

CHAPTER 2: Natural Resources

2.1 Background

This second chapter is based on the statutory requirement for a "compilation of objectives, policies, goals, maps, and programs for the conservation, and promotion of the effective management, of natural resources such as groundwater, forests, productive agricultural areas, 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."

The Comprehensive Planning Legislation also establishes 14 state planning goals. Of these 14 goals, three relate directly to this chapter. These goals are:

- 1) Protection of natural areas, including wetlands, wildlife habitats, lakes, woodlands, open spaces, and groundwater resources.
- 2) Protection of economically productive areas, including farmland and forests.
- 3) Preservation of cultural, historic, and archaeological sites.

Two other planning goals relate to community design, which is part of this element and the Land Use element. These goals are encouragement of neighborhood designs that support a range of transportation choices; and building of community identity by revitalizing main streets and enforcing design standards.

A. Previous Studies

Several plans are reviewed as they relate to natural, agricultural, and cultural resources. These plans provide a starting point for the planning process.

City Plans:

1. Sewer Service Area Plan, 1985

The purpose of this plan is to develop a twenty-year sanitary sewer service boundary for the Wisconsin Rapids urban area. The urban

sanitary sewer service area boundary identifies the geographic land area within which sanitary sewer service could be made available by the year 2005 through a cost-effective, environmentally acceptable manner. In addition to delineating an urban sewer service boundary, the Sewer Service Area Plan provides a framework for future planning at each individual municipal level. This plan needs to be updated and made current.

The goals and policies developed throughout this planning process will also be applicable and useful in the development of local policy direction with respect to land use.

Thus, the Sewer Service Area Plan will serve the following overall purposes:

- 1) It establishes the geographic boundaries for possible sanitary sewer service to the year 2025.
- 2) It provides a technical basis to anticipate future needs for wastewater collection and centralized treatment facilities for the palling area;
- 3) It establishes an institutional structure for reviewing boundary and plan amendments and for approving sewer extensions and expansions of sewage treatment plants;
- 4) It serves as a guide for community officials as they make land development decisions within their respective communities;
- 5) It identifies areas to be protected from development by designating them as environmentally sensitive areas. Such areas will control and direct the growth of communities in order to protect environmental, social, and economic concerns; and
- 6) The plan will become a component of the Wisconsin River Basin Water Quality Management Plan.

2. City of Wisconsin Rapids Parks & Recreation Plan, 2000

The purpose of the outdoor recreation plan is to develop a 5-year plan to meet the current and future recreational needs of residents. The plan inventories the City's numerous parks and other recreational facilities, examines population growth and patterns, and proposes additional recreational needs.

Adoption of this plan allows for continued eligibility for financial assistance from the Land and Water Conservation Fund (LAWCON), the Stewardship Fund, and many other federal and state funding programs.

This plan expired in 2005, and is currently being updated by the NCWRPC.

3. Wisconsin Rapids Comprehensive Plan, 1981

The city's planning department developed this plan. At that time, the city had a population of 17,995 and a land area of 11.4 square miles. The plan set forth many policy guidelines, including five major goals. These goals are to provide a safe, healthy, and pleasant living environment; encourage the economic development of the city and the region; provide a safe, adequate traffic system; provide aesthetic, cultural and recreation opportunities; and prevent the creation of incompatible land use association, urban sprawl, and other problems resulting from improperly-directed developments.

County Plans:

1. Wood County Land & Water Resource Management Plan, 2007

The current Land & Water Resource Management Plan is a compilation of some significant legislative changes and planning efforts that have occurred at both the state and county level since the original plan was approved in 1999.

Six priority concerns were identified in this plan. They are: Land spreading issues, animal, human, fertilizer, municipal; Monitoring of surface water quality, municipal discharge, cooperation between agencies affecting quality; Declining grassland habitat (prairie chicken) fragmentation; Loss of wetlands; Loss of agricultural land; and Soil erosion, agricultural, highway, and construction.

The plan also developed seven goals to address these priorities:

- Reduce sediment delivery to surface waters of Wood County
- Reduce animal waste and nutrient delivery to surface waters
- Reduce crop damage caused by wildlife
- Protect and develop wetland and uplands for wildlife habitat
- Increase efforts to inventory the water resources
- Minimize the adverse effects of urban sprawl and land fragmentation in rural Wood County
- Improve air quality

2. Wood County Forest Comprehensive Land Use Plan, 2007

This fifteen-year plan was developed by the county to manage the vast county forest. The plan strives to balance the local needs with broader state and national concerns through the integration of sound forestry, wildlife, fisheries, endangered resources, water quality, soil, and recreational practices.

The county manages about 37,500 acres of forestland throughout the county.

B. Natural Resource Issues

Several issues were identified, listed below in no particular order:

- ✓ Maintain environmental standards while continuing growth in the community.
- ✓ Plan to update the Sewer Service Area Plan upon completion of the wastewater treatment facility expansion.
- ✓ Maintain and protect the community's riverfront and utilize the natural resource as a community asset to be enjoyed by all.
- ✓ Assess stabilizing the riverbank in the downtown area to prevent further deterioration of the existing retention wall.
- ✓ Identify ownership of islands in the Wisconsin River within the community and develop a land use plan specific to the islands.
- ✓ Identify wetlands in the community and ensure that land uses adjacent to delineated wetlands are appropriate.

2.2 Inventory & Trends

A. Physical Landscape

All plans must consider the natural environment in which a community exists. Understanding the physical landscape is critical to the growth of a community. Natural restraints and environmental issues need to be identified to plan properly. This section of the plan overviews the local climate, area topography, and soil types.

1. Climate

Winters are very cold, and summers are short and warm. Precipitation is fairly well distributed throughout the year, reaching a peak in summer. Snow covers the ground during much of the period from late fall through early spring. Annual precipitation is about 31 inches.

The soils occasionally freeze to a depth of several feet when very cold temperatures occur before the ground is appreciably covered with snow. The soils usually freeze to a depth ranging from the top few inches to about one foot.

2. Topography

Wood County is in two ecological regions of Wisconsin. South Wood County and Wisconsin Rapids are in the Central Sands Plains. The landscape is relatively flat, and slopes are mostly long and smooth.

3. Soils

Area soils are related to the physical geography, climate, and vegetation. Most of the soils in the area are formed in glacial till, residuum, or glacial outwash. See the 1977 Natural Resource Conservation Service Soil Survey of Wood County for more information. Generally, the soils in the city have few limitations for buildings with basements.

Human activity also affects soil formation by altering and accelerating natural soil processes. Clearing, burning, cultivating, and urbanization thereby affecting soil structure, porosity, and content of nutrients have altered many soils.

4. Contaminated Sites

According to the DNR Remediation and Redevelopment Tracking System (BRRTS), there are 158 listed sites in the city. This is typical of most cities where commercial and industrial development has existed over

long periods of time. These types of land uses, especially historically, have the potential for air emissions, groundwater contamination, soil spills, and surface water contamination. Many of these sites include old gasoline station tanks.

There is one closed Abandoned Container (AC) site, 106 closed Leaking Underground Storage Tank (LUST) sites, 10 open Leaking Underground Storage Tank sites, 30 closed Environmental Repair (ERP) sites, 10 open Environmental Repair sites, and one conditionally closed Environmental Repair site.

B. Water Resources

A major component of the natural environment is water, including surface water, wetlands, floodplains, and groundwater. See the Natural Resources Map.

1. Surface Water

Wisconsin Rapids is split by the Wisconsin River. The east side of city is located in the Fourmile and Fivemile Creek Watersheds, while the west side is located in the Wisconsin Rapids watershed. Both watersheds drain into the Wisconsin River.

2. Wetlands

Wetlands perform indispensable roles in the proper function of the hydrologic cycle and local ecological systems. In terms of hazard mitigation, they act as water storage devices in times of high water. Like sponges, wetlands are able to absorb excess water and release it back into the watershed slowly, preventing flooding and minimizing flood damage. As more impermeable surfaces are developed, this excess capacity for water runoff storage becomes increasingly important.

Wetland plants and soils have the capacity to store and filter pollutants ranging from pesticides to animal wastes. Calm wetland waters, with their flat surface and flow characteristics, allow particles of toxins and nutrients to settle out of the water column. Plants take up certain nutrients from the water. Other substances can be stored or transformed to a less toxic state within wetlands. As a result, our lakes, rivers, and streams are cleaner, and our drinking water is safer.

Wetlands that filter or store sediments or nutrients for extended periods may undergo fundamental changes. Sediments will eventually fill in wetlands, and nutrients will eventually modify the vegetation. Such changes may result in the loss of this function over time. Eradication of

wetlands can occur using fill material. This can destroy the hydrological function of the site and open the area to improper development. The Wisconsin Department of Natural Resources (DNR) has promulgated minimum standards for managing wetlands.

3. Floodplains

A floodplain is generally defined as land where there is a one percent chance of flooding in any year (also known as the 100-year floodplain). The primary value of floodplains is their role in natural flood control. Floodplains represent areas where excess water can be accommodated, whether through drainage by streams or through storage by wetlands and other natural detention/retention areas. Specific areas that will be inundated will depend upon the amount of water, the distance and speed that water travels, and the topography of the area. If uninterrupted by development, the areas shown on a map as floodplains should be able to handle the severest regional flood, i.e. those that have a probability of occurring once every one hundred years.

There is a value in preserving and protecting these natural flood control areas from encroachment. First, by preventing development in the floodplain, the cost of building dikes, levies, or other man-made flood control devices will be saved. Second, for each structure that is constructed in a flood-prone area, that flood-prone area expands, potentially subjecting other structures originally built outside the delineated flood hazard area to the risk of flooding. Each new structure, or modification to an existing structure, placed in the floodplain, puts more life and property in danger.

Counties, cities, and villages are required to adopt reasonable and effective floodplain zoning ordinances. Floodplain zoning is designed to protect individuals, private property, and public investments from flood damage. These regulations prohibit development in the floodway, the most dangerous flood area. In order to participate in the Federal Emergency Management Agency's (FEMA) National Flood Insurance Program, the county and city have completed a Flood Insurance Study and a Flood Insurance Rate Map (FIRM) that encompasses Wood County. This FIRM delineates the "A" Zones including the floodway and flood fringe which are those areas inundated by the 100-year flood within the county.

Floodplains occur along the Wisconsin River where levees are in poor condition. Flooding has occurred during periods of exceptionally heavy rainfall. Currently, there are no repetitive loss structures, meaning those with multiple flood insurance claims, in Wood County.

4. Groundwater

The groundwater in the Wisconsin Rapids area meets municipal and industrial needs. Well water is available at various depths, depending on the general topography, the distance above permanent stream levels, and the character of the underlying aquifer. All of the wells are relatively shallow, gravel packed, and screened, and terminate in the glacial drift. The productive areas of the drift consist of sand and gravel underlain by granite bedrock. This productive layer varies significantly in thickness from place to place in the city. The municipal wells are located over ancient valleys in the granite bedrock, therefore the sand and gravel deposited by glaciers in these valleys is the source of the well's supply.

Overall, groundwater quality is good. Local differences in quality are the result of the composition, solubility, and surface area of the soil and rock through which the water moves and the length of time that the water is in contact with these materials. Some of the surrounding area is susceptible to groundwater contamination. This is most likely to occur where fractured bedrock is near ground surface, or where only a thin layer of soil separates the ground surface from the water table.

C. Woodlands

Significant tracts of woodland exist within the planning area. These forested areas are primarily associated with streams, and wetlands. Forest cover provides many vital functions, which are diverse in nature; forested lands provide for recreational opportunities, scenic beauty, and wildlife habitat as well as protection of sensitive environmental areas. Regulation of the removal of woodland plant material is desirable to protect scenic beauty, to control erosion, and to reduce effluent and nutrient flows into surface waters.

Tree cover is essential, especially for erosion control and to reduce effluent and nutrient flows into surface water bodies and courses. Woodland cover is further addressed in the land use chapter of the plan.

D. Rare Species & Natural Communities

The City of Wisconsin Rapids and nearby towns have five sections with occurrences of aquatic and terrestrial plants, animals, and/or natural communities of endangered status as identified in the Wisconsin Natural Heritage Inventory. One section has aquatic occurrences, one section has terrestrial occurrences, and three sections have both. Each section identified may have several different species or just one species. See Map 2-2.

Wisconsin's biodiversity goals are to identify, protect, and manage native plants, animals, and natural communities from the very common to critically endangered for present and future generations. Knowledge, appreciation, and stewardship of Wisconsin's native species and ecosystems are critical to their survival and greater benefit to society. The latest inventory of potential and existing natural spaces that complement biodiversity goals are in the Land Legacy Report prepared by the DNR in 2006.

E. Agriculture

Wisconsin Rapids does not have any active farms or agricultural lands within the city. The surrounding towns have areas that are devoted to agricultural uses.

F. Recreational Resources

The Wisconsin Rapids area park and recreation system consists of several parks and a zoo. Information that is more detailed will be included in the updated Outdoor Recreation Plan. Park facilities are also discussed in more detail in the Utilities & Community Facilities chapter of this plan.

G. History & Cultural Assets

1. History

Wood County was established in 1856 and is named after Joseph Wood, a state legislator and judge. The area had originally been part of Portage County. The nationality of original settlers is diverse and includes Norwegians, Danish, Swedish, German, Polish, and Irish.

The following is a historical summary provided by the local historical society:

River City: Extractive 1800s

In the early 19th Century, Grand Rapids, predecessor of Wisconsin Rapids, was well positioned. Here, canoe travel on the Wisconsin River was interrupted for a walk-around, or "portage," making it a good place for commerce to begin.

With the organization of Wisconsin Territory in 1836, lumbermen built water-powered sawmills and sent rafts of boards and shingles downstream to market.

Hardwoods and the less-marketable of conifers replaced the depleted white pine as a raw material, enabling pulp mills and wood products manufacturers to supplant sawmills. Flour mills and a brewery also took their place along the Wisconsin River.

The villages of Grand Rapids, on the east bank, and Centralia on the west, closely imitated the homes from which their founders came, notably upstate New York. Immigrants who followed, some directly from Europe, established full or part-time dairy farms, especially north of the river. In the southwest bogs, commercial growing of cranberries burned out and was reestablished late in the 19th century.

Paper City: Industrial 1900s

In 1900, Grand Rapids and Centralia merged as “Grand Rapids,” a name to be changed in 1920 to “Wisconsin Rapids.” It was still all about the river as sawmills and relatively-new pulp mills were replaced by paper mills. Located in downtown Rapids, was the first and only headquarters of locally-owned and operated Consolidated Water Power & Paper Co., for several decades the world’s leading producer of enamel-coated printing paper.

Just to the south, also on the Wisconsin River, was Nekoosa-Edwards Paper Co., headquartered at its Port Edwards mill, with a similar mill at Nekoosa. For the most part, Nepco was, like Consolidated, locally owned and operated.

Numerous smaller manufacturers were not dependent on a riverside location. “Consoweld” combined paper and resin in countertop laminate and “Preway” made and marketed stoves and other appliances. At the east end of the Consolidated dam, Sampson’s canning company occupied the old Lutz brewery.

Largely because of its industrial base, Wisconsin Rapids became a hub for four railroads and two major trucking firms, Central Wisconsin Transport and Gross Brothers.

Shoppers supported a busy downtown on West Grand Avenue and on the East Bank. The local department store, Johnson Hills, expanded into similar locations in other cities. Entertainment was provided at three movie theaters in town and an “outdoor” on south Highway 13. Headlining a long list of taverns and restaurants were Wilbern’s on 8th Street South and Hotel Mead on Grand Avenue. Sports, entertainment, and education thrived as, in mid-century; the 1931 Lincoln field house was second only to that at the University of Wisconsin, and the 1970 McMillan Memorial Library stood as monument to culture.

A full complement of Protestant and Catholic churches was established and, for a short time, a Jewish synagogue.

The Grand Mall: Post-Industrial New Millennium

Being “River City” wasn’t what it used to be. No longer a transportation hub, the area has been bypassed by several major highways. In the 1980s, Preway, Consoweld, and both trucking companies closed. As Consolidated and Nepco were absorbed into multi-national companies, main offices were eliminated, employment was reduced, and the Port Edwards mill was shut down.

Meanwhile, commerce moved from the “old downtown” along the river to the nearby enclosed Rapids Mall and further, to the “8th Street” strip, both competing with more robust developments at Plover and Stevens Point, 15 miles to the east.

Despite the economic setbacks, Wisconsin Rapids, seat of Wood County, continues to be above average in its school system, cultural centers, historical societies, civic organizations, and city government, and is the unofficial world headquarters of cranberries.

In step with the times are Renaissance Learning, an educational software developer, and Solarus, the local telephone company become digital provider. NewPage and Domtar continue to employ large labor forces at their local paper mills.

2. Cultural Assets

Currently, over 250 structures in the City of Wisconsin Rapids are listed on the Wisconsin Architectural History Inventory (WAHI). The WAHI documents a wide range of historic properties that create Wisconsin’s cultural landscape. The National Register is the official national list of historic properties in American worthy of preservation, maintained by the National Park Service. The State Register is Wisconsin’s official listing of state properties determined to be significant to Wisconsin’s heritage and is maintained by the Wisconsin Historical Society Division of Historic Preservation.

Only one site is currently listed on the National Register of Historical Places. That is the Elizabeth Daly House (641) Baker Street.

2.3 Goals, Objectives, & Policies

The following Goals, Objectives, and Policies will help guide the City of Wisconsin Rapids to better protect and utilize its natural, agricultural, and cultural resources.

A. Natural Resources

Goals:

1. Provide a safe, clean, and enduring natural environment for residents.
2. Ensure future non-metallic mining sites will not negatively impact the planning area or its residents.
3. Maintain the area's diverse wildlife habitat.

Objectives:

1. Require enforcement of existing regulations, especially in environmentally sensitive areas.
2. Conserve and enhance the city's distinctive natural amenities.
3. Carefully plan development adjacent to rivers, lakes, streams, and wetlands need to be carefully planned in order to maintain these areas.
4. Promote development to minimize activities that harm life-sustaining ecosystems.
5. Reduce the amount of storm water and pollutants that flow into surface waters.
6. Protect and enhance the aesthetic beauty of Wisconsin Rapids' water resources for all to enjoy.
7. Identify and map all existing and possible mining sites.
8. Promote the idea that incompatible uses with mining will not develop adjacent to one another.
9. Ensure the natural environment and rural characteristics will not be harmed by mining operations.

10. Protect the city's areas of threatened and endangered species.
11. Maintain connections among wildlife habitat areas.

Policies:

1. Identify key natural resources.
2. Encourage the city to communicate with residents regarding regulations.
3. Work with the county on informational programs and brochures regarding natural resources to educate and inform the public.
4. Encourage a buffer area around delineated wetlands, with no permanent buildings.
5. Work to ensure enforcement of floodplain zoning, conservancy zoning, and shoreland zoning ordinances to protect water quality.
6. Consider establishing a groundwater protection plan.
7. Update the 1982 Sewer Service Area (SSA) Plan.
8. Identify and promote development plans that facilitate reduced unfavorable impacts on the environment as a whole, to include, but not limited to, mixed use and cluster developments and developments tending to minimize motor vehicle traffic.
9. Promote the use of water saving devices, such as low-flow showerheads and toilets, encourage the use of rain gardens and barrels, and offer incentives for their use in order to assure adequate quantities of safe water for the future.
10. Encourage the city to acquire the county mining location maps and use them when deciding land use issues.
11. Encourage the city to steer incompatible uses away from identified mining sites.
12. Support the preservation of key habit areas and large undeveloped contiguous natural areas.
13. Support neighboring jurisdiction's wildlife preservation plans.

14. Incorporate natural resource areas in plans for parks and open spaces.
15. Promote native species landscaping.
16. Encourage the city to work with federal, state, and county agencies to seek funding for habitat protection.

B. Agricultural Resources

Goal:

1. Provide for the future viability of the agricultural resources within the planning area, unless circumstances indicate another optimal use, which will not unduly damage the overall ecosystem.

Objectives:

1. Encourage efforts to keep agricultural uses in and adjacent to the city until a time that these lands need to be converted to another and higher best use.
2. Provide for an orderly changeover of agricultural land to other uses, with due consideration to preserving ecosystems that will meet future human needs.
3. Buffer non-farming uses from agricultural lands in order to lower the number of possible nuisance complaints (by city residents) regarding these agricultural lands, while considering and fostering compatible agricultural and non-farming uses.
4. Cooperate with the surrounding communities on all land development within the planning area to limit locating incompatible land uses adjacent to one another.
5. Expand and improve on events like the Wisconsin Rapids' Farmers Market.

Policies:

1. Maintain and regularly update an Official Map detailing future plats within the city and its planning area (Extraterritorial Plat Authority area). These areas adjacent to farmlands should be planned with adequate buffers, and with consideration of future needs for farmlands.

2. Coordinate with the surrounding towns in the future planning of agricultural lands adjacent to the city. Areas that are to remain in agricultural production should be buffered from existing and future developments of the city, and/or planned for compatible, sustainable use.
3. The City Council and City Plan Commission should meet/consult with the surrounding towns, and the state to ensure cooperation in land use planning especially with those lands on the periphery of the city and within the extraterritorial planning area.
4. Continue to inform and work with its neighbors on future land use plans/changes according to s 66.1001.

C. Cultural Resources

Goal:

1. Preserve the city's historic, archeological, and cultural locations and structures will remain preserved for the city residents.

Objectives:

1. Preserve buildings (churches, historic homes, and buildings), structures (out buildings, bridges, etc.), and other landscape features (cemeteries, fence lines, etc.) that are the city's cultural history.
2. Identify these resources to the city residents for their information and possible use.

Policies:

1. Work to identify and preserve the locations of these historic sites.
2. Discourage the destruction of these sites and will not allow incompatible uses around them that would have negative impacts on the resource.
3. Work to recognize historic figures or events.
4. Work with federal, state, and county agencies to ensure all sites are identified and properly protected.