas are used as pasture or woodland. Onaway soils are nearly level to very steep and are well drained. They are moderately permeable. The available water capacity is high. Solona soils are nearly level and gently sloping and somewhat poorly drained. They are moderately permeable and the available water capacity is moderate. The Solona soils are poorly suited to residential development because of the seasonal high water table. Most Onaway soils and adequately drained areas of the Solona soils are suited to crops. Water erosion and wetness are the main management concerns.

Some Seeleyville-Markey soils are found in sections 14, 15, 22, 22, and 23 of the town. Characteristics of this association include a tendency to be nearly level, poorly drained, rapidly permeable, and mucky. Most areas of the Seeleyville-Markey association are undrained and support woodland or wetland vegetation. These soils are generally unsuitable for residential development, septic tank systems, and have a short growing season inhibiting agricultural uses.

The other soil association found in the town is the Wainola-Cormant association. Both Wainola and Cormant soils are rapidly permeable and have a low water capacity. Wainola soils are nearly level to gently sloping and somewhat poorly drained. Cormant soils are nearly level and are classified as poorly drained and very poorly drained. The Wainola-Cormant association is found along the Lake Michigan shoreline in the Town of Little River. Several homes are located in this area, but the soils present limitations due to the seasonably high water table, ponding tendency, and wetness. Obviously, these soil limitations have not prohibited development, but these conditions indicate that more extensive construction measures must be taken to prevent environmental and property damage.

### **Soil Erosion**

Soil erosion is a concern not only because of reduced productivity on the land, but also because of the introduction of eroded soil into the air (windborne erosion) and surface water bodies. Sediment reaching rivers or lakes may need to be dredged to provide safe boating, but more importantly it reduces aquatic habitat. In addition, nutrients and pesticides attached to soil

particles have an adverse affect on water quality. Soil erosion is mainly a concern closely tied to development along the shores of Lake Michigan and the Little River in the town.

The maximum acceptable rate of soil loss, or soil tolerance, for a particular soil is referred to as the “T-value.” This value represents the maximum rate of soil erosion tolerable to maintain a high level of crop production indefinitely. It should be noted that the “T” value is directly related crop production, but not to water quality. While a certain amount of loss and be tolerated without adversely affecting production, the same amount of soil can still have an adverse effect on water quality. In 1987, the Oconto County Erosion Control Plan was developed to reduce soil erosion throughout the county to 3 tons per acre per year (T/A/Y). This plan divided Little River into 2 segments. In both portions of the Town, the T/A/Y goal was met. The average T/A/Y of soil lost to erosion in the eastern portion of the Town of Little River was 1.03. The T/A/Y in the western portion of the Town of Little River was 1.51. More current information is not available to determine whether or not the estimated soil loss has decreased since 1987.

### ***Current Policies/Trends***

#### **County Zoning**

The Town of Little River, like other towns in Oconto County, is regulated by the Oconto County Zoning Ordinance. Therefore, land uses within the town, including agricultural and natural areas must adhere to the zoning requirements (bulk, height, density, etc.) stipulated in the Oconto County Zoning Ordinance.

The Town of Little River does have village powers under WI Stats. Chapter 60, Sec. 60.62. This allows the town to adopt its own zoning regulations, provided they are at least as restrictive than the provisions of the Oconto County Zoning Ordinance. The town has not yet used its village powers to develop its own zoning or subdivision ordinances.

#### **Shoreland/Floodplain Zoning**

Shorelands and floodplains are often viewed as valuable recreational and environmental resources. These areas provide for storm water retention and habitat for various type of wildlife. Development that is permitted to take place in these areas may have an adverse effect on water quality, wildlife habitat and stormwater drainage. In addition, it may also result in increased development and maintenance costs when providing for protection from the occurrence of flooding and high water, increased flood insurance premiums, extensive site preparation, and maintenance and repairs of roads and sewers.

As a result, the State of Wisconsin requires that counties adopt shoreland/floodplain zoning ordinances to address the problem associated with development in these areas. Development in shoreland areas is generally permitted, but specific design techniques must be considered. Development in floodplain areas is strictly regulated and in some instances, not permitted. The authority to enact and enforce these types of zoning provisions is set forth in Chapter 59.97 of the Wisconsin Statutes and Wisconsin Administrative Codes NR115.116 and 117 and is established in the Oconto County Zoning Ordinance, Section 14.

Oconto County is currently administering its Shoreland/Floodplain Ordinance in unincorporated areas. The jurisdiction of the ordinances include shoreland and navigable waters of the county

which are 1,000 feet from the normal high water elevation of a lake, pond, or flowage; and 300 feet from the normal high water elevation of a river or stream, or to the landward side of a 100 year floodplain boundary.

### **Environmentally Sensitive Corridors**

In 1999, the Bay-Lake Regional Planning Commission completed a pilot project to define and delineate environmental corridors for two counties within the Bay-Lake Region and examine the role of these corridors in local land use planning. Upon completion of this study, the Commission reviewed the criteria used in the study and defined a set of features that will be used for consistently delineating environmental corridors in all of its land use planning work. The Commission has defined its environmental corridors to include the following set of data:

- Wisconsin Department of Natural Resources wetlands;
- 100-year floodplains;
- Areas with slopes greater than or equal to 12 percent;
- Lakes, rivers, streams and ponds;
- A 75-foot lake and river setback; and
- A 25-foot buffer around wetlands.

### ***Vision***

*It is the vision of the Town of Little River that the community will retain its rural character by continuing to enjoy a strong farming tradition through 2020. Natural resources will be protected and serve as an environmental, recreational, and economic asset to the Town. Residential and commercial development will be in harmony with the Town's natural environment. Little River will support the continued efforts of neighboring communities, school districts, Oconto County, and the State of Wisconsin, which provide cultural and historic resources which can be used by residents of the Town of Little River. The Town will also work, in accordance with the Intergovernmental Coordination Requirement of the Wisconsin "Smart Growth" Law, with neighboring communities, Oconto County, the Bay-Lake Regional Planning Commission and the State of Wisconsin to ensure that natural resources are protected.*