

Agricultural, Natural and Cultural Resources

Major Findings

- ❑ For optimal crop production, approximately 55% of the town's soils require drainage or flood protection during most years.
- ❑ Future development plans will need to incorporate the protection of environmentally sensitive areas, including woodlands, waterways, floodplains and wetlands.
- ❑ Much of the town that is zoned as exclusive agriculture is enrolled in the Farmland Preservation program.
- ❑ The WDNR and the U.S. Army Corps of Engineers has authority over the 704 acres of wetland in the Town of Friendship. The Fond du Lac County Shoreland Ordinance regulates land use along navigable streams and the lakeshore.

Recommendations

- ❑ The Town should be proactive in working with state, county, and other pertinent agencies in reducing sediment and nutrient loads into Lake Winnebago from the Fond du Lac River/Winnebago West Watershed.
- ❑ To help protect its groundwater resources, the Town should be active in identifying and properly abandoning old and unused wells and failing septic systems.

Goals, Objectives, and Program

Goal #1

- ❑ Continue to maintain the Town's rural character through the preservation of agriculture and minimize land use conflict.

Objective

1. **Code Enforcement** Preserve agriculture as the primary land use in Friendship through the enforcement of State, Federal, County and Town regulations.
2. **Ordinance updates** Implement the Town's Land Use Plan by adding restrictions on the maximum size of new residential lots in the Town's Zoning Ordinance.
3. **Density Ordinance** Consider a density ordinance that limits the amount of development in exclusive agricultural districts.
4. **Protection of Environmental Corridors** The Town of Friendship will work with Fond du Lac County to enforce shoreland-wetland ordinances designed to protect environmental corridors from development.

Program

- ❑ **Farming Programs** The Town will encourage farmers and agricultural landowners to become involved in, or continue participation in, state and federal programs that financially support farm production.

Goal #2

- ❑ Reduce or eliminate the potential for land use conflicts between farm and non-farm uses and with the natural environment.

Objectives

1. **Document Notification** Prepare an ordinance that requires a residential Certified Survey Map or subdivision that abuts active farmland to include language on the recorded CSM or plat warning potential buyers of the implications of living next to such operations.
2. **Public Notification** Design a pamphlet that informs newcomers they are moving to a farming community that will include the noise of animals and farm equipment, odors associated with farming operations, and slow moving farm equipment on public roads.
2. **Preserving Large Agricultural Parcels** Larger agricultural parcels are to be maintained, if possible, when siting any new development in an agricultural area.
3. **Maintaining Wetland Buffers** When possible, utilize existing wetlands as buffers between uses and as natural habitats for wildlife.
4. **Preserving Woodlands as Resource Areas** Preservation of woodlands as groundwater recharge and erosion control areas should be encouraged whenever feasible.

Background Information

Agricultural Resources

Prime Farmland

- ❑ Map 4, Prime Farmland, shows four classifications of farmland based on soils.
- ❑ Approximately 55% of the town's soils require drainage or flood protection during most years for optimal crop production.
- ❑ Consideration should be given to preserving the areas of 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, construction of pipelines, or the building of wastewater treatment plants, for example.

- ❑ More information about this program can be found at:
www.datcp.state.wi.us/arm/agriculture/land-water/ag-impact-stmts/doc_info.jsp

Drainage District Program

- ❑ The Department of Agriculture, Trade, and Consumer Protection regulates the drainage district program. The department has regulated the program since 1989.
- ❑ Several drainage districts are present in Fond du Lac County, but none are found in the Town of Friendship.
- ❑ More information on this program can be found at:
www.datcp.state.wi.us/arm/agriculture/land-water/ag-impact-stmts/drainage_district.jsp.

Farmland Preservation Plan

- ❑ This program assists in preserving Wisconsin's valuable farmland by assisting counties in the creation of agricultural preservation plans through the formation of exclusive agriculture zoning districts.
- ❑ Landowners enrolled in the plan receive a state income tax credit.
- ❑ Much of the town that is zoned as exclusive agriculture is enrolled in this program. Further information about Fond du Lac County's Farmland Preservation Plan can be gained from these two websites: www.fdlco.wi.gov/Index.aspx?page=299 and www.datcp.state.wi.us/arm/agriculture/land-water/conservation/farmland_pres.jsp

Natural Resources

Refer to maps in the back of the Plan

- ❑ Natural resources within the Town of Friendship are an important factor in the consideration of future uses of the land. The management and preservation of these resources is important for providing environmental benefits, sustaining economic uses of the land, and maintaining the quality of life enjoyed by the town's residents.
- ❑ Environmental characteristics, including topography, drainage patterns, floodplains, wetlands, and soil properties are among the features that determine whether an area is suitable for a specific type of development.
- ❑ Future development plans need to incorporate the protection of environmentally sensitive areas, such as woodlands, waterways, floodplains and wetlands.
- ❑ The Town should be proactive in working with state, county, and other pertinent agencies in reducing sediment and nutrient loads into Lake Winnebago from the Winnebago West Watershed.
- ❑ To help protect its groundwater resources, the Town should be active in identifying and properly abandoning old and unused wells and failing septic systems.
- ❑ The Town should consider developing a strategy to decontaminate and redevelop potential brownfield sites.

State Natural Areas

- ❑ State Natural Areas (SNAs) protect significant landscape features, geological formations, and archeological sites. These areas are valued primarily for research and educational purposes while protecting rare and scarce plants and animals. Site protection is provided by land acquisition, donations, conservation easements, and cooperative agreements.
- ❑ Fond du Lac County currently has nine SNAs. The closest SNA to Friendship is the Friendship Railroad Prairie, a ten-acre remnant of mesic and wet-mesic prairie that houses a large population of the state threatened prairie parsley (*Polytaenia nuttallia*).

- ❑ Friendship Railroad Prairie is owned by the WDNR and is currently managed by Fond du Lac County.
- ❑ For more information on SNAs go to www.dnr.state.wi.us/org/land/er/sna/index.htm.

Public Parkland (see Map 9)

- ❑ Highway 45 Wayside Park is approximately eight acres in size, and is located on the west shore of Lake Winnebago about three miles north of Fond du Lac. Facilities at the park include parking, toilets, a picnic shelter, grills and tables, and a four-lane launch and breakwater built in 2005 to provide a harbor of refuge.

Public Wildlife Recreation Land

- ❑ The WDNR acquires and manages public lands that provide opportunities to hunt, fish, hike, canoe, or view wildlife.
- ❑ The DNR has divided the state into five regions for public land management purposes. Fond du Lac County is part of the northeast region and has two wildlife areas. The closest to Friendship is the Eldorado Wildlife Area. This site contains 6,371 acres of state-owned hunting land that includes brush, grass, marsh, and woodlands. In addition to hunting, Eldorado Wildlife Area provides opportunities for dog training, snowmobiling, boating, and fishing.
- ❑ Each area has unique wildlife, recreational opportunities, and physical features. Likewise, each area has special rules and terms of use that require strict adherence to. Persons utilizing these areas can find specific information at:
<http://www.dnr.state.wi.us/org/land/wildlife/reclands/northeastmap.htm>

Topography (see Map 3)

- ❑ The topography of the Town of Friendship is relatively flat through the center of the town (going south to north).
- ❑ The lowest point is along Lake Winnebago, where the elevation is 748 feet above sea level. The highest points are along the western edge of the town, where elevations are approximately 835 feet above sea level. The difference between the highest and lowest elevations in the town is approximately 87 feet.
- ❑ In general, most of the town's topography is nearly level (0-2% slopes) to gently sloping (2-6% slopes).

Geology

- ❑ Friendship's current landscape was largely influenced by the Valdres ice sheet of the Green Bay lobe, during the Wisconsin glaciation, and is situated in what is known as the Green Bay-Lake Winnebago-Rock River Lowland.
- ❑ Thick sandstone beds lie underneath a cap of gray dolomite under the area now occupied by Friendship. These sandstone beds house a large groundwater aquifer.

Soils

- ❑ The town is located in an area that is comprised of the Kewaunee-Manawa-Poygan soil association. This soil association varies from well drained to poorly drained, and is typically silty and clayey.
- ❑ Most of the soils in the town have high shrink/swell potential and low percolation rates. Manawa and Poygan soils often have a seasonally high water table that ranges from 0-3 feet below the soil surface.
- ❑ These soil traits should be taken into account for the design and planning of buildings, roads, and infrastructure.

Surface Waters, Wetlands, Floodplains, and Watersheds (see Map 1)

- ❑ Water-related resources are highly regulated. Local, state and federal regulations and ordinances need to be thoroughly reviewed when development is proposed for property that is in or near any of these resources. This is especially important as navigable waterways and mapped wetlands are scattered throughout the town, and portions of the town are located in areas that are susceptible to flooding events.

Surface Waters

- ❑ This link leads 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>
- ❑ Friendship is situated on the west shoreline of Lake Winnebago, a water body that is classified by the WDNR as "An Area of Special Natural Resource Interest" (ASNRI). An ASNRI is an area that may have special sensitivity or is of ecological significance.
- ❑ Three other water bodies within the town have been classified as Priority Navigable Waterways (PNWs). These are all unnamed lakes less than fifty acres in size.
- ❑ According to the WDNR's Surface Water Data Viewer, approximately eighteen navigable waterways are found in the town. These waterways include Clamshell Creek, the West Fork of Clamshell Creek, Poplar Creek, Anderson Creek, Van Dyne Creek, and Mosher Creek, along with their associated tributaries. All of these waterways discharge into Lake Winnebago.

Watersheds

- ❑ The Town of Friendship is within the Fond du Lac River Sub-watershed, which is located within the Upper Fox River Drainage Basin. This watershed has been selected as a priority watershed due to the high sediment and nutrient loads its streams discharge into Lake Winnebago.
- ❑ WDNR drainage basin mapping can be found at: <http://dnr.wi.gov/org/gmu/stateofbasin.html>

Floodplains

- ❑ Portions of the town are susceptible to flooding. According to the Federal Emergency Management Agency (FEMA) flood rate map produced for the town, these areas are located along the town's main waterways, including the above-named waterways, and several unnamed waterways.
- ❑ Future development in and around these areas needs to be restricted.
- ❑ Building can occur between the floodway and flood fringe if the lowest first floor elevation is two feet above the 100-year flood elevation, or the basement is floodproofed.

Wetlands

- ❑ Approximately 704 acres of wetland exist within the town. Some of the wetland areas are associated with the water courses that flow through the town, but others appear to be located in topographic lows that have poor drainage.
- ❑ This link (www.dnr.wi.gov/org/water/fhp/wetlands/programs.shtml) is a useful point of reference for community officials, developers, and/or interested persons to gain direction with wetland questions related to development projects or protection issues. The web page provides links to specific administrative rules, discussions on wetland laws and programs, and other wetland issues.
- ❑ Development in wetlands can destroy important environmental benefits, including the filtering of stormwater runoff and the provision of habitat for wildlife.
- ❑ The WDNR and the U.S. Army Corps of Engineers have regulating authority over all wetlands, including the placement of fill materials within a wetland. In general, the most restrictive regulations (WDNR or Corps of Engineers) apply in a situation where

development is being proposed. The U.S. Department of Agriculture incorporates wetland preservation criteria into its crop price support program.

- ❑ Fond du Lac County has a shoreland-wetland zoning ordinance that should be consulted prior to any development around navigable waters and wetlands.

Groundwater (see Map 6)

- ❑ The protection of groundwater is especially important to the town's residents because 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 of the potable groundwater supply.
- ❑ The Well Abandonment Cost Share Program information, published by Fond du Lac county states, "Old and unused wells are a significant threat to the groundwater quality of Fond du Lac County. Old wells can develop cracks in their casing that can allow contaminants to seep down directly to groundwater resources. Old and unused wells can also pose a significant safety threat to people, pets, or other animals."
- ❑ As the demand on groundwater aquifers has increased due to development, the level of groundwater has been dropping throughout Wisconsin, requiring wells to be drilled deeper and deeper. This is not a local issue, but a regional one that will require many units of government to come together to address.
- ❑ The primary recharge area for Friendship's groundwater aquifer is located west of the town's jurisdictional boundary. This indicates that land use actions that take place outside of the town's jurisdiction may affect its groundwater supply.
- ❑ According to the state's Groundwater Susceptibility Map, the town is located in an area deemed to be somewhat susceptible to groundwater contamination because of relatively shallow depths to bedrock and groundwater (less than fifty and twenty feet, respectively). These two characteristics are often found in areas that are highly susceptible to groundwater contamination, but the low permeability and fine texture of the town's soils act as a protective buffer against potential groundwater pollutants, which is why the town is only considered somewhat susceptible to groundwater pollution.
- ❑ Approximately 33% of private wells in the region surrounding Fond du Lac County contained detectable levels of herbicides. Pesticide contamination occurs most commonly in agricultural areas.
- ❑ The primary potential pollution sources to the town's groundwater are likely to be leaking underground storage tanks, failing septic systems, and old and unused wells.
- ❑ More information regarding groundwater that is specific to Fond du Lac County can be found at <http://wi.water.usgs.gov/gwcomp/integrate/develop.html>
- ❑ 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 www.dnr.wi.gov/org/water/dwg/gcc/index.htm

Woodlands (see Map 1)

- ❑ Development in woodlands can destroy important environmental benefits to the community.
- ❑ Wooded areas in the town provide habitat for wildlife and serve as an aesthetic amenity.
- ❑ Few woodlands are found within the town limits. What woodlands there are are found along stream corridors or in wetland areas.
- ❑ Woodlands should be preserved whenever possible.

Environmentally Sensitive Areas

- ❑ 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 are environmentally sensitive: 1) Navigable waters with a 75-foot buffer, 2) non-navigable waters with a 15- to 30-foot buffer, depending on the drainage area, 3) WDNR wetlands with a 75-foot buffer, and 4) FEMA floodplains.

Metallic and Non-Metallic Mineral Resources

- ❑ There are no active non-metallic operations in the Town of Friendship.
- ❑ 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/.

Wildlife Habitat and Threatened and Endangered Species (see Map 7)

- ❑ 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 WDNR at www.dnr.state.wi.us/org/land/er/.
- ❑ Occurrences of rare aquatic species are indicated in the southeast corner of the town, along the shore of Lake Winnebago.

Air Quality

- ❑ The air quality monitoring station nearest to the Town of Friendship is located in the City of Fond du Lac. Fond du Lac County currently meets all air quality attainment requirements.
- ❑ The Town of Friendship should be active in the political process in which counties are designated as attainment or non-attainment.
- ❑ More information on air quality is available at 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. According to the State Register of Historic Places, no historic properties have been identified in the Town of Friendship.
- ❑ 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/

Architecture and History Inventory

- ❑ A search of the DHP's on-line Architecture and History Inventory (AHI) revealed 26 historic sites within the Town of Friendship (see Appendix).
- ❑ This information can be found by contacting the DHP at (608) 264-6500 or at www.wisconsinhistory.org/ahi.
- ❑ The Town of Friendship should be proactive in helping to preserve the properties that are listed in the Architecture and History Inventory.

Community Design

- ❑ Community design in the Town of Friendship should focus on identifying what rural residential development will look like and how it can be compatible with the natural environment.
- ❑ 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 the lakefront, 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 Friendship 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 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 the natural environment.
- ❑ The challenge in developing and implementing community design standards and guidelines is that 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.